ASSESSMENT OF THE MANAGEMENT OF HEALTH BUILDINGS, UTILITIES AND EQUIPMENT IN DEVELOPING ECONOMIES

by Hans Halbwachs

1. Introduction

Health technology management becomes increasingly important in developing economies. Also the donor community begins to recognise that without rational technology management and functional maintenance systems the success of infrastructural interventions in health care is questionable.

Developing appropriate systems to manage health care technology is a complex and tedious task. Without a minimum of information about the situation and the factors influencing such systems, the development work will either be not successful or will take to long a time to be economical.

Out of this experience the idea was born to search for systematic and practicable tools for the initial and continuous appraisal of Physical Assets Management in Health Services in Developing Economies, in short PAD.

2. Factors to be Assessed

The experience in developing economies during the last two decades provoked a marked change in perception among health professionals, in particular among those working in public health. In the past e.g. maintenance services were regarded as more or less worrisome appendices of health facilities, all together not worth mentioning, if ever existing. Nowadays, many health services have realised that they cannot survive without strong and integrated maintenance services.

The key-word here is "integration". It does not make sense to investigate only the situation in (selected) maintenance workshops, without realising that they largely depend on the administrative environment which, in most cases, is not overly supportive. In consequence, appraising technology management and maintenance services means to look into the health management levels from the ministry down to the health facilities as well, focusing on the district. The same applies to the maintenance management structure as such.

The detrimental effects of deficient health technology management can be observed in the health facilities themselves. Crumbling structures, dry water taps (if existing), mountains of broken-down equipment and foul smelling, smouldering waste heaps speak a pathetic but plain language.

3. Assessing Progress

Monitoring and evaluating a development process and/or the performance of (sub-)systems with the help of clever and scientific sound indicators belongs to the tool kit of almost all projects. But let us be frank, how often are these tools really used, considering the fact that the development of relevant information systems take sometimes as long as the whole project? In addition, there is the danger of mis-interpreting the often quite mechanically generated data.

One way out of this trap is using a cross-sectional method, e.g. a quick appraisal system as introduced by Kielmann et al in 1991. Such methods rely on standardised quantitative and

qualitative questions relevant for the circumstances to be assessed. In this way also conditions can be captured, which cannot be described statistically, but have to be recorded in comparable and cost-effective fashion.

4. The PAD Protocols

Pinching good ideas is more cost- and time-effective than re-inventing the wheel. Thus, protocols from different sources were compiled and complemented by standardised record and evaluation forms, e.g. for appraising physical assets (buildings, utilities, equipment).

The first part of the PAD appraisal system covers the relevant general health and health management structures at central level:

- health policy, health priorities
- the number and kind of health facilities
- their utilisation
- their administration
- manpower development
- donor involvement.

The second part is more specific and looks into the regional and district health management and support systems using Module 2 of Kielmann et al[1]. Major themes are:

- physical and institutional infrastructure and resources
- human resources and training
- support systems
- management systems
- constraints and opportunities.

The third part deals with the maintenance (management) structure at central level:

- central maintenance department
- training institutes
- interviews with trainees
- private service providers, agents.

The fourth parts focuses on the maintenance services at district level using the relevant WHO-guidelines[2]:

- staff
- workshop facilities
- budget
- spare parts
- procedures and administration.

Last not least the state of the physical infrastructures and assets is described:

- buildings, sections, rooms
- utilities, plants

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[1] A.A.Kielmann, K.Janovsky, H.Annett: "Assessing District Health Needs, Services and Systems", AMREF-GTZ-MacMillan, London 1991

[2] A.Mallouppas, D.Porter: "Guideleines for Country Situation Analysis on Management, Maintenance and Repair of Health Care Equipment", WHO/SHS/NHP/88.3, Geneva 1988

- equipment
- hygiene, waste disposal.

The principle underlying most record forms consists in using a simple valuation with ratings "good", "fair" and "poor". These ratings are defined in two ways. First of all the general meaning:

'poor' physical facilities do not allow the operations required by sound health management. Health services are seriously impaired; the building conditions endanger patients and users.
'fair' technical problems limit the range of health services. The health facility cannot operate as expected, but some essential services can be provided.
'good' the building conditions of the health facility allow all services to be rendered as planned.

Secondly, each form that records a specific part or feature of the physical assets (e.g. "Hygiene") is accompanied by an evaluation key, which defines in detail each criterion.

5. Potentials and Shortcomings

The modules presented are designed to be used together as well as on their own, depending on the survey to be conducted. It can serve as a tool for feasibility studies, progress reviews, routine monitoring and evaluation, ex-post evaluations, training purposes and for finding new and easy-to-use performance and impact indicators. PAD can be used by a wide spectrum of health professionals, not only by specialised hospital technicians or engineers.

In particular the data recorded on physical assets can be analysed and interpreted in any appropriate direction, e.g.:

- analysis of service characteristics of types, models, brands and groups of equipment and plants
- analysis of single health facilities and facilities per district, region etc.
- analysis of single rooms, sections and buildings
- analysis of different technological categories, such as utilities, medical equipment, constructions, energy supply etc..

Example:

↓ ITEM RATING →	good	fair	poor
X-Ray	1	5	2

The interpretation of this simple data analysis is that out of 8 X-rays in a certain region, only one is able to perform all tasks required at the level of care in question. Five machines are able to provide limited services, or it could be that full services can be performed, but under unsatisfactory safety conditions (mode = typical for the situation given). Two machines are out of order or are dangerous to use. It must be kept in mind that the data compiled in most cases cannot be analysed statistically, because of the low sample sizes. Using a term such as "mode" only indicates a formal procedure, which needs further interpretation before stating any trend.

The limitations of the PAD-method are connected with its punctual nature. Though the difference between an initial situation and a later one (min. 6 months) can be assessed with satisfactory precision and reproducibility, the change process itself can hardly be judged.

This applies especially to the crucial factor of analysing the cost-effectiveness of maintenance services. Without reliable and specific records about the spendings on maintenance and repair (cost centre accounting!) in relation to the operationality and safety of the physical assets maintained, sound economic evaluations are not possible.

6. To Date Experience and Outlook

We have used the system with good results in Malawi. Further on, a number of district health projects have shown variable degrees of interest in using the method for developing maintenance systems within their project areas.

I hope that I will get some feedback in the near future, because I am sure that there is a need to further develop PAD. For this I need even more opportunities for testing. At the same time those health projects, active in providing and managing health infrastructure, could take the opportunity to initiate their own maintenance components, by using PAD.

In any case I welcome any suggestions how to improve the system and to make it more attractive to you.

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