Tracking Public Money in the Health Sector in Mozambique: Conceptual and Practical Challenges

by

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I. INTRODUCTION

In most health facility surveys, the facility is an object of interest in its own right. Data are collected on costs, quality, or some other facility characteristics with the objective of either studying facility performance or outcomes, or to use facility characteristics to better understand household behaviour. However, in health systems where providers are government financed and operated, health facilities are merely the final link in a broader system of public service financing and delivery. A number of recent health facility surveys have made this broader system the focus of analysis. These surveys, often referred to as Public Expenditure Tracking Surveys (PETS) or Quantitative Service Delivery Surveys (QSDS), collect data from health facilities, but also from the administrative units at local and central government level that are charged with the financing and administration of the facilities. A central aim of the surveys has often been to determine whether funds allocated by government to health services delivery actually make it to the facilities that are supposed to deliver the services.

The first PETS was carried out in the education sector in Uganda in 1995 (Ablo & Reinikka, 1998). It was motivated by the failure of educational outcomes to respond to increases in public spending on primary education in the early 1990s. The survey, which covered 250 primary schools around the country, famously found that over the five years preceding the survey, schools had in fact only received 13 percent of the capitation grant that they were entitled to. This striking finding, and the vigorous policy response by the Ugandan government that ensued, has led to widespread interest in the PETS approach. Tracking surveys have now been undertaken in a large number of countries, and have become a standard tool for public expenditure analysis and fiduciary accountability.

Yet, many of the tracking surveys that have followed in the wake of the Uganda survey have not generated as striking findings, and have not had the same impressive policy impact. Why is that the case? Although the survey in Uganda addressed a seemingly straightforward question—do schools actually get the funds they are entitled to?—it turns out that this question is often difficult to answer. This paper provides a brief overview of the conceptual and practical challenges that arise in designing and implementing tracking surveys, and draws on a 2002 tracking survey in Mozambique to provide concrete examples of how these challenges arise in practice.[1]

II. THE CHALLENGE IN TRACKING PUBLIC MONEY

One of the reasons for the success of the first education PETS in Uganda was that the capitation grant was very amenable to tracking: reliable data could be collected from primary schools, it was easy to establish that the funds had been released from central level, and there were clear and explicit rules about how much schools were supposed to receive. But tracking public money is not always that straightforward. Indeed, due to poor record keeping and other problems, the first health PETS, undertaken in Uganda in parallel to the 1995 education PETS, did not generate any clear findings. Similar problems have plagued tracking surveys in other countries. Why was the outcome of the health PETS so different from that in education, and why

have many other tracking surveys found it so difficult to measure leakage? There are three key reasons.

Dealing with complex resource flows

In most developing countries, government health facilities do not receive a single monthly budget allocation that they proceed to spend and account for. Rather, they receive both financial and in-kind resources, typically through multiple channels, each governed by separate administrative and recording procedures.[2] In each case, there are risks of leakage.

Salary payments—sometimes made in cash to staff, and sometimes paid directly into individuals' bank accounts—are typically subject to the specific institutional arrangements that govern the overall government payroll. Salary budgets can 'leak' at different levels of government as a consequence of administrators simply withholding salary payments, by creating fictitious health workers—'ghosts'—and collecting the salaries on their behalf, or by paid staff simply not showing up for work. Medical supplies, including drugs, vaccines, and other material, are often procured at central or regional level and distributed to facilities in-kind.[3] Facilities also incur other minor recurrent expenses—e.g. food for patients, stationary, cleaning material, utilities, etc. Small budgets may be allocated for these purposes, or, where facilities are small and isolated, the expense may be incurred by local government and material distributed in-kind to facilities. Expenditures on drugs and other supplies can leak through the procurement process, or through supplies being stolen, lost, or disposed of (e.g. expired drugs or vaccines) as part of the distribution process. Similar issues arise in relation to other non-salary expenditures.

Because of the complex institutional arrangements for financing health facilities it is typically difficult to collect data on *total* resource flows to facilities, and to assess leakage of overall facility financing. It is also clear that risks of leakage can arise at facility, local government, and central government level, and that the relative risks at different level are likely to vary across resource flows and contexts. A first step to successful tracking is hence to map out the respective flows, determine the scope for leakage, and establish how different forms of public expenditure flows are being recorded.

The concept of 'leakage'

Most tracking surveys have a clear objective of measuring and, at least to some extent, explain 'leakages' in the flow of resources from central government to individual service providers. The working hypothesis is typically that, as in Uganda, a sizeable share of the funds intended for schools and health care facilities do not reach their intended destination. The question that tracking surveys try to address is undoubtedly important, but the concept of 'leakage' has often proven difficult to pin down in practice.

Leakage is generally thought of as the difference between the resource allocation or entitlement of a particular facility for a given period on the one hand, and the amount of resources actually received during the relevant period on the other. In the Uganda education PETS, the focus was on the capitation grant to schools. The grant regulations established an explicit amount, based on the number of children in the school, that district offices should pay to individual schools. Once it had been established that central government had disbursed the

budget to the district offices, the allocation rule and data from the schools on funds received were sufficient to construct a meaningful leakage estimate.[4]

In many contexts, however, there are no 'hard' allocation rules or formal and binding budget allocations to individual service providers (Table 1). Instead, there may be line-item allocations to geographical units, such as districts, which then have considerable or full discretion over the allocation of resources between facilities. Alternatively, the allocation of resources may be guided by criteria or norms established at central level, again leaving discretion for local managers to adjust allocations on the basis of need or other considerations. The absence of hard allocation rules clearly complicates the task of conceptualizing and measuring leakage. While it is still possible to collect data on funds or resources received by service providers, these data can not be compared with an defined allocation or entitlement to determine leakage.[5] Analysis of the data can however generate other insights—concerning delays in resource transfers, or consistency of resource transfers with allocation criteria or norms.

Table 1: Examples of allocation rules

Type of allocation rule	Example	Implication for assessing leakage
'Hard' allocation rules	• Binding prospective funding formulas (e.g. capitation payments) • Formal budget allocations (global or line-item) to facilities with strict procedures for budget changes during the implementation period	• Difference between allocation and funds received can be established provided reliable data can be collected • Difference can be considered leakage if it can be established that it does not result from administrative bottlenecks (e.g. in budget execution process) • Leakage may reflect embezzlement or fraud, but possibly also legitimate re-allocation of resources
'Soft' or no allocation rules	• Normative allocation criteria (e.g. for allocating drugs and staff to facilities) • Informal budget allocations (global or line-item) with significant local discretion in both initial allocation and changes in budget allocation • Multiple facilities part of higher level budget entity (e.g. district), with full local discretion over allocation of resources	• Difference between allocation and funds received can be established provided reliable data can be collected • Difference can not necessarily be considered leakage, as departure from norm or allocation criteria is permissible… • 'Narrow' leakage can be assessed by comparing actual funds disbursed (or resources distributed) at higher level, and funds received • Other issues can be addressed, including consistency with allocation criteria, equity, delays and bottlenecks in resource transfers, etc.

Making sense of records

Regardless of what expenditures are being tracked, data collection is typically based on structured questionnaires. In part, information is gathered through interviews with health facility staff, district administrators, and other relevant staff. However, what distinguishes tracking surveys from perception-based surveys is the effort to capture quantitative information from administrative records—e.g. budgets, expenditure accounts, receipts, drug records, payrolls, etc.

These records may be complicated and difficult to understand. To make matters worse, they are often poorly kept, reflecting a lack of capacity, weak procedures, and possibly efforts by staff to 'game' the system. Data collection is hence demanding work, which arguably highly qualified professionals (such as accountants or auditors) are best placed to undertake. However, unlike audits, PETS try to collect data from a large and representative sample of providers—this is arguably what makes PETS findings so powerful. With a given budget, survey organizers hence face a trade-off between scale and quality.

As was the case in the first health PETS in Uganda, many surveys have indeed struggled with records that are both incomplete and riddled with errors. As a result, it is often unclear how discrepancies in recorded resource flows between different levels of government, or between government administrative units and providers, should be interpreted. Do they reflect leakage, or are they simply errors in book-keeping? This points to the importance of understanding the limitations of administrative records, developing questionnaires that properly reflect the institutional context, training enumerators, and balancing the scope of the study (in terms of content and geographical coverage) with depth and quality.

III. CHALLENGES IN PRACTICE: THE MOZAMBIQUE TRACKING SURVEY

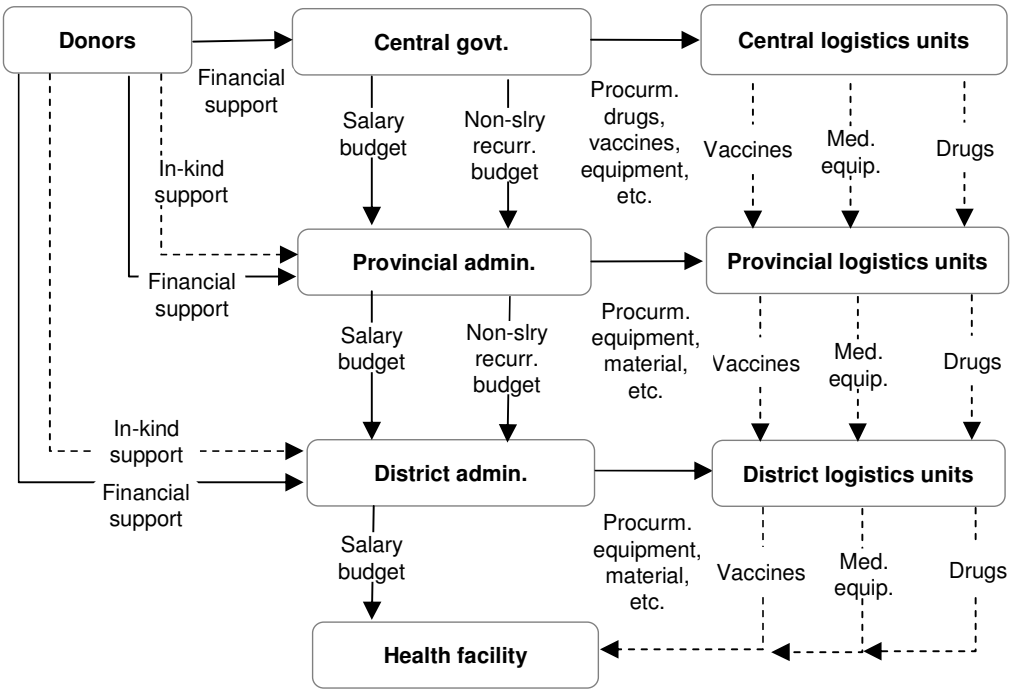
The Expenditure Tracking and Service Delivery Survey in Mozambique: Context and Background

Mozambique is one of the poorest countries in the world.[6] Since independence from Portugal in 1975, Mozambique has made considerable progress in establishing a health system based on public financing and provision (Noormahomed & Segall, 1994). The last couple of decades have seen a rapid expansion of health facility infrastructure and health sector staff. This has permitted a considerable growth in aggregate service outputs. However, there is also evidence of notable problems in service delivery, including low technical quality, lack of drugs and equipment, low staff morale, and informal charging. In addition, little is known about the process by which resources are allocated—between districts as well as between facilities within districts. With these issues in mind, an Expenditure Tracking and Service Delivery Survey (ETSDS) was implemented in 2002, with the aim of providing quantitative and representative evidence on how the financing and logistical arrangements for supporting health centers and health posts operate in practice, and how these arrangement impact on the capacity of facilities to deliver services.[7]

Similarly to other tracking surveys, the starting point of the Mozambique ETSDS was a concern that resources allocated to district health services did not reach the facilities that were supposed to deliver the services. In preparing for the survey, the complexities of financing and logistical arrangements in the health sector became apparent (Figure 1). Aside from salaries, there are no financial transfers to individual facilities. Instead, facilities receive in-kind resource transfers, with procurement happening at either central, provincial, and district level depending on the specific input. The survey team hence faced a difficult choice. One option would be to focus on a specific resource flow, collect very detailed data that would permit a reliable assessment of leakage, but risk having limited impact because of its narrow focus. The

alternative—the option actually chosen—was to take a broader focus, with a risk that the data would not permit firm conclusions regarding leakage.

Figure 1: Financial and resource flows to primary level facilities in Mozambique



The questionnaires and data forms included sections on three key inputs in the delivery of health services: (i) district recurrent budgets; (ii) human resources; (iii) drugs and other supplies. In addition, data were collected on user fee revenues, infrastructure, and service outputs. Data collection at province-, district-, and facility-level was complemented with interviews with individual health workers and patients.

Measuring 'leakage'

An immediate challenge in the Mozambique survey was to clarify what is meant by 'leakage'. With the exception of salary payments, which are determined by the number of staff in the facility and their salary grade, other resource flows to the facility were not governed by 'hard' allocations. Consider, for example, the case of the non-salary component of the budget. While the annual budget established an explicit allocation for non-wage recurrent expenditures for health in each province, allocations to districts within the province were merely indicative, and could easily be changed in the course of the year. In this case, should leakage be assessed relative to the initial or final allocation? The answer to this question presumably depends on whether the budget change can be considered a legitimate adjustments to reflect changing circumstances or needs, but this is very difficult to assess in practice.

Similar issues arise in relation to drugs and other medical supplies. Drugs are distributed to health centers and health posts through two separate channels: pre-packaged drug kits and individual drugs. The allocation of kits is loosely based on historical patient volume, while

individual drugs are distributed on the basis of requisitions by facilities. In both cases, administrators at both provincial and county level have considerably discretion over how drugs are allocated in practice. Again, there was no 'hard' allocation against which the actual distribution of drugs could be compared. In these cases, the survey could only focus on a 'narrow' concept of leakage—i.e. a comparison of the amounts of resources that higher levels record as distributed on the one hand, and the amount of resources actually received by lower levels on the other.

Interpreting questionable data

Data quality was a serious concern in most of the areas covered by the questionnaires. Consider, for example, the case of the non-wage recurrent budget records. Given that the District Health Offices (DHOs) render accounts to the Provincial Health Offices (PHOs) on a regular basis, it should, in principle, be possible to collect complete financial data at provincial level. However, in the event, the enumerators found that in almost all provinces, the financial records suffered from large gaps; complete district-level budget data could be collected for less than 40 percent of districts. Moreover, the enumerators often found that district records bore little relation to the information that had previously been collected from the District Health Offices (there were discrepancies between provincial and district records in approximately 75 percent of the districts). These inconsistencies may have many sources, including poor record keeping and a failure to close annual accounts, error in data entry, and uncoordinated updating of records to reflect budget changes in the course of the year. It is also possible that they may reflect, in some cases, willful manipulation to hide financial irregularities. Similar challenges also arose in the case of drugs and, surprisingly, human resources. In many cases, gaps in human resource data concerned non-establishment staff. For example, most provincial directorates were not able to provide information on the number of community health workers and the number of staff paid with user fees in the sampled districts and facilities. However, even in respect of establishment staff, it often proved difficult to reconcile provincial and district staffing data.

These data problems raise an important question: if there are discrepancies in information about resource transferred collected from the 'sender' and the 'receiver', does this mean that the money has somehow been lost along the way. This is of course difficult to answer. In the case of human resources, this hypothesis could be rejected as the provincial records often indicated that there were *less* staff at district and facility level than there actually were. If the opposite were true, the survey would have raised concerns about ghost workers. In the case of drugs, the survey found that in 25-30 percent of the districts, the number of drug kits received by the district did not correspond with the number of kits provincial books recorded as distributed. Similarly, in 60 percent of districts, the total value of individual drugs that the province report having distributed to the district is lower than the amount districts received, with the difference ranging between 10 and 90 percent. While these findings are strong indications of leakage, the data also suggest that a few districts receive *more* drugs than provinces claim to have distributed. In other words, it is possible that observed discrepancies are driven by poor record keeping rather than irregularities.

Table 2: Summary of findings from the Mozambique ETSDS

	Non-wage recurrent budget	**Drugs, vaccines, and medical supplies**	**Personnel / salaries**
Allocation rules	Legally binding allocations to provinces; explicit but changeable allocations to districts, no financial flows to facilities	Nominally allocated on basis of facility activity, but considerable local discretion	Provincial allocations determined centrally; considerable discretion over staff allocation within provinces
Source of data	Financial statements at provincial and district level	Distribution and stock records at different levels	Personnel records at province, district, and facility level
Leakage	Discrepancies b/w province & districts for 75% of districts, but not systematic	Some drugs 'sent' were not 'received', but much noise	Inconsistencies in data across levels, but not systematic; 18% of facility staff were absent

Beyond leakage

Estimation of leakage proved a difficult undertaking in the context of the Mozambican health sector. Nonetheless, the documented discrepancies in information were a clear sign in of weaknesses in management and control systems. These weaknesses undoubtedly hampers efficiency and equity in the allocation of resources and deployment of staff. Moreover, although there is little firm evidence on leakage, the evident lack of control provides insufficient incentives against fraud or malfeasance. Equally important to providing evidence on leakage, however, the study generated a number of useful findings in related areas, including bottlenecks and delays in budget execution and the distribution of drugs and materials, human resource challenges, inconsistencies in the implementation of user-fee policies, etc. (see Table 3). Taken together, these findings provided the basis for three regional dissemination workshops, which brought together both central and local staff from the Ministry of Health and the Ministry of Planning and Finance. These workshops were not only forums for disseminating the findings, but also for discussing the sources of the problems revealed by the survey, and for identifying possible measures to address the problems.

Table 3: Key survey findings beyond leakage

Non-wage recurrent budget	• Delays in the execution of the non-wage recurrent budget (in many districts the initial budget transfer to districts, due in January, was only made in March or April, and monthly replenishments were frequently delayed by several months) • Delays and other factors resulted in low levels of budget execution at district level, with an average execution rate of 80 percent, and some districts executing only 35 percent of the original allocation • Dramatic disparities in district spending per capita, and that these disparities can not be adequately accounted for by differences in population or infrastructure
Drugs	• Delays in drug distribution and evidence of stock-outs • Individual drugs comprise large share of drugs used in health centers and health posts, even though drug kits are supposed to be adequate • Despite explicit aim of need-based distribution of drugs to facilities, there was considerable discrepancies in the number of tablets distributed per patient for six tracer drugs (e.g. aspirin between 1.1 and 16 per patient episode)
Human resources	• Delays in salary payments (60 percent of staff report receive salaries late 'often' or 'almost always') • Absenteeism (19 percent of staff were not present at time of visit) • Low levels of health worker satisfaction, in particular in rural areas (75 percent of staff in rural facilities wanted to transfer
User fees	• Despite existence of national policy, fees charged for consultations and medicines vary considerably between province, districts and facilities. Similarly, rules for exempting specific user groups or services from payment for consultation or medicines vary greatly across districts and facilities. • Sizeable share of user fee revenues not recorded by facilities (68 percent of the total consultation fees paid and 80 percent of medicine payments , based on a comparison of expected total facility receipts given patient volume and reported payment, and amounts reported by the facilities)

IV. CONCLUSIONS

This chapter has outlined a number of conceptual and practical challenges that arise in designing and implementing public expenditure tracking surveys, and has provided some concrete examples of how these challenges play out in practice based on a recent tracking survey in Mozambique.[8] Where it has been possible to estimate leakage, there have often been questions about what 'leakage' represents. Is evidence of leakage an indication of corruption? That has often been the interpretation, but leakage can often be explained by other factors, such as administrative bottlenecks, legitimate re-allocations, etc. While the conceptual and practical challenges have prevented many surveys from generating reliable estimates of leakage, these surveys have still often generated highly policy relevant findings. That said, policy relevant findings—whether on leakage or other issues—are clearly not sufficient to justify the often considerable resources that are required to design and implement a survey.

So, have tracking surveys to date provide value for money? Needless to say, this is a difficult, if not impossible, question to answer. That said, a few lessons emerge. First, tracking surveys can be useful tools for diagnosing and understanding public expenditure management issues—including corruption, allocation decisions, compliance with administrative procedures, accountability arrangements, etc.—in sectors with service delivery functions. However, tracking

surveys are by no means the only tool, and in many cases may not be the best tool. For example, audits, institutional reviews, assessments of financial management procedures, and other approaches all have important roles to play. The strength of the PETS approach is attempt to collect quantitative data, and the focus on how weaknesses in the public expenditure management system impact on service delivery. This strength has not always been exploited, and many surveys have not effectively linked with other tools and approaches.

Second, in order to effectively shed light on complex institutional and financing arrangements, and in order to ask the right questions, these arrangements must be properly understood before the survey is designed and implemented. Some tracking surveys have been driven by a general question and a tight deadline. The result is inevitably disappointing. The design, implementation, and analysis of tracking surveys take time. It is often advisable to start small—e.g. by doing a small scale pilot survey combined with more in-depth qualitative work. Too often, however, expensive, large-scale surveys are launched in a rush.

Third, despite the intention of many tracking surveys to shed light on why leakages and service delivery problems arise, they tend to be better at diagnosis than making inferences about the determinants of the outcomes of interest. This is in large part because key determinants of outcomes of interest are complex institutional factors which are difficult to measure, and in which there may be little variation. The scope for using *cross-section* data from tracking surveys for inferential quantitative analysis is hence limited.[9] While a focus on diagnosis may be both useful and appropriate in many context, diagnosing leakage or other problems in the absence of a process for identifying ways to address the problems can be destructive. Yet, this is a component that is often lacking, in part because budget or broader public sector reforms call for expertise beyond what typical survey teams include.

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[1] This paper does not seek to provide a comprehensive review of expenditure tracking and service delivery surveys. For a recent review of tracking surveys in the health sector, see Lindelow et al. (2006); for a discussion of education sector PETS, see Reinikka and Smith (2004).

2 For example, in Ghana, Rwanda, and Mozambique, facilities receive receive practically no cash, aside from user fee revenues generated by the facilities. Instead, salaries are paid directly to staff and other resources are procured at higher level and distributed in kind.

[3] The rationale for central procurement is that the procurement of medical supplies requires technical skills, and that high-volume procurement can reduce costs. Some medical supplies are also perishable, and, in principle, central procurement can facilitate control over storage and distribution.

[4] Incidents of leakage in this context do not necessarily reflect corruption, and may be welfare-enhancing. For example, local government may decide to re-allocated resources to meet needs that are of higher priority for the local community. The Uganda education PETS provided anecdotal evidence that this was not the most likely explanation. Rather…

5 It is still possible to compare funds and resources received with amounts actually disbursed or distributed by higher level, but this is considerably more narrow concept of leakage than the common understanding of the term.

[6] GNP per capita (Atlas method) was USD210 in 2003 according to World Bank World Development Indicators. In 1997, the poverty headcount was 69 percent (MPF, 1998). The latest National Health Account data suggest that total annual health sector expenditures from all sources is only USD 8.8 per capita (Yates & Zorzi, 1999), with over half of spending financed by donor agencies or NGOs, approximately a quarter from government tax revenues, and slightly less than a quarter by households through out-of-pocket payments.

[7] The survey collected data from 90 facilities, 35 District Health Offices, and 11 Provincial Health Offices. The sample of health facilities was selected in two stages: a random selection of districts, followed by a random selection of facilities within the district. Facility users and staff members were also sampled randomly. Sampling weights were used to provide nationally representative estimates. For a detailed discussion of the survey approach and findings, see Lindelow et al. (2003).

[8] Although the chapter has focused on the Mozambique survey, similar problems have been encountered in many other surveys. For a discussion, see Lindelow et al. (2006).

[9] With repeated surveys, there is of course scope to use tracking surveys to evaluate impact of institutional reforms. With the exception of an evaluation of an information campaign in Uganda, there are few examples of tracking surveys being used for this purpose (Reinikka & Svensson, 2004).

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