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Furber, A.S. (2002) Referral to hospital in Nepal: 4 years' experience in one rural district. *Tropical Doctor*, 32 (2). pp. 75-78. ISSN: 0049-4755

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Furber, A.S. (2002) *Referral to hospital in Nepal: 4 years' experience in one rural district*. *Tropical Doctor*, 32 (2). pp. 75-78

<http://eprints.whiterose.ac.uk/archive/00000554/>

Published at:

Furber AS. Referral to hospital in Nepal: 4 years' experience in one rural district. *Tropical Doctor* 2002;**32**:75-8.

Tropical Doctor Reference:TD 27/01

Author: Dr. Andrew S Furber MPH MRCGP

Current Post: HIV/AIDS Consultant

Address: Sakriya HIV/AIDS Unit
United Mission to Nepal
PO Box 126
Kathmandu
Nepal

Tel/Fax: (+977 1) 251570

Email: andrew@sakriya.umn.org.np

Current contact address: A.Furber@sheffield.ac.uk

Summary

Formal referral systems have been proposed as a strategy to improve access to secondary care, yet their implementation can be problematic. This paper describes data from referrals in one rural district in Nepal over a four year period. Whilst the characteristics of those patients attending hospital after referral were similar to those described in other developing countries, the rate (1.0 per 1,000 population per year) is much lower, especially when compared to estimated need. Geographical and other barriers to access to secondary care in rural Nepal are discussed.

Introduction

Little is known about referral patterns in Nepal, despite access to health care being a key health service problem¹ and referral being an integral part of the Primary Health Care (PHC) model.² The implementation of referral systems can be problematic, sometimes leading to overloading of hospitals with inappropriate referrals.³ Conversely poor compliance with the referral can lead to under-use of secondary care by those in greatest need.⁴

The objective of this paper is to describe four years' experience of referrals from primary health care facilities to a mission hospital in one rural area of western Nepal, Palpa district (1999 population 298,000). By comparing these patterns with other published data and estimated need, conclusions will be drawn about the implementation of referral systems in rural Nepal.

Nepal's health indicators are amongst the world's worst. For example, during the period 1990-96 Nepal's estimated maternal mortality ratio was 539 per 100,000 live births. The reasons for this high ratio include gender inequalities in Nepali society as well as inadequate health services.⁵ The poor quality of PHC facilities has been identified as a key disincentive to their utilisation.^{6,7} Delay in accessing secondary care played a major role in maternal deaths at a Kathmandu maternity hospital.⁸ Few districts have referral hospitals that provide emergency obstetric care (EOC).

Palpa district is something of an exception. The 131 bed United Mission Hospital, Tansen (UMHT) provides 24-hour EOC. Government PHC facilities are located throughout the district and are supported by the externally funded Community Health and Development Project (CHDP) which organised the referral system described in this paper. The district is situated in the hilly area of Nepal's western development region and has development indicators that are broadly similar to the national figures.⁵

Methods

The referral system was based on the use of a form and was intended to bring benefits to both the referring health worker (written feedback on the outcome of the referral) and the patient (waiving admission charges and same-day assessment). Referral forms were distributed to all government and non-profit PHC facilities in Palpa district by CHDP staff during support visits, biannual refresher training and on request.

The general referral form was designed for the referral of any type of patient. The referring health worker was expected to complete the patient details, presenting complaint, treatment given, reason for referral and provisional diagnosis. The hospital doctor was expected to reply with details of test results, final diagnosis, treatment and advice.

A specific antenatal referral form was introduced in 1996. The referring health worker was again expected to complete basic patient details including age and past obstetric history and then tick one of the referral criteria. These were initially based on a high risk approach, but in view of the poor predictive value of most obstetric risk factors⁹ the form was modified in 1998 to emphasise actual complications of pregnancy. The referral criteria were vaginal bleeding, fetal death, premature rupture of membranes, obstructed labour, complications of abortion, severe anaemia and raised blood pressure. The form could also be used in the case of previous caesarean section or perinatal death, abnormal lie or abdominal size for dates, post-maturity or more than five previous pregnancies. The hospital doctor was expected to record the outcome of the hospital visit and recommendations for future care.

Hospital staff sent completed referral forms by internal post to CHDP where the information was entered onto a computer database by the author, a medical doctor. A contemporaneous judgement was made on the appropriateness of the referral during data entry. Although the process was subjective, a referral was considered appropriate if there was diagnostic

uncertainty or the need for investigation or treatment beyond the level of the referring centre. For antenatal referrals the judgement was made on the basis of the reason for referral matching one of the high-risk categories on the form. The form was then returned to the referring health worker either by hand or by post. The referral hospital kept a separate record of the numbers of patients referred under the system.

Analysis of the data was performed using Epi Info v.6.04b¹⁰ using the exact binomial method to create confidence intervals (CI).

Results

During the four-year period 1995-99 the hospital recorded 1,230 referred cases, giving an overall rate of patients attending hospital after referral of 1.0 per 1,000 population (95% CI 0.9 to 1.2). The annual gender specific rates are significantly different at 1.3 per 1,000 for females (95% CI 1.1 to 1.4) and 0.8 per 1,000 for males (95% CI 0.7 to 1.0). Patients from Palpa attending hospital after referral represented 0.3% of the approximately 386,000 hospital outpatient visits by patients from all districts during this period. Information from referral forms was available in 804 (65%) cases (156 antenatal and 648 general referrals).

General cases

Referral forms were received from 43 (65%) of the 65 government primary care facilities in the district. Centres with most patients attending hospital after

referral tended to be those closest to the hospital. It should be noted that not all of these 65 primary care facilities were fully functional, with the tendency being for the lowest level facilities (Sub Health Posts) farthest away from the district centre to have the greatest problems with the availability of staff and supplies.

The median age of patients attending after referral was 22 years with 38% of cases being aged 14 years or less. Patients aged 30 years or less constituted 66% and female patients 56% of the total. The commonest presenting complaints were of fever, trauma, abdominal pain, gynaecological symptoms and cough. Overall there was agreement between the diagnoses of referring health worker and hospital staff in 57% of cases. A quarter of patients was admitted. Of the 494 patients treated as outpatients, 303 (61%) received medical treatment, 115 (23%) underwent a surgical procedure, 11 (2%) were referred elsewhere with the remainder being given advice only. The majority (86%) of referrals was judged to be appropriate.

Antenatal cases

Nepal's Crude Birth Rate of 37 per 1,000 population per year¹¹ translates to an estimated 11,000 births per year for Palpa district. The 156 antenatal patients attending hospital after referral from 1996-99 represents a rate of 4.7 per 1,000 births (95% CI 3.5 to 6.2). The median age of the 151 women referred through the antenatal system for whom information was available was 23 years.

The majority (80%) of antenatal women attending hospital after referral came from Town Clinic; a large maternal and child health clinic situated 30 minutes walk from the referral hospital. Female cadres of health worker, i.e. Auxiliary Nurse Midwives and Registered Nurses, completed the majority (84%) of the referral forms.

Post-maturity and high blood pressure were the commonest reasons for referral. Actual complications of pregnancy were much more common reasons for referral than risk factors (e.g. parity). Only one referral mentioned anaemia despite anaemia prevalence of 78% in women of reproductive age.⁵

Caesarean sections were performed in 17 out of the 156 cases giving a rate of 10.9 per 100 patients (95 % CI 6.5 to 16.9). There were 10 perinatal deaths amongst the 71 recorded deliveries representing a perinatal mortality rate of 141 per 1,000 total births (95% CI 70 to 244).

Most cases (80%) were judged to be appropriate whilst 31 cases (20%) were either inappropriate or there was insufficient evidence to make a judgement.

Discussion

Despite a relatively well managed system, the annual rate of patients attending hospital after referral of 1.0 per 1,000 population found in this study is extremely low. Rates of 3.7 to 8.7 referrals per 1,000 population per year have been described in rural Kenya,^{12,13} although the higher figure did not

account for referral compliance (i.e. the proportion of referred cases that actually attend hospital). However even with compliance rates as low as 33% as has been reported in Zaire,⁴ the rate of attendance after referral in Palpa is much lower than those published from these comparable situations. Formal referrals seem to be largely appropriate and represent only 0.3% of hospital outpatient activity, even lower than the 0.6-1.2% reported for rural Kenya.¹² Inappropriate patient load at hospital level is more likely to be due to bypassing the PHC system, and evidence suggests that effective PHC is likely to lead to more appropriate hospital utilisation.¹⁴ The age, sex and medical cause of referral all reflect Nepal's demography and disease burden and are very similar to those described in rural Kenya, despite very different geography.¹³

Although most government PHC facilities are using the referral system, only a minority has more than a few patients attending hospital after referral. Most of these patients are coming from nearby centres. This suggests that this referral system does not greatly improve access to secondary care for more remote, and probably more needy, communities.

Attendance after referral for antenatal women has also been shown to be extremely low in this study. Less than 0.5% of the district's pregnant women attended hospital after referral whilst it is estimated that 15% will require higher level EOC.¹⁵ Most referrals were made by the female cadres of health worker with responsibility for antenatal care. In an attempt to encourage use of the system by these workers a Nepali version of the referral form was

produced in 1998. Although this seemed to improve the quality of the completion of the forms it did not improve rates of attendance at hospital after referral. The translation of all referral forms into Nepali was resisted by some government healthcare workers and the Nepalese staff of CHDP, with the underlying motivation possibly being to exclude lesser trained people from referring patients, which in the author's view was unfortunate.

There are likely to be multiple reasons for the low number of patients attending hospital after referral. Geographical considerations will be important as only one all-weather road passes through the district, and even this is regularly closed by landslides during the monsoon (June to August). Few villages have well organised systems for transporting the sick to hospital. Economic concerns will also be important. Patients must not only consider direct medical costs but also indirect costs such as food and accommodation. Other health services issues will include the perceived quality government PHC facilities. Patients may prefer to use private medical halls, which are outside the referral system described in this paper. Attendance at formal medical facilities for antenatal care is known to be low. During 1997/98 in Nepal, only 26% of the women who were expected to be pregnant attended for antenatal care.¹⁶ Sociological issues may also play a part, in particular the role of women in Nepali society and traditional understanding of illness.

A limitation of this study is the missing information for a third of those attending hospital after referral. The loss of referral forms probably occurred within the hospital, as a valid form was required by the admission clerk to

register the patient as having been referred. The lack of data on referral compliance is a further major limitation. The newly introduced government Health Management Information System¹⁷ should lead to systematic recording of referrals from primary care facilities allowing compliance to be measured. It is very likely that some health workers will have verbally referred patients to hospital but for various reasons, such as the lack of ready availability of the form or time constraints, did not write out a referral form. It is also possible that some patients attended the hospital after referral but did not produce the referral form. In view of the benefits of formal referral to the patient this is unlikely to account for large numbers of patients.

Conclusions

It is likely that many patients by-pass primary care services because of their perceived poor quality and the open access nature of hospital services. Operational research on the style of referral letters, in particular the choice of language (English or Nepali), might be of value in maximising the use of referral systems by healthcare workers. Form-based referral systems alone do not contribute significantly to access to secondary care in Nepal. Access to hospital services may be more strongly influenced by economic, social and geographical factors and future studies should address these questions. These issues must be incorporated into future referral systems to ensure that access to hospital care becomes more equitably based on need rather than geographical proximity or ability to pay.

Acknowledgements

This paper is based on the author's dissertation for the degree of MPH at the University of Leeds for which Dr. Janet Cade provided excellent supervision. A number of colleagues at the International Division of the Nuffield Institute for Health and at United Mission to Nepal provided very helpful comments on early drafts of this paper.

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