The effectiveness of patient referral in Pakistan

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In Pakistan, despite an elaborate network of over 5000 basic health units and rural health centres, supported by higher-level facilities, primary health care activities have not brought about expected improvements in health status, especially of rural population groups. A poorly functioning referral system may be partly to blame. System analysis of patient referral was conducted in a district of Punjab province (Attock) for the purpose of identifying major shortcomings, if any, in this domain.

Respondents from 225 households were interviewed. Of the households experiencing serious illnesses less than half were taken to a nearest first-level care facility (FLCF). Major reasons included dissatisfaction with quality of care offered, non-availability of physician, and patients being too ill to be taken to the FLCF. The FLCF utilization rate was less than 0.6 patient visits/person/year. The mean number of patients referred per FLCF during the previous 3 months was 6.5 ± 5.0. Only 15% of patients were referred on the prescribed referral form. None of the higher-level facilities provided feedback to FLCFs.

Records of higher-level facilities revealed lack of information on either patient referrals or feedback. There were no surgical or emergency obstetric services available at any of the first-level referral facilities. Seventy-five percent of the patients attending the first-level referral facilities and 44% of the patients attending higher-level facilities had a problem of a primary nature that could well have been managed at the FLCF.

As a result of the study findings, eight principal criteria were identified that need to be satisfied before a referral system may be considered functional.

Introduction

In an effort to improve health care delivery for mainly rural Pakistan, in 1993/94 the Ministry of Health engaged in a major reorientation programme of its health care personnel. Both physician and paramedical training and, ultimately, deployment were to be strengthened and reorganized. Among others, one of the major components of this effort was to enable an existing but largely non-functional Health Services Academy to provide both short term and degree training of mainly physicians in public health and community medicine. This paper arose out of this programme.

In order to develop a training programme appropriate to local needs and realities, it was found essential to systematically examine the primary health care sector with respect to its functional integrity, of which the referral system is an integral and essential component. Its evaluation implied prior definition of precise and valid assessment criteria. The method chosen followed a system analysis approach that had been applied in the assessment of primary health care in other developing countries and of which both method and results had been published elsewhere.\(^1\) Using this approach, all components essential to the functioning of the (referral) system are identified, followed by the selection of relevant, valid and objective assessment indicators which are then measured in the course of appropriate surveys. A search of the literature revealed a dearth of information on both satisfactory definition of, or practical means and methods for evaluating, the referral system except for some very recent publications on the subject.\(^2,3\)

A study in Saudi Arabia\(^4\) defined referral as ‘a process in which the treating physician at a lower level of the health service . . . seeks the assistance of a better equipped and/or specially trained person with better resources at a higher level, to guide him in managing or to take over management . . .’. While this definition adequately describes common reasons for, and content of, referrals, it is inadequate to measure the quality or functionality of a referral system. In a French study, between 2.4 and 2.7% of patients seen by physicians are sent on for further medical consultation.\(^5\) Interestingly the lower percentage refers to that of the general practitioner and the higher to that of the specialist. While this information provides some parameter of the level of referring one might expect, its setting – France – is not comparable to that of the developing world, not to speak of Pakistan.

There are a number of WHO publications on the issue, but none quite responded to our needs. An earlier (1981) monograph on ways and means of implementing Health for All by the Year 2000 stresses both the availability and appropriateness of the referral process for the improvement of care. It
says little about what precisely are the essential components of, and make a referral system appropriate for, assuring quality of care. A later WHO (1987) monograph describes the various functions of a hospital associated with referral. Examples of inward and outward flow of patients, instructions, demands and requests and the reasons for, and problems of, patient referral are given. This document, however, similarly lacks criteria for system assessment. In yet another WHO document, a case is made for having urban centres of reference established in support of local health facilities as well as extending availability of quality care ‘round-the-clock’. The document offers little in terms of our specific needs.

Given our task at hand, the relative paucity of relevant literature, and for the purpose of carrying out the investigation, we arbitrarily re-defined criteria by which to assess the referral system both in terms of its function and operation as:

1) Ready availability of the potential for, and practice of sending patients to, a higher-level care facility.
2) Provision of feedback and advice on follow-up to the lower level facility once the referral had successfully been taken care of.
3) Presence of the management system and material infrastructure required to effect referral.
4) Utilization of and satisfaction with the referral system by the community concerned.

The underlying assumption was that the higher-level facilities are better equipped in terms of diagnostic and therapeutic facilities than the ones from which the referral emanates. Feedback was defined as the advice given to the staff of the referring health facility once the referral had been successfully taken care of. Follow-up was perceived as advice given to the patient by the health facility staff when the nature of the health problem required revisits to the same health facility. For the purpose of our study, a serious illness was defined as one that continued for two or more weeks or any acute condition requiring immediate medical attention.

In an effort to provide readily available care to the majority of its citizens, the Government of Pakistan had constructed innumerable primary health facilities throughout the country in the late 1970s and mid 1980s. As a result, Pakistan boasts an extensive infrastructure in the public health sector for the delivery of health care that encompasses a system of over 5000 Basic Health Units (BHUs) and over 650 Rural Health Centres (RHCs) in its rural areas. Many of these facilities are currently deserted or have been put to other uses. Many more are in urgent need of repair, are under-equipped and inappropriately and/or under-staffed. Yet they form the basis of what there is in terms of public rural primary care. These primary care facilities are supported by almost 700 public sector hospitals, the majority of which are financed by the provincial health departments. Despite such an elaborate network of BHUs and RHCs and the existing higher-level facilities in the country (Figure 1), primary health care activities have not brought about expected improvements in health status, especially of rural population groups. Reasons for this failure are diverse and multi-faceted. One among them is absence of a properly functioning referral system.

With the above four criteria in mind, an analysis of the referral system was conducted in Attock district of Punjab province in mid 1995 for the purpose of identifying its strengths and weaknesses. The district, 40 km from Pakistan’s capital Islamabad, is well representative of rural Punjab and not too dissimilar from other rural districts in the country with respect to availability and quality of health services. In addition to the objectives mentioned earlier, existence and extent of a ‘bypass phenomenon’, and the likely reasons for it, were similarly looked into.

**Methodology**

Attock district has a population of approximately 1.2 million people, with a rural to urban distribution of 80:20. It has four tehsils (sub-districts), namely Attock, Fateh Jang, Pindi Gheb and Jand. There are 62 public sector health care facilities in the district, a breakdown of which is given in Table 1. BHUs and RHCs were defined as first-level care facilities (FLCF), Tehsil Headquarters Hospitals (THQs) were the first-level referral facilities (FLRF) and District Headquarters Hospital (DHQ) and teaching hospitals were the higher-level facilities (HLF). Of three tehsils in the district, 10 FLCFs, 8 BHUs and 2 RHCs were randomly selected, their staff interviewed and records observed. Twenty-five households from one community within the catchment area of each FLCF were
selected using the same process. In addition, patients attending the outpatient departments of three THQs, the DHQ and the nearest teaching hospitals in Rawalpindi district were selected through systematic sampling, whereby every nth patient coming to the outpatient department was included. The first interviewee was chosen through a random number generator from among the first 10 patients. Outpatient records were reviewed with particular emphasis on assessing the level and nature of clinical and support services offered at each level. As there is no tertiary care hospital in Attock district, two teaching hospitals of Rawalpindi district were used in its place, on the basis that the staff of FLCFs referred patients to these institutions for tertiary care.

An assessment tool consisting of both checklist and open-ended questionnaire was prepared with the four criteria in mind. This was field-tested and then used in the district for examining the referral system at each level. Interviews were held on a one-to-one basis with outpatients and through discussion with all adult members of the household present at the time of the interview. Interviews with the former were held in a room separate from the outpatient department. Data generated from the interviews were entered into a computer and analyzed using EPI INFO, while information acquired through health facility records and interviews of health facility staff was analyzed by hand.

### Results

#### Communities’ perception of the referral system

Two-hundred and twenty-five households were interviewed from 10 villages, each village falling within the catchment area of a FLCF. Fifty-six percent of households had experienced a serious illness during the previous 6 months. Less than half of the concerned individuals (48%) were taken first to the nearest FLCF. Twenty-four percent went to a private practitioner and 28% were taken directly to a tertiary hospital. Of the patients first taken to a FLCF, 44% were referred subsequently to a THQ or DHQ, the rest were sent to a teaching hospital. In no case did the facility responsible for the referral provide transport.

When asking respondents from the households that ‘bypassed’ the FLCF for the reasons why they went directly to higher-level care centres or private practitioners, the majority of them (60%) expressed dissatisfaction with the quality of services offered: “I am not satisfied with that (the FLCF) clinic, a few pills, that’s all one gets. What do they know about my illnesses, nothing”. Twenty percent claimed that the physician was (usually) not available at the FLCF: “Every time we go there, we only find the nurse or cleaner. What’s the use then of going?” Eleven percent thought the patients were too ill to be taken to the FLCF: “The doctor will just send them on anyway, why then lose time”. Nine percent gave a variety of other responses. Even for minor illnesses, 14% of the respondents still preferred to directly visit a tertiary care hospital.

#### Referral services at FLCFs

Of the 10 FLCFs visited in the district, eight were BHUs and two RHCs. The facility utilization rate based on the allocated catchment area population was less than 0.6 patient visits per person per year. The mean number of patients referred per FLCF during the previous 3 months was 6.5 ± 5.0. In terms of referral rate this approximates to 0.2 referrals per 100 consultations. Further inquiry into the mode of referral revealed that only 15% of the patients were referred on the prescribed referral form, others were sent on either verbally (55%) or given an informal note (30%). Referral forms developed under the earlier, nation-wide Health Management Information System (HMIS) were available at the time of the survey in only one-third of the FLCFs. Less than half of the facilities (44%) maintained a record of referrals on outpatient department registers.

None of the higher-level facilities ever provided feedback to FLCFs. In relation to regular follow-up of patients, two-thirds of the facilities admitted that they never followed-up such patients, while one-third did so occasionally. Only two of the FLCFs, both of them RHCs, claimed to ever receive referrals from traditional birth attendants.

In addition to the referral system, we also examined the availability of health care services in the FLCFs, as well as the support services required to strengthen the referral system. In none of the facilities were minor surgical and delivery care offered, and none provided health education as part of their ongoing services. The quality of those services that were available was found to be poor, or at best questionable. In terms of support structures, transport, telephone or VHF radio communication services were not available at any of these health posts. Where they existed, they were not functional.

#### Referral services at higher-level facilities (including FLRF)

Records of higher-level facilities, i.e. THQ, DHQ and teaching hospitals, were examined for information on referrals, and on availability and level of services required for effective functioning of a referral system. There was no information available on either referrals per se or on feedback provided to patients at any of these levels. Information was only

### Table 1. Health service infrastructure of Attock district, Punjab Province

<table>
<thead>
<tr>
<th>Facility level</th>
<th>Tehsil</th>
<th>District head-quarters</th>
<th>Rural health centres</th>
<th>Basic health units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attock</td>
<td>Fateh Jang</td>
<td>Pindi Ghep</td>
<td>Jand</td>
</tr>
<tr>
<td>Basic health units (BHU)</td>
<td>24</td>
<td>11</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Rural health centres (RHC)</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Tehsil head-quarters (THQ)</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>District head-quarters (DHQ)</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Includes sub-Tehsil Hazro.*

Source: Office of the District Health Officer, Attock, Attock City.
available on age and gender, address and diagnosis. The quality of the latter in terms of accuracy was questionable.

The nature of services available at hospitals was similarly looked into. There were no surgical or emergency obstetric services available at any of the FLRFs, i.e. the five THQ hospitals in the district. Such services were available only at the one DHQ for the entire district of Attock. Only some FLRFs featured specialist services or surgical facilities. However, all THQs as well as the DHQ (secondary care) and the teaching hospital (tertiary care) had functional ambulance and telephone services.

Interview of patients at hospital outpatient departments

A total of 277 outpatients attending the different hospitals were interviewed (Table 2). Three-quarters of the outpatients attending the THQ, and 44% of those attending DHQ and teaching hospitals suffered from a health problem that could well have been managed at the FLCF. The proportion of patients referred to the hospitals was 6, 21 and 35%, respectively, for THQs, DHQ and teaching hospitals. Even at the level of the teaching hospital, a referral note was given only to 10% of patients. Only 6% could produce it on demand. As expected, travel time and travel cost for patients were higher for those attending the outpatient department of the teaching hospital compared with that of the THQ and DHQ hospitals.

Discussion

The current study attempts to point out deficiencies in the referral system of the public sector. However, before going into a discussion of the findings, we need to point out some major limitations of this investigation. In limiting ourselves to the public health sector we have, in essence, only presented one side of the coin. In Pakistan, private medical care is omnipresent in both urban and semi-urban areas, and extends also to rural areas. It enjoys a significantly higher reputation and utilization than the public services, not least because it is perceived as being better. Since, however, it is the primary role of the Health Services Academy to strengthen the public sector, failure to include the private sector in no way jeopardizes either validity or usefulness of the results. More serious was our omission to examine the referral system at one level lower, namely the one linking the traditional birth attendant, the lady health visitor and the BHU or RHC. This resulted partly from an unfortunate, conscious decision based on the (wrong) assumption that ‘if referral doesn’t work at the doctor’s level, it is unlikely to work below’. An additional constraint to this investigation is inherent in our somewhat limited and arbitrary definition of the referral system. In retrospect, and as we shall point out subsequently, our results suggest that we should and could have included a number of other important criteria for its definition and assessment.

Keeping the above limitations in mind, one may still, and confidently, state that referral in the public health care delivery system of Pakistan, as represented in Attock district, does not work. This observation compares well with those from the previously cited study, where the referral system was non-existent in three of eight country situations and only marginally so in the remaining five. Major deficiencies relate to its poor management by health care providers, and its effective and intentional bypassing by consumers. Poor quality of clinical and support services provided at FLCF as well as at FLRF may well be the single most important underlying reason for the latter; insufficient preparation and training of facility managers and their teams, for the former. These suppositions are supported also by the exceedingly low service utilization rates as well as the deplorable state of relevant records and doubtful diagnoses generally observed throughout all levels of care.

One example of the lack of managerial competence observed was the non-availability of emergency obstetric services in all facilities of the district except the DHQ hospital. For the size of population of Attock, the expected number of pregnancies is nearly 40,000 annually. Even if only 2.5% of these require emergency obstetric care, the one hospital currently offering such services would be severely overtaxed if all were referred to it. Yet complications in 2.5% of pregnancies is a minimum one might expect under ‘normal’ circumstances, i.e. in settings with adequate antenatal care. It stands to reason that in Attock, where antenatal care ranges from poor to non-existent, and where long distances and lack of transport facilities may substantially aggravate the situation, a considerably

Table 2. Results of outpatient interviews in referral hospitals (n = 277)

<table>
<thead>
<tr>
<th>Interview parameter</th>
<th>Level of hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>THQ</td>
</tr>
<tr>
<td>No. of patients interviewed</td>
<td>99</td>
</tr>
<tr>
<td>Patients with primary problems (%)</td>
<td>77</td>
</tr>
<tr>
<td>First visit to facility (%)</td>
<td>43</td>
</tr>
<tr>
<td>Previously seen by physician (%)</td>
<td>36</td>
</tr>
<tr>
<td>Referred by practitioner (%)</td>
<td>6</td>
</tr>
<tr>
<td>Referral note given (%)</td>
<td>3</td>
</tr>
<tr>
<td>Referral not available (%)</td>
<td>0</td>
</tr>
<tr>
<td>Average travel cost (Rs*)</td>
<td>10.50 ± 30.60</td>
</tr>
<tr>
<td>Average travel time (min)</td>
<td>40 ± 37</td>
</tr>
</tbody>
</table>

* At time of study, 1 Pakistani Rupee (Rs) = approximately US$0.025.
higher rate applies. These conditions invariably contribute to the high maternal mortality rate prevailing in this country.

The problems and difficulties of implementing a functional referral system are well known. Some of these relate to lack of resources and infrastructure essential for providing a minimally acceptable quality of care, while others are associated with poor management. Recently, other investigators have confirmed the problem and identified some of its causes, such as inappropriateness of referrals, lack of structure of referral letters, delay in feedback from hospitals, inefficient administration at hospitals, and inadequate resources and facilities in health centres.\(^4\) In this context the urgent need for re-training of all levels of health care providers, and re-defining, formalizing and institutionalizing the referral system, cannot be overemphasized. Such a revised system would need to incorporate the recognition of referral as a two-way process of communication. Communication should be initiated by the referring physician at the primary care level and completed with appropriate feedback by the referee, usually a consultant physician at a hospital, along uniform guidelines, with proper documentation, availability of transport, and preferential treatment of the referred at the FLRF and HRF.

The study further highlights the gross under-utilization of public FLCFs in the district. A health facility utilization rate of less than 0.6 patient visits per person per year is far below the level at which one might expect health services to have any impact. This level of under-utilization of rural health facilities is not peculiar to Attock district but pervades the entire rural health infrastructure in the country.\(^11\) Individuals with ailments that could easily be handled at primary care centres tend to refer themselves to tertiary care institutions and thus over-burden the outpatient departments of major hospitals, further stretching their already meagre resources. Our findings also corroborate those made in the earlier cited investigation where the health care utilization rate\(^16\) ranged from less than one visit per 10 persons per year in rural Egypt to 1.4 visits per person per year in a PHC project in rural Tanzania.\(^1\) In the absence of clear reference guidelines as to the significance of such figures, and the absence of parallel utilization rates for private facilities, it is difficult if not impossible to interpret such figures clearly. In the Narangwal comprehensive care villages of Indian Punjab, the average number of illness-related visits to the health facilities amounted to four per year for women in the reproductive age range and seven per year for children of less than 3 years of age.\(^12\) Admittedly the Narangwal project was a research effort where health care was provided mainly through lady health visitors and auxiliary nurses with ready access to the next higher level – doctor or rural hospital. Health parameters of both children and women were significantly better than in control areas where utilization rates were no higher than in our investigation. Even if the utilization rates in that study are adjusted for the reduced requirement of care of other age and gender groups, an average utilization rate for the entire population of 2.7 visits per person per year results.\(^14\)

The mean number of patients referred per FLCF during the previous 3 months was 6.5 ± 5.0. In terms of referral rate this amounts to 0.2 referrals per 100 consultations, i.e. 0.2%.

Studies from the United Kingdom\(^13,14\) and France\(^5\) have demonstrated referral rates varying between 1 and 28% with an average of 8%, while in other countries where the referral system has only been recently implemented, a remarkably narrower range of between 3 and 4% has been shown.\(^15\) Other than our figure clearly not being ‘acceptable’, it is difficult to state a universally acceptable figure for the ‘right referral rate’. The emphasis clearly needs to be placed more on the appropriateness of each referral rather than frequency. Since ours was a rapid assessment and not a time-motion study, we could not follow up individual patients to assess either the appropriateness of referral or the quality of feed-back, where such occurred. A rate of 0.2% as seen in our study clearly reflects malfunctioning or virtual non-existence of the system rather than absence of need. Attock district lies along the well-travelled ‘Grand Trunk Road’, formerly linking Kabul to Dhaka, and is economically no worse off than the rest of the country. There is, hence, strong reason to believe that the quality of referral services in the more remote districts of Punjab and Pakistan may well be even less operational.

Implementation of a functional and well-managed referral system leads to alteration in the pattern of diseases presenting at hospitals and health centres. One would expect conditions of a complex nature to predominate in the former, and those of a more simple, primary nature, in the latter. Such phenomenon has indeed been demonstrated in countries where the referral system had been successfully implemented.\(^16\) It has also been well documented that the cost of seeing patients with the same ailments in hospital outpatient departments may be as much as four times higher than at the FLCF.\(^17\) However, these studies were carried out in industrial nations and their findings are of only limited relevance to the constraints and situations prevailing in the developing world.

The referral system itself is a support system that assists in making health services more effective, efficient and equitable to its users. The sine qua non for its effective functioning is the establishment of primary health care services of a minimally acceptable standard, such that the community is encouraged not to bypass its network. In addition, each lower level facility needs to be formally linked to the next higher facility and the concerned staff be made aware of and respect such linkages. Training programmes have to be developed for each and every level and implemented with all levels participating at joint sessions. Standard procedures have to be set up and enforced to ensure smooth communication between the user, the provider and the manager of health services. And equally important, routine periodic checking of its implementation is essential. Needless to say, such a mechanism requires piloting and close monitoring before its full-scale implementation. The health management information system is a useful tool to monitor the functioning of the referral system.

Lastly, and in consequence of our findings, we decided on eight principal criteria that must prevail in the assessment for the referral system to be labelled truly functional:

1. Every level of the health service delivery has access to a higher level of care for patients whose condition can
either not be satisfactorily diagnosed or managed at the referring level.

(2) The next (higher) referral level is better able to handle given health problems than the referring facility.

(3) Administrative rules and regulations governing referral have been worked out for all members of the health service facility, and are available for scrutiny at both the referring and referral facility.

(4) Every centre that carries out referrals determines the material infrastructure minimally required to effect referral.

(5) Health personnel carrying out referrals have been trained to recognize problems that cannot be satisfactorily handled at their level of care.

(6) The flow of information concerning the referral is bidirectional, i.e. from the referring facility to the referral centre and from the latter back to the former.

(7) Referral either up or back down the levels of health care can readily be demonstrated to occur on a regular basis through random examination of treatment records.

(8) The community is aware of the referral system and readily follows its rules.

Endnotes

1 Patients directly consulting higher-level care facilities.

2 By assigning sequential numbers to all facilities within a given category and then selecting those for assessment through use of a table of random numbers.

3 Of governmental or project institutions, but excluding the private sector.

4 Assuming the following annual, illness-related contact frequencies: 3 to less than 5 years: 4/year; 5 to less than 15: 1.5/year; men 15 to 45: 1/year; men and women older than 45: 1.5/year.

References


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