PHC FACILITY INFRASTRUCTURE: A SITUATION ANALYSIS OF DATA AVAILABLE

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Planning for public health cannot take place without a foundation of reliable and valid data. Although the District Health Information System provides the Department of Health with data relating to the provision of health services in the public sector, and various infectious disease units provide data relating to levels of disease, there is no vehicle for the collection, storage and utilization of data relating to clinic infrastructure for the country. Without such data, planning for the provision of primary care services is unlikely to be appropriate or effective.

"Infrastructure" can be defined as "the basic, underlying framework or features of a system or organization" (Modern Language Association 2007). The physical infrastructure of public health facilities refers to the state of the buildings, the water, electricity and communications technology available, the quality of access roads, and the availability of equipment (both medical and non-medical) in working condition. Delivering health care above a certain level of complexity is difficult in the absence of good infrastructure. Shelter for patients and staff, drinkable water and a source of electricity for, among other things, refrigeration for vaccinations, are fundamental for the safe provision of health care. A working communications mechanism is necessary for the functioning of a referral system, as well as to enable the provision of support services (such as laboratory services) to the facility. A traversable access road is necessary to enable patients to attend the facility in the first place.

Poor infrastructure has been cited in a number of studies, conducted primarily in middle and low income countries, as undermining health service delivery. Specialised projects backed by international donors to improve reproductive health (Belay et al 2007) and HIV/AIDS programmes (Mandal et al 2006) have not achieved their targets because of the poor infrastructure in which services are delivered. Poor infrastructure has been shown to significantly affect a patient’s perception of quality of care (Rao et al 2006) and in South Africa, has a significant effect on health professionals’ satisfaction with their working conditions (Kotzée & Couper 2007, King & McInerney 2006).

The state of the physical infrastructure of health facilities in many areas of South Africa is poor because of the unequal development and maintenance of health facilities during the apartheid era. Not only is the condition of the infrastructure poor, it is also inadequate for the needs of clinic catchment populations. Both of these problems need to be addressed by the current and future governments, for which there are two related tasks. One is to ensure that infrastructure is of good quality, and the other is to plan infrastructure development to better meet the needs of the populations served. Good data is essential for both of these tasks.
The collection of infrastructure data, especially that relating to the physical integrity of the buildings, may require specialist skills. It is necessary to update information on building integrity every few years because buildings deteriorate over time. Similarly, the safety of electricity and water supplies should be checked on a regular basis. It is important that districts and provinces have rolling agendas for the updating of such information, and mechanisms for the reporting of problems in the interim.

2. AIM

The aim of this study was to assess the information on primary health care infrastructure available at provincial level.

3. OBJECTIVES

- To assess the availability of information on aspects of primary care infrastructure at provincial level
- To assess the timeliness of this data
- To assess the completeness of the data (in terms of coverage of all aspects of physical infrastructure)
- To assess the utility of the data in calculating the costs of clinic upgrades or maintenance

4. METHODS

This was a descriptive cross sectional study. All provinces were informed of the study by the National Department of Health: Research Directorate, and requested to provide Health Systems Trust (HST) with any information they had on primary health care infrastructure (clinics and community health centres). Primary data (as opposed to reports) were requested. Those provinces that did not respond to the request were approached further by HST and where necessary were visited to view the data available.

A checklist of required data elements was compiled in consultation with the National Department of Health: Strategic Planning and Primary Health Care Directorates. This list contained all the data necessary to rank facilities in terms of maintenance and upgrading needs and to cost this work. Available data was compared to this checklist (see Table 1).
5. RESULTS

Only two provinces (Western Cape and Limpopo) had data that approximated the list of elements required. Other provinces, such as KwaZulu-Natal, had substantial data but much of it was out of date. The others had very little of the required data.

TABLE 1: AVAILABLE DATA PER PROVINCE

Key:

- √ = information available for all clinics and up to date (collected after 2003)
- S = information available for SAMPLE of clinics only
- D = information available for certain DISTRICTS only
- O = information outdated (collected before 2003)

DHIS = District Health Information System
DHER = District Heath Expenditure Review
In all cases, gaps in cells indicate unavailability of information.

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>EC</th>
<th>FS</th>
<th>GTG</th>
<th>KZN</th>
<th>LMP</th>
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6
## PHC Facility Infrastructure: Situation Analysis

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<th>Province</th>
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<td><strong>SCORE OF FACILITY INFRASTRUCTURE</strong></td>
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</table>

- **PHC Facility Infrastructure Situation Analysis**
- **PROVINCE**: EC, FS, GTG, KZN, LMP, MPL, NC, NW, WC
- **STATE OF MAINTENANCE**
  - Year in which facility was built / age of buildings: √ D
  - Year in which facility was last upgraded: √
  - Year in which facility was last painted: √
  - What is the state of the maintenance of the facility (general): S S √ S
  - State of the walls: S S √ S
  - State of the windows: S S √ S
  - State of the floors: S S √ S
- **PHOTOGRAPHS AVAILABLE**: S
- **SCORE OF FACILITY INFRASTRUCTURE**
  - S (poor, good, excellent)
  - S (from one to five, no decimals)
  - √ (from one to five, no decimals)
  - S
- **ESTIMATED COST OF MAINTENANCE/UPGRADING**: S
- **WATER SUPPLY**
  - Main source of water: √ D
  - Reliability of water source: S
- **ELECTRICITY**
  - Main source of power: √ S √ D
  - Reliability of power source: S
### PHC Facility Infrastructure: Situation Analysis

<table>
<thead>
<tr>
<th>Province</th>
<th>EC</th>
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</table>

#### Sanitation

- **Type of sanitation**: √ √ √ D
- **Number of toilets for staff**
- **Number of toilets for patients**
- **Adequacy of sanitation for staff and patients**
- **Functionality of toilets**: S √

#### Communications

- **Type of communications available**: O √ √
- **Reliability of communications**: O
- **Tele- phone yes/no (D)**

#### Access to Facility (Quality of Road)

- √ S √

#### Service Indicators

- **Staffing of facility**: √ √ D S
- **Catchment population of facility**: DHIS DHIS DHIS DHIS DHIS DHIS DHIS DHIS DHIS
- **Utilisation (total number of patients seen in a year/month/week)**: DHIS DHIS DHIS DHIS DHIS DHIS DHIS DHIS DHIS
- **Availability of health care services (average number of hours open per day/days open per week)**: √ √ D
- **Total expenditure of facility for previous financial year**: DHER DHER DHER DHER DHER DHER DHER DHER DHER

#### Status of Medical Equipment

- √

#### Status of Non-Medical Equipment

- S √
6. DISCUSSION

Several issues relating to PHC infrastructure information were raised by this research.

These include:
- What information is collected
- How it is collected
- Where it is collected (which clinics/districts)
- How often it is collected
- Who collects it
- The comparability of data across provinces
- How the information is used.

What information is collected

The main determinant of what PHC infrastructure information is collected by provinces should be the use to which that information is put. Essentially, the information should inform two planning streams: first, the ongoing maintenance of physical infrastructure to ensure that the environment in which primary care is delivered is safe, and second, the longer term matching of infrastructure to the needs of the catchment population. The epidemic of HIV/AIDS, for example, has resulted in new infrastructure needs not envisaged before, such as private consulting rooms for voluntary counselling and testing, and space for these additional staff. In addition, the information supplied should be sufficient to enable the costs of the work to be calculated, so that provinces can develop informed budgets.

A national minimum data set for infrastructure would be useful in this regard. At present, there is wide variation in the amount of data collected by provinces, as illustrated in Table 1. For example, in Limpopo plans of every PHC facility are available along with detailed information on the state of the buildings and an estimation of the costs involved in restoring or maintaining the buildings in an optimum condition. In the Free State, on the other hand, only information on the water and electricity supply and communications mechanisms is available. Although provinces should, in accordance with the philosophy of federalism enshrined in the Constitution, be free to develop their own datasets on the basis of their unique needs, it is likely that a minimum required dataset would be useful for guidance.
The physical condition of facilities deteriorates over time and data relating to facility infrastructure should be collected on a regular basis. For this reason, the collection of data should be affordable for the province, and should not involve extraordinary measures that will be difficult to repeat. Provinces should be able to collect and use the information themselves in order to reduce reliance on external consultants who are not only expensive but who also undermine a province’s ability to function independently. The facility data available in Limpopo is of high quality. It was, however, collected by outside companies at a high cost. Whether this exercise could be repeated as often as the data is required is questionable, and hence, although the data is currently very useful, obtaining similar data at a later stage may be difficult for the province.

Where information is collected

Some provinces do have data available for all PHC facilities in all districts. However, even in those provinces where the dataset is almost complete, areas managed by local government are omitted. This is an important area to address. The information systems of physical infrastructures managed by the two levels of government should be comparable so as to ensure coherent and comprehensive planning even during the provincialisation process.

In some provinces, such as the Northern Cape, data is only readily available for some districts. Lack of uniformity in the collection of data at any level may exacerbate the inequities inherited from the past, as it may result in inequitable distribution of funds for the maintenance and upgrading that is informed from this data. If not at a national level, then at least at a provincial level, districts should follow the same data collection process and collect the same minimum data elements across the board, to ensure that all PHC facilities receive the same attention.

How often information is collected

Information must be collected often enough to ensure clinics are well maintained. If collected infrequently, infrastructural problems will not be detected timeously. KZN, for example, has an excellent plan to collect data on all clinics on a rotational basis. In practice, however, the information on some clinics has become outdated and hence less useful. The same applies to provinces which started massive projects to collect PHC infrastructural data. At the end of several years of data collection (from start to finish of the project), the data collected initially was outdated.
Who collects the information

Ideally a province should be able to collect and use all the information it needs. Reliance on external consultants is not only costly but time-consuming as the terms of projects and tenders have to be developed, and potential bidders adjudicated. Contracting out also does little to build capacity within the public sector. As far as possible, therefore, the work should be devised and executed by the provinces themselves.

The skills for much of the work involved in infrastructure assessments do not lie within the health sector. Other departments within the province, such as Department of Public Works, should be able to assist, such as was done in KZN. Such collaboration will build relationships between government departments and strengthen the provincial structure as a whole.

The comparability of data across provinces

In order to promote equity across provinces, as well as to facilitate planning at a national level, data from different provinces should be comparable. This is not the case in practice, with different scoring systems used to cost the work of maintenance and upgrading, and different terms to describe the state of infrastructure components, such as fair and satisfactory, poor and bad etc. A standard minimum dataset used across the country should be developed, with clear definitions for all terms used. This will enable prioritization of those clinics most in need of work, both from a provincial and national level.

How the information is used

A mantra for the collection of any information is that it is a means to an end and not an end in itself. If the information is not used to inform planning and budgeting, it should not be collected at all. The collection of information is a time consuming and expensive task. For its own sake, it’s not worth doing, but when properly used, it is the foundation of a well functioning health system.
7. REFERENCES


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