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Report on Assessment of Mechanisms for Repair and Maintenance in Selected Hospitals of Nepal

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Report on Assessment of Mechanisms for Repair and Maintenance in Selected Hospitals of Nepal

Report Outline

This report is based upon visits (Dec 03 to Jan 04) to the ten District Hospitals (DHs) and three Zonal Hospitals (ZHs) in the districts supported by the GTZ Health Sector Support Programme (HSSP) Nepal. The overall objective of the assignment is to assess the mechanisms and the financing of Repair and Maintenance (R & M) in the hospitals. To assess these mechanisms we looked at the procedures followed for R & M by the different stakeholders involved, the way capacity has been built up and employed for R & M, costs and actual expenditure for R & M and the potential to increase allocation of budgets for R & M through income generation of hospitals.

During the visits, meetings were held with a range of individuals involved in the management of the hospitals in general and their repair and maintenance mechanisms in particular. In addition, meetings were held with a range of individuals from various organizations including International Nepal Fellowship (INF), the Ministry of Health, the World Health Organisation, United Nations Fund for Population Activities and the World Bank. (s. Annex 1)

The first section of this report provides a brief background to the role of R & M in hospitals. Section 2 outlines the procedures followed for R & M and the role of different stakeholders within the processing. Section 3 summarizes the current policies and activities with regard to human resource and capacity building for R & M in the respective districts. Section 4 covers the main aspects of financing R & M such as estimates for the cost of R & M, allocation of budgets and actual expenditure for it. Also, it discusses the potential to increase R & M budgets through income generation within hospitals. Finally, Section 5 gives recommendations based on the study.

Introduction

Well-maintained and functioning medical equipment is essential for the delivery of effective and safe health services. Good management of medical equipment requires inventories of equipment, allocation of budget for the costs involved in the repair of the equipment, a plan for preventive maintenance, trained technicians, access to technical specifications, manuals and spare parts, and clear lines of responsibility for ensuring that equipment is maintained and appropriate equipment is requested and procured. Without this, there is no certainty about what equipment should be available or where it is; when equipment breaks down, no-one is informed that it needs repair; there are no resources to finance the repairs and no life-cycle planning is undertaken to plan for the replacement of important equipment.

As other developing countries, Nepal encounters significant problems with out-of-date and poorly maintained facilities and equipment. The capability to manage or maintain medical equipment remains weak in most public health care facilities. This is a critical issue, especially as the demand for and the provision of technical medical equipment (e.g. x-rays, ultrasound units and laboratory equipment) is increasing. It appears that the growth in capacity to manage or maintain this equipment has lagged

behind the rate of deployment. As a result, non-functioning and poorly maintained medical equipment is a significant worsening problem, affecting the ability to provide effective services. Often, relatively minor problems (e.g. loose or missing nuts and bolts, broken wires) stop equipment from functioning. Then, shortages of spare parts and of technicians with basic training in maintenance often mean that equipment cannot be used.

It is now recognized that a more comprehensive approach to the effective management of medical equipment is required. This study summarizes the current state of R & M in 10 District Hospitals and 3 Zonal Hospitals, most of them situated in the Mid and Far Western Region of Nepal. Further, it outlines health sector policies at the central level with regard to R & M and gives an outlook on possible ways forward.

Procedural mechanisms for R & M

In general a **lack of awareness and initiative** towards R & M prevails. For example, the number of repairs done by INF is highest where the hospitals do not have to show much **initiative** as INF visits occur frequently (every 1-3 months). Although hospitals in the remoter districts know that INF comes on request, requests seem to be rare if the hospitals have to take own initiative as INF shows up less frequently (every 6-12 months). In approximately half of the sites visited there is non-functioning equipment such as ECGs or X-Ray machines for which necessary requests for repairs have not yet been issued. And, especially with regard to smaller equipment, which does not function properly, **awareness** that repair is needed is low. *For example: Surkhet District Hospital: it was first stated that blood pressure instruments are working. With a closer look, their function was quite limited. Nevertheless, they were still in use and nothing had been done to replace them.* Similar situations were encountered in other hospitals.

Notably, awareness and initiative for **preventive maintenance** is low. A system for maintenance, such as periodic overhauling/maintenance including lubrication, change of mobile parts or complete replacement, is not in place within the hospitals. As commented by INF engineers, major causes for breakdowns of equipment are lack of periodic maintenance and proper operation. Although INF trains hospital helpers in preventive maintenance, no policy on preventive maintenance appears to be promoted. A majority of the break-downs (e.g. non-functioning refrigerators) can be traced back to a lack of maintenance. Without any systematic approach towards R & M, preventive maintenance is likely to have less priority as compared to repair work. Repeatedly, comments were that R & M is dealt with on an "ad-hoc" basis, what implies that initiative is only taken once equipment does not work anymore. The only form of preventive maintenance in place seems to be the periodical check-ups by INF, but these range from monthly visits in the close districts to yearly visits in remote districts.

There is little awareness with regard to when equipment can still be repaired as to when it **needs replacement**, because of being obsolete or technologically out of date. *For example: Surkhet Hospital: The X-Ray machine does not work properly and has been repaired many times. Several times, when INF came on request to repair the machine, it recommended replacing the machine, but action has not yet been taken. Seti Zonal Hospital: an ultrasound machine broke down 5 years ago, it was sent to Kathmandu for repair and a new one was sent back. According to the LMD (Logistic Management Division), it needed replacement.*

None of the hospitals has an inventory with information on the date of purchase of equipment in order to estimate when replacement is needed. This implies that none of the hospitals has provision for a replacement or depreciation fund. Nor is there any insurance scheme introduced for equipment and hospital building, except for an ambulance in Lahan hospital. The decision whether equipment is repaired or needs replacement seems to depend on which option is easier to follow.

Requests and repairs take time and are not always successful. In more than half of the hospitals visited requests have been issued to the LMD without success. Most of the cases were requests for repair of x-ray machines. In some cases no specific response was given by the LMD. *For example: District Hospital Dadeldhura: The hospital has frequently problems with non-functioning refrigerators. LMD assured to send a freeze technician, but without specification when this would happen.* In other cases, equipment cannot be repaired due to the lack of spare parts that have to be imported. There is no provision for a stock of spare parts for equipment. One reason for this is that storekeepers do not know which spare parts are necessary (*Bardiya District Hospital*). In some cases, several years have passed since the moment that the equipment stopped working and no further initiative is taken while requests are pending. *For example: Seti Zonal Hospital: X-Ray is not working since 5 years. Doti District Hospital: X-ray is not working since 7-8 years.* The general attitude is that requests to the LMD are too cumbersome and uncertain. Consequently, hospitals tend to turn more towards directly asking donors and NGOs. *For example: Seti Zonal Hospital: Request for Operation table was first forwarded to LMD. After waiting for a year, INF was addressed.*

R & M is not consistently taken into account at the **purchase stage**. This implies that in most of the cases there are no service contracts with the providers of equipment. The hospitals repeatedly commented not having operational manuals for the equipment. But this may also be because they are not kept properly, since normally they are always included in the package of equipment, the LMD confirms. Equipment, specially the equipment procured by donors, is rarely accompanied by adequate spare-parts. According to UNFPA this is not feasible, as it is difficult to calculate which spare parts are likely to be needed. Nevertheless, in case of imports where spare parts are difficult to procure, this is a major inhibiting factor for repair, leading to discarding equipment. Often, discarded equipment and hospital furniture is occupying a major portion of store, and some hospitals have even closed down hospital beds (thereby reducing hospital's income earning capacity) to store such discarded items waiting to be written off.

Almost all repairs of medical equipment within the region of this study are dealt with by INF, followed by the LMD. The private sector plays a minor role in the terai regions (*for example Mahakali District Hospital: Small repairs beyond the capacity of the peons are also dealt with the private sector, but it is not possible to give estimate how often*), in the remote hilly regions the private sector is basically non-existent. How far hospitals are satisfied with the work of INF depends on the frequency of contacts and the time needed for the service. The latter correlates with travel time involved for INF. In the closer districts, hospitals are quite satisfied with the work of INF as repairs are usually dealt with within a week (*For example: Mahakali Zonal Hospital: "no case, where INF were not able to do the repair"*), whereas in the remote districts comments are that repairs take time, as equipment may only be returned within the next visit of INF (*For example: Dadeldhura District Hospital: Petromax had to be taken to Pokhara for repair, could only be returned after 9 months. "The work of INF does not meet the needs, as it is uncertain when they come, not promptly upon request."*). This may also explain why the hospitals with a close contact to INF in general issue their requests directly to INF, whereas distant hospitals are more likely

to first send their requests to the central level. Visits by INF have been more frequent in the initial face of the project with the intention to establish the contacts. Within the last year the number of visits has decreased, as INF has focused more on the construction of workshops.

Capacity Building for R & M

One of the main constraints for effective R & M is the lack of trained technical staff in the hospitals. For basic repairs of buildings and simple electric fittings training of non-technical staff can be sufficient. For repairs beyond plumbing and electric wiring it is necessary to train technicians on a wider basis stressing practical proficiency in basic engineering skills and additional knowledge in the maintenance of the most common types of medical equipment and hospital installations.

The main questions with regard to capacity building are:

- What is the current level of capacity?
- Where are the gaps in performance and capacity?
- What capacity is needed?
- How can the intervention best address the gaps in capacity and performance?

The **capacity currently involved with R & M** (s. Annex 2) mainly consists of a few (approximately 4) biomedical engineers and technicians, one of them working for the LMD, the others for INF. Further, INF has been providing two-weeks trainings (basic and refresher) with the aim to enable hospital staff to do maintenance work and simple repairs. In almost all cases the staffs chosen for training were hospital helpers ("peons"), normally two for DHs and three for ZHs. INF admits that providing training efficiently to peons has its limitations but nevertheless has chosen to do so as other higher- level technical staff is not available. Zonal hospitals have a post assigned for a technician, but these posts are vacant in two out of three of the Zonal hospitals visited. Only Seti Zonal Hospital employs a technician who took the training. Looking for an alternative to the training of peons, INF tried out to train administrative staff instead. Results were not as desired as the trained administrators did not do the repairs work themselves but instead delegated it to lower level staff. The reason for this appears to be that the practical work of R & M is too different from the other desktop duties of administrative staff.

After being trained by INF, the peons are able to do simple repairs such as electrical fitting and plumbing. The refresher training is meant to provide some knowledge of simple repair of medical equipment, but the general opinion in the hospitals is that peons are not able to repair medical equipment. As mentioned, the training does include instructions on preventive maintenance work. But, looking at the state of hospital buildings and equipment, implementation seems to be weak. Almost in all the visited sites the role of the peons with respect to R & M is considered to be limited as they do only general repairs and are not able to repair medical equipment. Most estimates were that only about 10 % (Dhading) to 25 % (Seti) of the repairs could be done by the peons, in most of the cases requests have to be forwarded to either PAM or INF.

According to some staff (Dhading, Surkhet), the effectiveness of the training could be improved if it was adapted to the specific equipment used in the hospitals. Other comments were that it is important to provide the training to those enthusiastic to do

technical work. The extent to which the trained staff efficiently deals with R & M primarily depends on the incentives provided to engage in the additional workload and responsibility. A major constraint with regard to this appears to be the lack of incentive in terms of a new status with a respective work description. There is no defined post for a "R & M peon" and only in few cases financial incentives are given (Siraha: 250 Rs. per month, Bardiya: 200 Rs. per month, paid out of a seed fund for R & M). According to one hospital manager (Baitadi), receiving the training with daily allowances and the possibility to travel already constituted an incentive.

Further, the capacity of the trained staff to focus on R & M work depends on their additional workload. For example in Seti Zonal Hospital, due to a shortage of staff, the trained peons are not freed from other responsibilities, whereas in Mahakali Zonal Hospitals and Bheri Zonal Hospitals the trained peons are only responsible for R & M, being freed from other responsibilities.

According to most of the hospital management boards the **need for capacity** for R & M work is more or less met if the current system could be improved. This implies that conditions are improved for the peons and training is intensified. Also, hospitals were satisfied as long as INF showed up regularly and comes on request, what would imply that a national body providing regular check-up visits is needed once INF is not there anymore.



Financing of R & M

Revenue Sources of Hospitals

HMG allocates budgets to the Zonal hospitals as block grant, whereas district hospitals receive line-item budgets. ZHs have autonomy with regard to the allocation of both the public budget and the internal revenue (which is mainly generated out of user fees), whereas DHs can only decide on allocating own income according to their needs. Although hospital managing committees are autonomous, they do not seem to exercise their authority. It appears that hospitals have not been very effective in the planning of their income until now. Most of the hospitals have only started allocating internal resources according to defined budgets within the current fiscal year 2003/04. Four of the hospitals in the Far western region are not yet using any budgeting system for their internal revenue (Dadeldhura, Doti, Baitadi, and Achham).

The allocated government budget is the main source of income for the hospitals. It accounts for 60 % of total income within ZHs (FY 2003/04, 3 selected ZHs) what is higher than the national average of 53% in FY2002/03.¹ In DHs, it accounts approximately for 70 % whereas less than 30 % of expenditure comes from internal resources.²

Most of the hospitals' own income is generated through user fees. Other sources come mainly from renting out shutters (usually hospital compounds do not lack free space), for example in Lahan about ¼ of the income is generated this way.

To assess the potential of raising income, we compared the rates used by the hospitals for their services and the range of services extended by the hospitals. As mentioned, systematic and uniform accounting systems for internal revenues are absent in almost half the cases, what makes it difficult to compare the situation and draw conclusions from it. The findings show that there is a large variety of user fees for the same services in different hospitals. In some items, like X-ray the variation is quite big. Internal and governmental guidelines and regulations do not exist or are not implemented.

For example, about half of the hospitals (Bardiya, Dhading, Dadeldhura, Baitadi, Doti, Achham and Jumla) are paying Rs.0.25 tax to the government on each admission case, whereas the other hospitals (e.g. Lahan, Siraha and Surkhet) do not pay any tax. According to the MoH, the regulation is actually to pay 25 % of admission charge as a tax, what would be more than Rs. 0.25, as in most cases admission charge are Rs. 5. These inconsistencies suggest that even where regulations exist, implementation is weak due to lack of transparency.

The data of five DHs (Lahan, Siraha, Dhading, Surkhet and Bardiya) and two ZHs (Bheri and Mahakali) have been taken for analysis of their income and expenditure pattern.

Looking at the average income generation of DHs, a main source (15.7 %) is the renting of shops, followed by x-ray charge (13.8 %). OPD accounts for 6.0 % and laboratory for 6.1 %. ZHs generate more income from lab and x-ray. As a result, on average the highest income source is x-ray (16.2 %) followed by rent (13.7 %) and lab (9.9 %).

¹ Ministry of Health, HMGN: "Public Expenditure Review of the Health Sector", July 2003.

² Since the hospital internal expenditure is taken as the budget, we have considered only the government budget and hospital's expenditure. Details of income and expenditures could only be obtained from some hospitals. Most hospitals in the Far Western Region have not classified the income and expenditures, only use a pass-book.

A major part of the income generated is used as staff incentives. In DHs staff salary financed through own income is on average 15 % and overall incentive accounts for 4.35 %. An interesting example is Dhading DH, where income generation has increased significantly in Fiscal year 2002/03, accounting for about 50 % (Rs.399,430) of total income. Expenditure for staff incentive that year is Rs. 273,340 what is over 68 % of the income from the respective sources. This is even more than the hospital policy allowing that 50 % of the income generated in the different service units goes to their respective staff.

Although the hospitals do engage in raising fees, there is very little effort to work on policies for allocating the money. Also, there are some policies to be questioned, such as the case in DH Dhading. This does not directly lead to improving conditions in the hospital and may even have a negative impact in terms of increasing unnecessary services.

Further, if income generation is promoted, it is important to consider equity aspects. In most cases, consistent record keeping of exemptions does not exist. Nor do explicit criteria exist. Some hospitals provide free beds (e.g. 7% in Bheri Zonal Hospital, 20% in Seti Zonal Hospital), but again without specification as to who is entitled to use the free beds. Without these criteria, the implementation of exemptions depends mainly on the authority that gives consent to exemptions. Sometimes the medical doctor providing the service can decide on exemptions (e.g. Dhading), in most cases the Medical Superintendent has to give his consent. One medical superintendent explained that before providing exemptions, he first has to consult with the hospital management committee (Dadeldhura), transmitting the message that it is usually avoided to provide exemptions.

There is no definition for "being poor". For example in Seti Zonal Hospital, cases exempted are usually cases of accidents, Kamaiyas, "poor", but also hospital staff and their close relatives. There are clear gaps between the number of requests for exemption, the number of exemptions as stated by the medical superintendent and the number of cases where records are kept. According to one medical superintendent, 40% ask for exemptions, in other cases hospital staff stated that people ask for exemptions on a common basis. When asked how frequent patients are freed from paying, medical superintendents give different answers, from "75 % of the medicine is provided for free" (Jumla), to "it happens frequently, maybe 1-2 cases every day" (Seti), to "giving exemptions is clearly discouraged" (Bardiya DH). In most cases, the number of exempted cases seems to be much lower, when taking the records kept within some of the service units. Within these, exemptions range from:

- 1.1 % (laboratory, 3/ 267, 15.04.03 – 15.11.03, Bardiya District Hospital)
- 1.4 % (X-ray, 15/1060, 15.04.03 – 15.11.03, Surkhet District Hospital)
- 3 % (laboratory, 31/1042, 15.07.03 – 15.10.03, Mahakali Zonal Hospital)
- 5.7% (x-ray, sample: 15.04.03 – 15.7.03, Seti Zonal Hospital)
- 7.3 % (x-ray, 66/910, last fiscal year, Jumla District Hospital)

Apart from public and internal revenues, hospitals receive provisions mainly in form of hospital equipment and buildings from donors and NGOs (for example: Seti and Mahakali ZHs: workshop for R & M by INF; Achham: workshop by GTZ, Jumla: delivery ward and store/cold-chain buildings built with DFID support, blood bank building by Red Cross). Although it appears that these are considerable investments, it is not possible to estimate their value as a percentage of the hospital's capital as neither the cost of those nor the costs of public buildings and equipment are recorded.

Earmarked budgets for R & M

In ZHs, on average 1.57 % of the government budget is allocated for R & M, with a minimum of 1.02 % in Mahakali ZH and maximum of 2.00 % in Seti ZH. With regard to allocation for R & M out of own income, only Bheri ZH and Mahakali ZH have spent Rs.427,290 (3.65%) and Rs.57,620 (2.90%) out of its internal resources for FY 2002/03 for R & M. Seti did not keep any category for R & M within their expenditure books.

For DHs the government allocates a fixed budget of Rs.1,500, what on average accounts for only 0.06 % of the government budget. Out of the internal income, expenditure for R & M ranges from 6.02 % (Dhading DH) to 3.57 % in Doti DH, the average expenditure for R & M is 5.03 % (FY 2002/03).³

Seed Funds

With the intention to facilitate funding for R & M, GTZ had introduced seed funds for DHs in four districts (Lahan, Dhading, Bardiya and Doti), Rs.150,000 for Dhading district hospital and Rs.100,000 for each of the other three hospitals. The hospitals themselves added Rs.300,000 in Lahan and Dhading, Rs.75,000 in Doti (s. Annex 3). The Seed Funds are trust funds that are deposited in a fixed account. At present, they carry an interest rate of 4.0 % per annum (see table 1). The interest from the Seed Fund is deposited in a separate account called "R&M Fund" which is used exclusively for RM purpose.

Table 1: Seed Funds with annual interest rates

(Rs. in '000')

Hospitals	Contribution from GTZ	Contribution from hospital	Annual Interest earning at 4% per annum
Lahan	100	300	16
Dhading	150	300	18
Bardiya	100	0	4
Doti	100	75	7

Some hospitals set aside a percentage of their net annual income for R & M. For example, Bardiya DH deposits 20 percent of its annual net income into the R & M account. This is for example used to pay additional monthly allowances of Rs. 200 to the peons trained for R & M. The total deposit in the R & M account was Rs.101,563 at the time of our visit. The additional income out of interest from both the seed fund and the R & M fund by the end of FY 2002/03 was Rs. 41,569.

At Lahan hospital income out of the seed fund has not yet been operationalized. Apparently it is necessary to have governmental guidelines to use income from the fund, which have not yet been drafted. The hospital has been meeting the repair and maintenance expenses out of the reported 7.0 percent of the annual net income set aside for R & M annually.

³ In three out of ten DHs (Bardiya, Achham and Dadeldhura) records of expenses could not be received due to absence of concerned staff during the visit.

Annual cost estimates for RM

The budget/expenditures incurred for the hospitals for R & M in FY 2002/03 is given in Annex-1. However, these figures do not reflect the expenses actually incurred for the repair and maintenance. In order to determine the value of repair activities, it is necessary to reflect the relevant market prices for technical services offered. As INF has been providing the repair services free to the hospitals, and most repair activities of hospital equipment are being carried out by INF, some hospitals have no record of any expenditure for R & M in their budgets. For an estimate on expenditure for R & M it is necessary to have information on what INF has been spending for their units of work, an exercise that has not yet been facilitated.

Recommendations

Improving Procedures

We illustrated that problems related to R & M are substantially linked to a lack of initiative and awareness at the hospital level. This implies that lines of responsibilities should be more clearly defined and that the hospital management boards should be involved in the discussions on policies for R & M at central level.

A major constraint appeared to be the lack any information system facilitating R & M. The LMD has started to set up a database for hospital equipment (including fixtures) with the financial support of USAID and the technical support of two national consultants working for 6 months. For remaining work such as completing the data, the LMD has requested the extension of the consultants for further 6 months. At the same time data collection for another information system to manage R & M has been initiated by GTZ with the support of INF. The advantage of the LMD database is that it already has an ownership at central level, that data has been collected extensively and that it is simply structured as an Access-Database. The advantage of the other information system is that it is more appropriate as a management tool facilitating procedures of R & M. But to fulfil this purpose it requires a sustainable capacity to run and maintain the system, including a central workshop for R & M. A prerequisite for this is that all information on equipment and R & M is channelled through the central level. This is certainly a desirable outcome in itself, but there seem to be a long way to go considering the current pattern of scattered interventions by donors. If the information system helps to channel interventions this would be another objective to promote the system, but it should be assessed how far this is likely to happen. One step would be to standardise hospital equipment and to limit the variety of makes and models of equipment, especially those received under donor assistance. To built up the capacity to run and maintain the system substantial additional resources are necessary to sustain the respective institutions at central level. As we illustrated, currently the LMD is not able to manage provision and R & M of equipment in a satisfying way mainly due to resource constraints.

Currently most of the activities related to R & M in this region are dealt with by INF TAP (Technical Assistance Program). The program closes down its office in Nepalgunj in July 2004. For further two years, INF will only provide service by one technician within a workshop at Bheri ZH. If GTZ intends to take over responsibilities currently dealt with by INF, it appears important that cooperation between INF and GTZ is close during this intermittent phase.

Need for Capacity Building

The current situation suggests that it is not necessary to have a large number of biomedical experts. The policy at central level currently envisages a capacity of one biomedical engineer or technician with a workshop for each of the ZHs (10) and regions. Three workshops at ZHs are currently under construction by INF. In order to groom higher-level technicians for R & M of hospital equipment, the MoH has initiated a proposal for training 500 biomedical technicians within a 10 years period. Participants will be the technicians based in the ZHs. Training will be conducted for two batches, each of 25 persons, annually. One-year course will be for those students, who have passed SLC and 6 months for 10+2 students. Training will be conducted by Tribhuvan University Institute of Engineering, and the practical course will be in the Central Workshop (to be renovated) at Bir Hospital, Kathmandu. After completion of the training, participants are certified by the MoH to practice as Biomedical Equipment Technicians. Graduates will be able to undertake all repair and maintenance of hospital equipment except CT-Scan and MRI. 60% of the graduates are expected to be absorbed by public hospitals and 40% by the private sector. Considering the estimated need for technicians in public hospitals, the number given in the proposal seems to be far too high and may need revision and justification. Currently a problem is that posts assigned for technicians at ZHs are not always filled, hence it should be assured that trained technicians do fill up these posts. The situation in private hospitals is different (e.g. service contracts are more common) and the need and absorbing capacity for technicians may not be as high. Further, responsibilities and commitment of the institutions (MoH, IoE and Bir Hospital) involved in the training still need clarification.

Although the general opinion prevails that the concept of training peons is not satisfactory, this concept seems to have its advantages. Also, there does not seem to be any real alternative and the concept could be improved if some problems such as the lack of work-description and incentives are addressed. Trained helpers do play a complementary role to biomedical technicians, as they are integrated in the hospitals. It appears necessary that their responsibility and capacity for preventive maintenance be enforced.

Financing of R & M

The concept of seed fund was introduced for arranging financial resources for the regular maintenance of physical assets of the hospital and to create self-reliance on the repair and maintenance of the hospital. However, the seed funds did not lead to desired results as:

- Hospitals have not been able to mobilize contributions from sources other than GTZ and HMC (except in Doti, where DDC is one contributor to the seed fund).
- The total amount of interest earned by seed funds is very small.

In contrast, the pledging of hospital management committees to allocate annually a certain percentage of their net income has a direct bearing on the availability of resources for RM purpose (Bardiya vs. Lahan hospitals). But, this study illustrated that a major constraint at hospital level is the lack of administrative capacity and policies on financing. Therefore a priority may be to enforce the capacity and initiative of financial administration in the management of hospitals. This implies that the management committees work on policies and regulations for the allocation of resources and that proper bookkeeping is enforced. Currently hospitals have autonomy in using their internal revenues, but without regulation there is the risk that the priority is to give staff incentives. We illustrated that R & M is a low-priority issue

within the hospital management, what means that adequate budgets are unlikely to be allocated for R & M if there are no regulations in place. To give guidelines on how much should be allocated for R & M at least an estimate on the current expenditure is needed. In order to get the annual cost estimate for the repair and maintenance of hospital equipment, INF services need to be translated to their equivalent market price. Where there is no repair service available in the private sector, the effective cost per hour of maintenance service should be taken into account to calculate the cost for repair and maintenance⁴



⁴ Miethe & Partner Consulting: "Cost-Benefit Analysis for the Hospital Maintenance Services (HMS), CEBU and DAVAO 1996", Philippines, July 7, 1997

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