

# Patterns of referral in the Family Medicine Department in Southeastern Saudi Arabia

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## ABSTRACT

**الأهداف:** تقييم مستوى تحويل المرضى ومستوى ملائمة كلاً من تقارير التحويل وردود الاستشاريين.

**الطريقة:** لقد تم إجراء دراسة مقطعية في قسم طب الأسرة بمستشفى القوات المسلحة بشرورة (SAFH)، شرورة، المملكة العربية السعودية. لقد شملت الدراسة كافة تقارير تحويل المرضى في شهر واحد وهو يونيو 2009م. تم جمع البيانات من الملفات الطبية خلال الفترة من أغسطس إلى سبتمبر 2009م ومن ثم استخدمت أدوات البحث من أجل مراجعة مستوى ملائمة تقارير التحويل وردود الاستشاريين بالإضافة إلى صفات كل من المرضى والأطباء، وانتهت الدراسة في يناير 2010م.

**النتائج:** أظهرت النتائج بأن نسبة تحويل المرضى كانت عالية على وجه العموم (16%)، وكانت نسبة تحويل المرضى الذكور (40.5%) (183 مريضاً) أقل من نسبة تحويل المرضى الإناث (59.5%) (269 مريضة). لقد كانت العوامل الإدارية المتعلقة بتحويل تقارير أكثرية المرضى ظاهرة وواضحة (مثل العمر وجنس المريض)، كما أنها سجلت درجات أعلى من العوامل السريرية (مثل تاريخ المرض والفحص الطبي) (95% ≥). لقد كانت نسبة ردود الاستشاريين الغير ملائمة (53%) أعلى بكثير من تقارير التحويل الغير ملائمة والتي تم إرسالها من الرعاية الصحية (12%) ( $p=0.008$ ).

**خاتمة:** تشير الدراسة بأن مستوى تقارير تحويل المرضى يحتاج إلى التحسين حيث أن أكثر الردود والتقارير السابقة كانت سيئة.

**Objectives:** To assess the referral pattern and identify the appropriateness of the referral letter and consultant's feedback.

**Methods:** This cross-sectional study was performed at the Family Medicine Department, Sharurah Armed Forces Hospital (SAFH), Sharurah, Kingdom of Saudi Arabia. The study population (sampled population) included all referrals in one month (June 2009). We obtained the appropriateness of the

referral letter, consultants' feedback, and patients and physician's characteristics using research tools. The fieldwork was conducted during the period of August to September 2009 and the study was completed in January 2010.

**Results:** Overall, the referral rates was 16%. The percentage of referred male patients were 40.5% (n=183) and females were 59.5% (n=269). The variables of the administrative part of the referral letter (such as age, gender of the referred patient) were present and clear (readable) in most of the patients. Also, the scores of different administrative items of the referral letter were higher ( $\geq 95\%$ ) than the clinical items (such as history taking and physical examination). Inappropriate consultant feedbacks (53%) were significantly higher than inappropriate primary health care referral letters (12%) ( $p=0.008$ ).

**Conclusion:** The results of this study suggest that the quality standard of referral process needs to be improved as the received referrals letters and feedback reports were poor.

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Referrals of patients from primary care to medical specialist care, and back to primary care comprises an important activity in any healthcare system. There is evidence, that the gate-keeping role of general practitioners (GPs) increases efficacy of the system and reduces costs.<sup>1-3</sup> The referral rates in the United

States is approximately 4.5% of all patient visits, and physicians receive up to 45% of new patients through referral.<sup>4</sup> It has been found that elderly patients >60 years are referred more frequently ( $6.49 \pm 0.39$ ) than younger adults ( $3.19 \pm 0.47$ ) in Asir region, Kingdom of Saudi Arabia.<sup>5</sup> An optimal referral has a clear purpose, related to diagnosis or treatment, which is specified by the GP in the communication with the consultant. Also, patients have specific expectations of the referral, related to diagnosis or treatment, which may or may not have been discussed with the GP.<sup>1,6</sup> The primary care physicians may have different reasons for making referral decisions. Specialists' assistance was sought for diagnostic or therapeutic dilemmas, management of conditions that presented too infrequently to maintain clinical competence, and specialized procedures that fell outside the physician's scope of practice. In some cases, physicians referred because patients requested to see a specialist.<sup>7</sup>

In Riyadh,<sup>8,9</sup> Jizan, Northern Region, and Hail,<sup>8</sup> studies have shown inadequacy of both referral letters and feedback received from specialists and recommended implementation of the quality assurance program for improving the quality of referral letters and feedback reports. The results of the pilot study showed that the referral rate of the Family Medicine Department (FMD) in Sharurah Armed Forces Hospital (SAFH), ranged from 8-18% per month in 2009. The mean rates was  $12.3 \pm 3.4\%$ . The overall referral rate observed in this pilot study was high compared to one group of studies in Saudi Arabia, where the referral rate ranged between 4.3-6.98 per 100 patient visits.<sup>5,8,9</sup> There are no previous studies that deal with the referral process at SAFH. This study aims to determine the variables of the referral letters as a part of the continuous improvement.

**Methods.** This cross-sectional study was performed at the Family Medicine Department, Sharurah Armed Forces Hospital, Sharurah, Kingdom of Saudi Arabia. Sharurah governorate, is located in the Najran region of Saudi Arabia approximately 200 miles east from the town of Najran. It is located in the Empty Quarter desert near the Yemeni border. The target population consisted of all patients eligible for medical care in SAFH. The SAFH is a 146-bed secondary hospital that provides health care for military personnel and their families (approximately 60000). The study population (sampled population) included all referrals in one month (June 2009). A sample size of  $\geq 41$  was calculated from the target population with an estimated proportion of referral to be 12% (by estimating the main of referral rate during 2008 FMD-SAFH), 95% confidence coefficient, and 10% confidence interval.<sup>10</sup> This means that at least 41 referrals should be included

in the present study. However, the study included 730 patients who attended the family medicine clinics and referred to other specialty clinics in June 2009. Thus, it can be concluded that the sample size is justified. The referred patients' files were excluded if the name of the referring Primary Health Care (PHC) physician was not written in the referral letter, the specialty clinic was not determined in the referral letter, or the referral request (letter) was not available in the patients' files. Structured interview schedule was used to collect data regarding physician characteristics that included age, gender, nationality, years since graduation, postgraduate qualifications in the family medicine, and duration of working in FMD, SAFH, patients' characteristics (socioeconomic data was collected from the file namely, age, gender, education, occupation and family size), and referral letter questionnaire. Structured questionnaire was used to collect data regarding the referral process. It was divided into 2 parts. One was specified for the referring physician, and the second part for the consultant's feedback. It should be noted that the referral form used in SAFH is a Bi-way form. It was divided into 2 parts, one for the referring physician, while the other is specified for the speciality or subspecialty consultant. However, the data in the referral letter was classified into administrative and medical data. The administrative section of the referring physician included the following 7-variables: name of the referring department (PHC), patient's name, medical file number, type of referral (routine, urgent, and so forth), specialty to which the patient was referred, date of the referral, and physician's name and signature. The medical section included the following points (7 variables): personal history (age and gender), present complaints, and medical history (present illness, relevant past history either medical or surgical, family history, social history), physical examination, investigations (recent investigations, if needed), diagnosis, and/or differential diagnosis, and reason for referral. The consultant feedback included the following 10 points: date of feedback report, summary of history, findings on examination, findings on investigation, diagnosis, management plan, advice given to patient, clear recommendations, clear handwriting, and consultant's name and signature.

Each item was scored one or zero with a total score of 14 for the referral letter and 10 for the consultant feedback. If the questionnaire item was present and clear, it was given a score of one. If it was present (readable), but not clear (not readable) or absent, a score of zero was given. Both referral letter and feedbacks were considered appropriate if at least 70% questionnaire items ( $\geq 10$  for referral letter and  $\geq 7$  for feedback) were completed.<sup>8</sup> The researchers collected the appropriate data from the files using the pre-designed tools of the study.

The field work was conducted after we obtained the approval from the Ethics and Research Committee of SAFH, from August to September 2009, and the study was completed in January 2010. First, we conducted a pilot study for reliability testing of the study tools and identification of practical barriers for implementation. The researchers were given specific hours from the daily duty hours to conduct the research according to the guidelines of the Medical Services Department of the Ministry of Defense and Aviation, Kingdom of Saudi Arabia.<sup>11</sup> The researchers assessed the quality of the referral using scoring system.

The following ethical points were taken in consideration:<sup>11</sup> 1) Confidentiality: the information was treated in confidence and the names of the referring doctor, speciality consultant, and patient were not identified. 2) The activities of the research did not lead the patients and physicians to commit acts, which diminish their self-respect. 3) Approval of SAFH research and ethics committee to conduct the study. The subjects of the present research were the referral letters, so the consent of the patients was replaced with approval of the program director to collect data from the medical files.

All statistical analyses were performed using the SPSS software package version 10. Appropriate significant tests were applied according to the types of variables. Measures of central tendency and dispersion, as well as, appropriate significance tests were applied according to the types of variables.

**Results.** Four thousand and four hundred forty-two patients attended the Family Medicine Department in June 2009. Of these, 730 patients were referred by PHC physicians to other specialties (16.4%). Out of the 730 referrals, 452 (62%) met the inclusion criteria. We excluded 163 and 115 files were not available in the medical record department. The percentage of referred male patients was 40.5% (n=183) and females 59.5% (n=269). The total number of referring physicians (PHC doctors) was 13 (10 males and 3 females). The mean age of the referring physician's was 35.0±5.6 years, while the age of the referred patients' was 23.6±18 years. The range of doctor's years of experience was 5-24 years and doctor's working years in SAFH was 0.5-5.0 years.

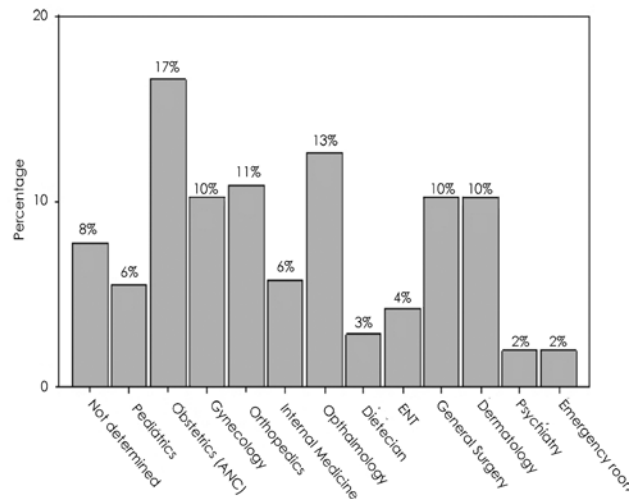
Out of the 452 referral letters, 343 (75.8%) were referred routinely, 84 (18.6%) were referred urgently, 12 (2.7%) were referred directly to the emergency room, and 13 (2.9%) to a specific dietician (different forms used).

The referral feedback of PHC doctors was available in the referral letter only (53% of cases). The researchers investigated different sections of the patients' files in the other 47% of referrals (that has no feedback in

the by-way referral letter) for any data documentation in the progress notes or specialty specific sheets to be evaluated. The results show that the consultants or the specialist documented the findings of the interview in the progress notes (26% of referrals), or in their specific pre-printed sheets namely, Ante Natal Care (ANC) sheet (9%), but did not document any data in 3% of referrals. The frequency distribution of specialties is presented in **Figure 1**. Most patients were referred to obstetrics (17%, n=75) and gynecology (10%, n=45), ophthalmology (n=57), orthopedics (n=49), general surgery (n=46) and dermatology (n=44). The figure illustrates also that the specialty was not defined in 35 referral letters that represents 8% of the total study referrals.

**Table 1** summarized the frequency distribution of different variables of the referral letter. If one variable was included in the exclusion criteria namely the name of the specialty to which the patient was referred, it would be excluded from further analysis. However, the items of the clinical part of the referral letter were defective. Important and relevant items of history taking and physical examination were mentioned or specified in 56% and 46% of referral letters (inappropriate referral items with scores <70%).<sup>8</sup> Also, the scores of different administrative items of the referral letter were higher (≥95%) than the clinical items (variables 8-14).

**Table 2** summarized the distribution of different variables of the consultant's feedback. Advice given to the patient was mentioned only in 30% of referrals with no recommendation to FMD doctors in approximately 63% of referrals. All variables scores were < 70% except 2 items (date of the feedback and consultant name, **Table 2**).<sup>8</sup> The quality of the FMD referral letter was considered



**Figure 1** - Frequency distribution of different specialties to which patients were referred (n=452).

**Table 1** - Frequency distribution of different variables of the referring physician's letter

Variables	Present and clear		Present- not clear or absent		Score (Mean ± SD)
	n	(%)	n	(%)	
Name of the referring department (PHC)	446	(98.7)	6	(1.3)	0.99 ± 0.11
Patient name	448	(99.1)	4	(0.9)	0.99 ± 0.09
Medical file number	449	(99.3)	3	(0.7)	0.99 ± 0.08
Type of referral (routine, urgent)	436	(96.5)	16	(3.5)	0.96 ± 0.19
Specialty to which the patient was referred†	413	(91.4)	39	(8.6)‡	0.98 ± 0.13
Date of the referral	441	(97.6)	11	(2.4)	0.98 ± 0.15
Name with signature of the physician	430	(95.1)	22	(4.9)	0.95 ± 0.21
Personal history: (age and gender and so forth)	378	(83.6)	74	(16.4)	0.84 ± 0.37
Present complaints	349	(77.2)	103	(22.8)	0.78 ± 0.42
Medical history: (present illness, relevant past history either medical or surgical, family history, social history)	251	(55.5)	201	(44.5)	0.56 ± 0.50*
Physical examination	206	(45.6)	246	(54.4)	0.46 ± 0.49*
Investigations‡ (recent investigations, if needed)	166	(45.5)	199	(54.5)	0.56 ± 0.50*
Diagnosis and or differential diagnosis	319	(70.6)	133	(29.4)	0.72 ± 0.45
Reason for referral	387	(85.6)	65	(14.4)	0.86 ± 0.35

\*inappropriate referral items (<70%). †FMD referrals with no specified specialty (n=35). ‡Investigations are not applicable (ordered) in 19.2% (n=87) of patients.

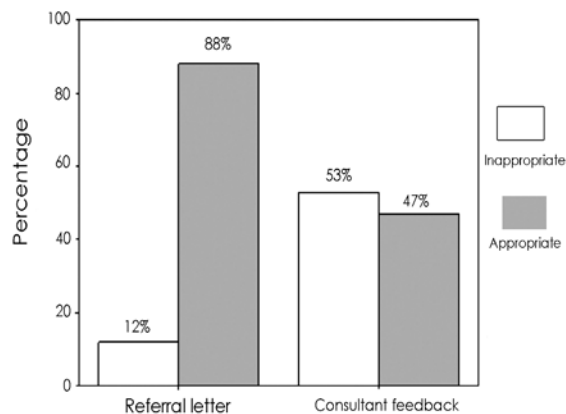
**Table 2** - Frequency distribution of different variables of the consultant feedback (n=417).\*

Variables	Present and clear**		Present-not clear§		Score	
	n	(%)	n	(%)	Mean	SD
Date of feedback report	366	(87.6)	51	(12.4)	0.88	0.33
Summary of history	275	(65.9)	142	(34.1)	0.66†	0.47
Findings on examination	218	(52.3)	199	(47.7)	0.52†	0.50
Findings on investigation‡	143	(34.3)	274	(65.7)	0.50†	0.50
Diagnosis	278	(66.7)	139	(33.3)	0.67†	0.47
Management plan	301	(72.2)	116	(27.8)	0.67†	0.47
Advice given to patient	124	(29.7)	293	(70.3)	0.72	0.45
Clear recommendations	126	(30.2)	291	(69.8)	0.30†	0.45
Clear handwriting	269	(64.5)	148	(35.5)	0.64†	0.47
Consultant's name and signature	372	(89.2)	45	(10.8)	0.89	0.31

\*FMD referrals with no specified specialty (n=35) were excluded from the analysis.  
 †inappropriate consultant feedback items (<70%). ‡No investigations were ordered for 16.3% (n=68) of patients. \*\*readable, §not readable

appropriate if it scored  $\geq 70\%^8$  ( $\geq 10$  items), and inappropriate if it scored  $< 70\%^8$  ( $\leq 9$  items). Similarly, the feedback hospital report was considered appropriate if it scored  $\geq 70\%^8$  ( $\geq 7$  items) and inappropriate if it scored  $< 70\%$  ( $\leq 6$  items). The results of the cross-tabulation between the appropriateness (quality) of the referral letter of FMD doctors and consultant feedbacks are shown in **Figure 1**. Inappropriate consultant feedbacks (n= 222 [53%]) was higher than inappropriate FMD referral letters (n=51 [12%]). The difference was statistically significant ( $p=0.008$ ).

**Discussion.** The overall referral rate observed in this study (16%) was high compared to one group of studies, where the referral rate ranged between 4.3 and 6.9 per 100 patient visits.<sup>5,8,9</sup> The overall distribution of FMD referrals to various specialties observed in this study is consistent with the findings of previous studies that were conducted in KSA.<sup>8,9</sup> However, the referral rate to the Department of Psychiatry was found to be low (2%) and consistent to the results of another study that was conducted in Riyadh (1.3%).<sup>9</sup> These figures are very low when compared to the high prevalence rate (60%) of psychiatric disorders in PHC settings.<sup>12</sup>



**Figure 2** - Comparison between appropriateness of the referral letter and consultant feedback.

However, the rate of psychiatric referral ranges from 5-50% in general practice.<sup>13</sup> The low rate of psychiatric referral, in the present study, may be attributed to different patterns of morbidity or low competency of physicians. The low rate of hospital feedback reports observed in the present study (53 per 100 referral letters) was found to agree with previous studies.<sup>8,14</sup> The reason for such low rate of feedback reports on the part of the hospital consultants, compared to higher rates in some western countries (55-88 per 100 referrals),<sup>14,15</sup> could be lack of awareness of the importance of communication with PHCs in maintaining the continuity of care and patient satisfaction.<sup>15</sup> To derive maximum benefit from the services of secondary or tertiary level of care, the referring General Practitioner (GP) working in PHC should provide a feedback on every referred patient.<sup>15,16</sup> In our study, we received only 53% replies on the referred patients. The reply of the specialists to the referral letter has a significant role in improving the continuity patient care in PHC, and is considered as the most important tool for information transfer on the treatment to be followed by the GP.<sup>16</sup> In our study, the referring physicians did not specify the specialty to which the patient was referred (34 referrals [7.5%]) leading to dysfunction of the referral process. These findings correspond with the results of other studies in Saudi Arabia.<sup>8,12,13</sup> The present study shows that the inappropriate consultant's feedback (53%) was higher than the inappropriate PHC referral letter (12%). The difference was statistically significant ( $p=0.008$ ). Writing good quality referrals lead to a good quality of patient care and consultant's feedback.<sup>13</sup> The very high rate of poor feedback reports (53%) is striking. The feedback from specialists to PHC doctors was found to be deficient in some aspects. For example, summary of

history taking (66%), findings on examination (53%), and investigations (34%) were mentioned clearly. Advice given to the patient was mentioned only in 30% of referrals with no recommendation to PHC doctors in approximately 63% of referrals. All variables' scores were <70% except in 2 items (date of the feedback and consultant name that has no clinical significance). These figures were consistent with the results of another study that was conducted to evaluate the quality of referrals from PHC centers to general hospital in 4 regions in Saudi Arabia (Riyadh, Gazan, Northern Region and Hail).<sup>8</sup> It has been found that poor feedback leads to poor follow-up care in the PHC setting, also, the research has shown that adding an evidence-based summary of one sentence to the specialist's report increases GPs' follow-up of the advice.<sup>16,17</sup> Good-quality reply letters are essential to provide a communication link between GPs and specialists which, in turn, may have a positive impact on the patients' quality of care. It has been reported that high-quality referral reply letters offer an inexpensive way to transfer practice-based, relevant educational information to GPs, thus leading to improved continuity and quality of care.<sup>18</sup> Most patients, in the present study, were referred to obstetrics and gynecology ( $n=120$ , 27%). This high figure is not consistent with other studies in Saudi Arabia<sup>8,9</sup> and can be explained by the fact that all pregnant women were referred to the obstetrics department for antenatal care due to lack of qualified family doctors in FMD. However, the referral rates to other departments such as ophthalmology (13%), orthopedics (11%), general surgery (10.2%), and dermatology (9.7%) were comparable with other studies.<sup>8,9,19</sup>

In conclusion, the referral rate in the present study is high, and quality of referral letters and feedback reports is inadequate and needs to be improved. The GPs and specialists in the secondary care level should be aware of the problem and understand their role in the process. Organizing a hospital committee and continues quality improvement program with frequent audits are highly recommended for continues improvement of the referral process.

The study has some limitations. Although the sample of referrals was reasonably large, it may suffer from selection bias as it was derived from one practice in a specific region, which may have limited generalizability of findings. Also, it was a cross sectional study and only 3 GPs assessed the consultant feedbacks.

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