

STUDYING THE REFERRAL SYSTEM IN ONE FAMILY PRACTICE CENTER IN SAUDI ARABIA

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It has been nearly a decade since the implementation of the referral system in Saudi Arabia in mid-1989. Several reports have demonstrated the effectiveness of the referral system in reducing the workload on the outpatient clinics of the hospitals, while increasing the workload of the general practice clinics of the primary health care (PHC) centers. These reports, however, have not shown the impact on the quality of patient care, either in the hospitals or in general practice clinics.^{1,2} Other studies have indicated wide variations in the referral rates among general practitioners in Saudi Arabia,³ as well as the low rates of hospital feedback reports to PHC centers, which hinders the continuity of care in PHC settings.⁴ In addition, concern has been expressed about the poor quality of the referral letters, both from the primary care physicians and the hospital consultants.⁴ Yet another study from the Asir region in 1993 demonstrated the deficiencies in the administrative structure of the Hospital Coordination Offices (HCOs),⁵ but no study has mentioned the shortcomings of the referral process itself.

The present study was carried out with the objective of studying the referral system in one family practice center in Abha city by: 1) studying both the structure (premises and facilities) and the process of the referral system to identify the obstacles; 2) determining the rate and quality of referral letters originating from the family practice center, and also the rate and quality of hospital feedback reports; and 3) testing the hypothesis of whether the quality of referral letters and hospital feedback reports was related to the type of clinical speciality.

Patients and Methods

The present study was conducted at Wasat Abha PHC center in the Asir region, which has a catchment area of about 15,000 inhabitants. Of the four full-time general

practitioners working at the PHC center, one was a qualified family physician. In addition, there were two part-time physicians, one of them a consultant of family medicine and the other a pediatrician. Other staff included eight nurses, a health inspector, a laboratory technician, a radiology technician and an administrator.

The study was conducted over a period of four months between May and August 1997. During the study period, a carbon copy of each of the PHC's referral letters was preserved at the center. A period of two months' follow-up was allowed in order to allow sufficient time to receive the hospital feedback reports to these referral letters. Every hospital feedback report was attached with the corresponding carbon copy of the letter.

The PHC referral letters and the hospital feedback reports were evaluated for the presence or absence of 20 and 10 predetermined points, respectively, in accordance with the guidelines laid down by the National Quality Assurance Protocol (NQAP)⁶ and by international standards.⁷ The selection of the important information for auditing was agreed upon by the practice team. The criteria for the selection of 20 points for studying the PHC referral letters were based on the presence or absence of 10 clinical and 10 administrative items in the referral letter. These items are listed in Table 1 and the 10 items selected for studying the feedback hospital reports are listed in Table 2.

A scoring system for such items was developed by one of the authors of this study. If the item was recorded, a mark of 1 was given, if not, a mark of 0 was given. The quality of the PHC referral letter was considered appropriate if it scored $\geq 70\%$ (≥ 14 items), and inappropriate if it scored $< 70\%$ (≤ 13 items). Similarly, the feedback hospital report was considered appropriate if it scored $\geq 70\%$ (≥ 7 items) and inappropriate if it scored $< 70\%$ (≤ 6 items). Hospital departments were classified into medical departments (medicine, pediatric, dermatology, emergency and psychiatry) and surgical departments (general surgery, ophthalmology, otolaryngology, urology and orthopedic). The quality of the PHC referral letters and the hospital feedback reports were compared according to the two different departments.

The referral process was evaluated by one of the investigators of this study. The investigator recorded the

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TABLE 1. Omitted items in PHC referral letters according to the type of referral specialty and inappropriateness of referral letters.

Letter items	Medical specialties n=240 (%)	Surgical specialties n=614 (%)	Total n=854 (%)	P-value
Clinical items				
Presenting complaint(s)	0	2 (0.3)	2 (0.2)	0.99
Present medical history	3 (1.25)	19 (3.2)	22 (2.6)	0.15
Previous medical history	152 (63.3)	443 (72.1)	595 (69.7)	0.01
Sociopsychological matters	240 (100)	614 (100)	854 (100)	–
Drug history	1 (0.4)	2 (0.3)	3 (0.4)	0.66
Known allergies	235 (97.9)	575 (93.6)	810 (94.8)	0.01
Physical examination	0	2 (0.3)	2 (0.2)	0.99
Results of investigations (if any)	0	2 (0.3)	2 (0.2)	0.99
Diagnosis	55 (22.9)	160 (26.1)	215 (25.2)	0.34
Reasons for referral	19 (7.9)	53 (8.6)	72 (8.4)	0.70
Inappropriate clinical items (score ≤6)	74 (30.8)	213 (34.7)	287 (33.6)	0.28
Administrative items				
Demographic characteristics of the patient:				
Age	2 (0.83)	23 (3.7)	25 (2.9)	0.02
Literacy status	240 (100)	614 (100)	854 (100)	–
Occupation	240 (100)	614 (100)	854 (100)	–
Marital status	240 (100)	614 (100)	854 (100)	–
Referral characteristics:				
Type of referral (urgent, immediate, elective)	0	1 (0.1)	1 (0.1)	0.99
Date of referral	0	12 (1.4)	12 (1.4)	0.02
Clear handwriting	0	0	0	–
Doctor's name and signature	2 (0.83)	5 (0.8)	7 (0.8)	0.99
Family health registry	14 (5.8)	80 (13.0)	94 (11.0)	0.002
Inappropriate administrative items (score ≤6)	20 (8.3)	125 (20.4)	145 (17.0)	0
Overall inappropriate items, clinical and administrative (score ≤13)	85 (32.4)	281 (45.8)	366 (42.4)	0.006

administrative steps of the referral process, starting from the primary health care center, the local HCO, the hospital outpatient clinics, the inpatient hospital departments, and finally the feedback to the primary health care center.

The structure of the HCO was evaluated by an observation checklist comprising eight items, where the presence of an item of information scored 1 and its absence scored zero. These eight items were derived from the National Quality Assurance requirements⁶ of the HCOs, and included accessible and well-organized premises, adequate and well-trained staff, appropriate job descriptions for staff, a registration system, telephone line for appointments and facilities for typing.

Appropriate tests of significance were performed while analyzing the data. Pearson chi-squared test was used to find out the difference between categorical data. In cases of small cell frequencies, Fisher's exact test was used.

Results

During the four-month study period, a total of 22,838 visits were made by the patients to Wasat Abha PHC Center, with an average of about 57.7 patient visits per doctor per day. During this period, 864 patients were referred to the different departments of the hospital by the PHC doctors, at a referral rate of 3.8 per 100 patient visits. Out of the 864 referral letters, 339 hospital feedback reports were received by the PHC center, which was an overall feedback rate of 39.2 per 100 referrals.

The referral process was composed of several consecutive steps. It was observed that the referral letters

were still handwritten, making them sometimes difficult to read. It was also noticed that some patients delivered the referral letters to the HCO themselves and that others had the letters with them for a considerable period of time. Some of these letters were delivered in a crumpled condition, making it difficult for the doctors to obtain the full information. It was also observed that the HCO did not maintain any record of incoming or outgoing referral letters. It registered only the appointment on the referral letters and returned them to the patient, and this led to difficulties in monitoring the referral system. No feedback reports were issued at all from the tertiary care hospital (ACH) unless requested by the patient or the PHC doctor.

The total score of the structure of the HCO was found to be 2/8. The low score was due to the fact that the personnel working with the HCO were unaware of their job descriptions and did not have any kind of training related to their work. No record in the form of a registration book was maintained at the HCO with regards to referral letters or to the hospital feedback reports. There was no direct telephone line facility, and only an extension was in operation. The HCO did not have any facility for typing the hospital feedback reports.

It was noticed that the referral rates (per 100 referrals) to three hospital departments—obstetric/gynecology (24.8%), ophthalmology (17.5%), and dermatology (13%)—accounted for two-thirds of the referrals during the study period, while the remaining referrals were directed to the departments of orthopedics (8.6%), general surgery (7.9%), medicine (7.8%), emergency (3.7%), otolaryngology (9.5%) and psychiatry (0.9%). On the other

hand, the highest feedback rates were obtained from the departments of dermatology (74.1%), pediatrics (57.1%), general surgery (52.9%) and medicine (45.1%). There were no feedback reports at all from the department of psychiatry. The referral rates to the different hospital departments varied from 0.9% to 24.8%, while the feedback rate from the different hospital departments ranged between 0% and 74%. There was a statistically significant difference in the feedback rates among the different hospital departments ($X^2=96.04$, $df=9$, $P<0.001$).

Of the 864 referral letters, 10 (1.2%) did not mention the specialty, and 614 (71.9%) were directed to the surgical specialties, while 240 (28.1%) were directed to the medical specialties. Approximately two-thirds of the hospital feedback reports (64.6%) were received from the surgical specialties, while the rest (35.4%) were received from the medical specialties.

Table 1 shows the inadequacies of the PHC referral letters in terms of recording relevant clinical and administrative items. Items mostly omitted in the PHC referral letters were sociopsychological data of the patients (100%), some demographic characteristics (age, literacy status, occupation, etc.), patients' known allergies (94.8%) and past medical history (69.7%). The PHC referral letters directed to surgical departments showed significantly higher rates of omission in recording the patients' age, date of referral and family health registry number ($P<0.05$) compared to medical departments, and there was an overall significant difference between the two departments in the omission of recording the administrative items of the referral letters ($P<0.001$). Such a difference was not observed in the clinical items of the referral letters ($P>0.05$).

Table 2 shows the inadequacies of the hospital feedback reports due to omission of some relevant items in the reports. The items which were mostly omitted in the hospital feedback reports were the advice given to patients (100%), the findings on investigations (21.5%), the final diagnosis (15.6%), the date of feedback report (14.2%), the management plan (13.3%), and presence of clear recommendations to the patient (10.3%). There was no significant difference in inadequacy level of the hospital feedback reports between the medical and surgical departments ($P<0.05$).

Table 3 shows significant differences in the proportion of appropriate PHC referral letters directed to various hospital departments ($X^2=58.60$, $P<0.001$). It is observed that about 80% of the referral letters to the departments of pediatrics and dermatology were appropriate and they occupied the highest rank, while <40% of the referral letters to the departments of psychiatry and urology were appropriate and occupied the lowest rank. Table 3 also shows significant differences in the proportion of the appropriate feedback hospital reports to PHC ($X^2=62.93$, $P<0.001$). It is observed that >85% of the hospital feedback reports from the departments of obstetrics and

TABLE 2. Omitted items and inappropriateness of the feedback hospital reports according to type of specialty.

	Medical specialties n=120 (%)	Surgical specialties n=219 (%)	Total n=339 (%)	P-value
Date of feedback report	17 (14.2)	31 (14.2)	48 (14.2)	0.94
Summary of history	11 (9.2)	12 (4.6)	23 (6.8)	0.21
Findings on examination	10 (8.3)	10 (4.6)	20 (5.9)	0.17
Findings on investigation	33 (27.5)	40 (18.3)	73 (21.5)	0.06
Diagnosis	25 (20.8)	28 (12.8)	53 (15.6)	0.06
Management plan	16 (13.3)	29 (13.2)	45 (13.3)	0.10
Advice given to patient	120 (100)	219 (100)	339 (100)	–
Clear recommendations	15 (12.5)	20 (9.1)	35 (10.3)	0.35
Clear handwriting	12 (10.0)	9 (4.1)	21 (6.2)	0.03*
Consultant's name and signature	8 (6.7)	9 (4.1)	17 (5.0)	0.32
Inappropriate quality (score ≤ 6)	14 (11.7)	26 (11.9%)	40 (11.8%)	0.92

*Significant at 5% level of significance.

gynecology, orthopedics, medicine, pediatrics and dermatology were appropriate. Only one feedback report was received from the department of urology, and it was inappropriate, and no feedback reports were received from the department of psychiatry.

Discussion

The present study highlights several shortcomings in the referral process, including deficiencies in the structure of the HCO, and supports a report published three years after the implementation of the referral system in the Asir region.⁵

The overall referral rate observed in this study was low compared to one group of studies, where the referral rate ranged between 4.3 to 6.6 per 100 patient visits,^{3,4,8} but was fairly high compared to another study.⁸ It has been suggested that the wide variation in the referral rates among general practitioners could be explained partly by chance¹⁰ and partly by the context and individual approaches to health care.¹¹

The overall distribution of PHC referrals to various specialties observed in this study agrees with the findings of a previous study.⁴ After excluding maternity and emergency cases, the referral rates to departments of ophthalmology, dermatology and otolaryngology were found to be comparable with other studies, which account for the highest referral rates.^{3,4} The referral rate to the department of psychiatry was found to be low (0.9%) compared to another report (3.9%),³ and very low when compared to the prevalence rate of psychiatric disorders in PHC settings,^{12,13} which varies from 28% to 46%. Misdiagnosis of psychiatric disorders was reported in one study¹² to vary from 36.6% to 50%, which indicates a need for more training of PHC physicians in some specialties.

The low rate of hospital feedback reports observed in the present study (39.2 per 100 referral letters) was found

TABLE 3. Appropriateness of the PHC referral letters (RL) and hospital feedback reports (FR).

Hospital department	Appropriate PHC RL (%)	Appropriate hospital FR (%)
Pediatrics	17/21 (81.0)	11/12 (91.7)
Dermatology	89/112 (79.5)	73/83 (88.0)
Surgery	47/68 (69.1)	28/36 (77.8)
Orthopedics	44/74 (59.5)	23/24 (95.8)
Ophthalmology	81/151 (53.6)	40/51 (78.4)
Obstetrics and Gynecology	114/214 (53.3)	85/86 (98.8)
Medicine	35/67 (52.2)	22/23 (95.7)
Otolaryngology	38/82 (46.3)	14/18 (77.8)
Psychiatry	3/8 (37.5)	0
Urology	9/25 (36.0)	0
χ^2, P	58.60, $P < 0.05$	62.93, $P < 0.05$

to agree with a previous study.⁴ The reason for such a low rate of feedback reports, compared to higher rates in some Western countries (55-88 per 100 referrals),⁴ could be lack of awareness on the part of hospital consultants of the importance of communication with PHCs in maintaining the continuity of care and patient satisfaction. Nonetheless, there was marked variability in the feedback rate among different hospital departments.

The present study showed that the hospital feedback reports are of a higher quality than the PHC referral letters. This could be due to the present structured format of the PHC referral letters recommended by the Ministry of Health. These PHC referral forms lack several items which are recommended by the NQAP⁶ and other international investigators,⁷ such as the detailed demographic characteristics (literacy status, occupation, marital status) and other sociopsychological information on the patients. Several investigators acknowledge the importance of including clear identification of the patient and his sociopsychological background in referral letters.^{6,7} The present study also showed marked variability in the appropriateness of the referral letters directed to the different hospital departments. Since earlier national reports,³ there has been a general improvement in the recording of certain items of the referral letters, such as present history, drug history, etc., but still no improvement in recording past medical history, and comments are rarely made on the known allergies of the referred patients.

The present study shows a decrease in the rate of inappropriate feedback hospital reports, compared with the earlier national report.² However, it was observed that hospital consultants rarely recorded any advice given to the patient or relatives concerning the patient's illness. In a UK study,⁷ 86% of the hospital consultants and 91% of the family physicians were of the opinion to include any advice and/or recommendations to the patient or to the family in their referral letters.

This study has highlighted some of the inadequacies hindering the effectiveness of the referral system in a primary health care center eight years after its implementation, and has suggested various ways of dealing

with them. The recording of essential patient information by the PHCs in their referral letters, as well as a thorough feedback report by the hospitals to whom these patients are referred, will help maintain the continuity of care of patients and result in better patient satisfaction.

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