An analysis of referrals from primary care

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The pattern and number of referrals made by primary care physicians has a significant impact on the cost and quality of health care delivery. Rationalization of the referral process leads to both savings in cost and improvement of quality of care. This paper analyzes the pattern of referrals and evaluates the effect of clinical audit on the number and type of referrals from the primary care physicians to specialists in the Northern Area Armed Forces Hospital, Hafr Al-Batin, Kingdom of Saudi Arabia (KSA) from July 2002 through to January 2003.

King Khalid Military City is situated approximately 60 km west of Hafr Al-Batin in the north of KSA. It has a population of approximately 120,000 inhabitants, mainly personnel of the Saudi Armed Forces and their dependents. Other residents include civilian Saudi employees and expatriate support staff together with their families. The city has only one large hospital, Northern Area Armed Forces Hospital, run by the Ministry of Defense. This hospital has a capacity of 330 beds with daily clinics in all major specialties. The Department of Primary Care and Emergency Medicine of this hospital is staffed with 40 primary care physicians. It is headed by a consultant in Family Medicine and has 9 satellite clinics situated in various parts of the city.

In the month of May 2002, a project was initiated for screening and auditing of all referrals made by the physicians of the department to the emergency room (ER) and to specialty clinics in the hospital. After a successful trial run for a period of 2-months from May through to June 2002, involving 3 family clinics, the scope of the project was widened to include all primary care clinics of the department from July 2002. The purpose of this paper is to analyze the data obtained from this project for 7-months from July 2002 through to January 2003.

The present study is a retrospective analysis of the effect of clinical audit on the pattern of referrals from primary care physicians to the specialists. The study involves a cumulative total of approximately 140,000 patient visits over a period of 7-months in the Department of Primary Care and Emergency Medicine catering to a population of approximately 120,000.

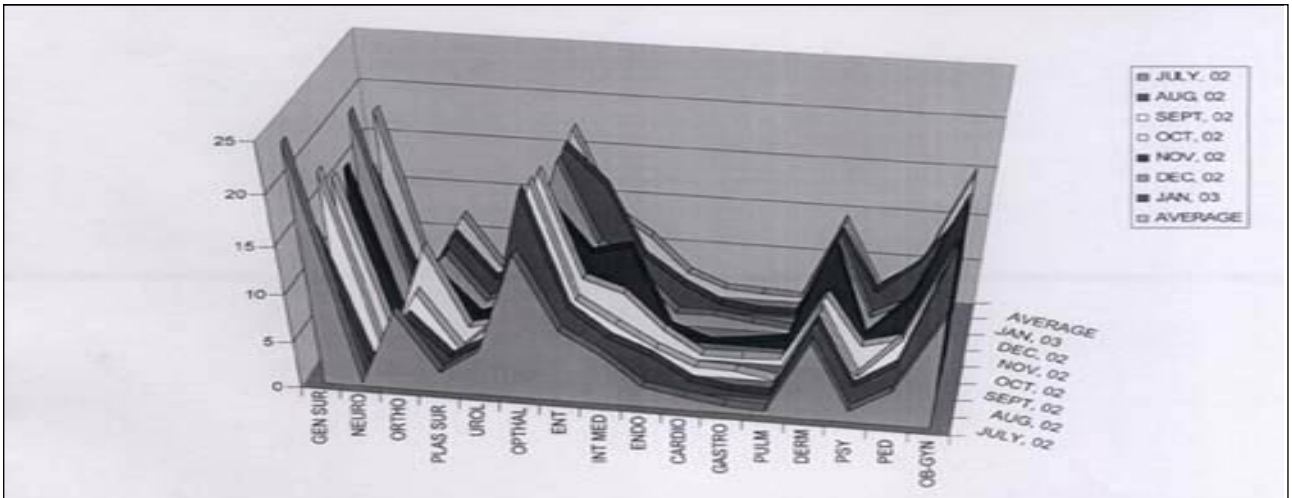
Referrals from primary care physicians to the hospital have been classified into 2 types. Urgent referrals constitute patients who require immediate care that may include hospitalization or emergency consultations with a specialist. Such cases are referred to the ER after informing the duty doctor at the ER.

Table 1 - Total number of patients and referrals.

Month	Total patients	Total referrals	Referral (%)
July 2002	13,664	675	(4.9)
August 2002	15,272	666	(4.4)
September 2002	22,084	815	(3.7)
October 2002	25,030	874	(3.5)
November 2002	19,180	642	(3.3)
December 2002	19,908	721	(3.6)
January 2003	23,346	548	(2.3)
Total	**138,484**	**4941**	**(3.6)**

Other cases that are not in need of immediate specialist consultation are referred to as non urgent or routine referrals. Appointment with the specialist for these cases may be as early as in a day or 2 or may be as late as 3-months, based upon the workload of the concerned consultant. Referral feedback forms have been devised to be filled in by each doctor of the department at the end of the day. The doctor has to fill in the medical record number of each referred patient together with the provisional diagnosis, reason for referral and the name of the specialty to which referral was made. If the case is referred to the ER, the case is followed up on the same day and the outcome (discharge, admission and so forth) is noted down. Completed forms are collected by the in-charge doctor of each clinic and submitted daily to the supervisor of the department who scans all the referrals and verifies that the required details are filled in properly. The data is logged in daily on receipt of the daily reports and referral feedback forms from all the clinics.

Audit of non urgent or routine referrals to the specialty clinics is carried out at the end of 2-3-months giving sufficient time for delayed appointments. Old completed referral forms are re distributed to each physician. The physician screens the patients' files to note down the outcome of the routine referrals. Details of the consultation with the specialist are noted down together with the final diagnosis, treatment offered and the nature of follow up. The data accumulated from the 7-months study has been analyzed to assess the trend of referral rates and percentage of referrals to the specialized clinics and the ER. Percentages were obtained by simple calculation in Microsoft Excel spreadsheets and the results were tabulated. The



	GEN SUR	NEURO	ORTHO	PLAS SUR	UROL	OPTHAL	ENT	INT MED	ENDO	CARDIO	GASTRO	PULM	DERM	PSY	PED	OB-GYN
JULY, 02	24.6	0.41	8.51	2.28	4.98	15.35	7.68	5.39	2.28	1.45	0.83	0.62	8.51	1.25	3.73	12.03
AUG, 02	14.5	0	6.25	2.01	4.24	19.87	8.26	5.36	3.79	1.34	0.67	0.45	8.93	2.01	4.69	17.83
SEPT, 02	18.87	0	7.05	1.06	4.76	19.22	7.41	5.11	2.82	1.06	0.88	0.18	8.29	1.23	5.64	16.4
OCT, 02	16.84	0.17	10.17	1.75	2.63	18.77	8.07	6.66	2.98	0.53	0.53	0.7	8.07	2.81	3.86	15.44
NOV, 02	16.36	0.52	5.45	1.3	2.6	13.77	9.09	10.13	1.56	0	0.52	1.04	11.95	2.08	6.49	17.14
DEC, 02	20.45	1.8	6.29	1.12	3.59	16.85	8.54	5.39	1.35	1.35	0.9	0.45	10.56	2.47	4.49	14.38
JAN, 03	13.32	0.55	6.75	2.01	3.47	16.97	13.14	5.83	2.92	0.91	0.36	0.36	9.85	3.47	6.93	13.14
AVERAGE	17.85	0.49	7.21	1.65	3.75	17.25	8.88	6.27	2.53	0.95	0.67	0.54	9.45	2.19	5.12	15.17

Figure 1 - Non urgent referrals to specialist.

number of patients seen in all the clinics of the department during the months of July 2002 through to January 2003 is shown in **Table 1**.

Patients. It may be noted that there is a constant fluctuation in the number of patients seen in the clinics during the period. This corresponds to the seasonal transmigration of the family members of the military personnel with the closing of schools during summer and Eid vacations.

Referrals. It may be seen that there is a steady decline in the percentage of referrals during the study period. Two reasons can be attributed to this decline in the referrals. 1. Efficient clinical audit of all referrals made during the period with daily monitoring and self audit by the referring physician. 2. Awareness among the physicians of the department that unnecessary and irrelevant referrals will lead to an increase in their workload. The referral rate for the month of December 2002 does not conform to the declining trend. There is an increase in the referral rate from 3.3% in November 2002 and to 3.6% in December 2002. One reason for this increase could be the return of patients with chronic conditions after the Ramadan holidays requiring specialist attention, thereby inflating the referral rate for that month.

Non urgent referrals to specialty clinics. A breakup of referrals by specialty is shown in **Figure 1**. It may be noted that the percentage of referrals remains approximately the same for each specialty every month, with minor fluctuations. Most of the referrals are made to surgical specialties as "the majority of primary care physicians are not trained to provide specialized surgical care, thus necessitating the need to refer patients who have surgical problems".[1] Bertakis et al[1] found in this study published in 2001, that "the top 5 most frequently consulted specialty clinics, accounting for almost 60% of the total referrals made for the study group, were surgical clinics." Forrest et al[2] found in their study (1999) that referrals to the surgical subspecialties constitute 52.3% of the overall referrals. Accordingly, it can be seen from the pattern of referrals made by the physicians of this department that 56.8% of the referrals were to the surgical specialties. Medical specialties accounted for only 19.5%, whereas psychiatry accounted for approximately 2.2%, obstetrics and gynecology for 14.7% and pediatrics for the remaining 5.1%.

Referral rates for orthopedics, ENT, urology and dermatology are approximately similar to the study of Bertakis et al.[1] However, the referral rate for surgery, ophthalmology, cardiology, psychiatry and obstetrics and gynecology differs significantly between the studies. The rate is higher for surgery, ophthalmology and obstetrics and gynecology whereas, it is found to be lower for cardiology and psychiatry in the present study.

Surgery. Referrals for circumcision and earlobe piercing constitute a major portion of non urgent

referrals to the general surgeon. Almost all male infants born in the hospital undergo circumcision in the first few days of life. Earlobe piercing, though not mandatory, is performed as a cosmetic procedure on the majority of infant girls. With approximately 2500 live births each year at the hospital, referrals for these 2 indications constitute a major portion of referrals to general surgery.

Ophthalmology. Among the subspecialties, ophthalmology accounts for 17.3% of referrals made during the period. Most referrals are made for refractive errors and visual impairment. A study is under progress in the department to assess the prevalence of visual impairment among school children due to refractive errors. This study may explain the reason for the high referral rate to this specialty.

Obstetrics and gynecology. The high referral rate for obstetrics and gynecology reflects the prevailing policy of the hospital that does not permit the family physicians to initiate oral contraception or to insert intrauterine contraceptive device (IUCD). Consequently, the majority of referrals to this specialty are requests for insertion of IUCD or for initiation of oral contraception. Training the physicians of the department in the insertion of IUCD and permitting them to initiate prescription of oral contraceptives would reduce the percentage of referrals to this specialty.

Psychiatry. A referral rate to the psychiatrist of approximately 6-7% is mentioned in the literature. The low referral rate of 2.2% for this specialty is unlikely to reflect the lower incidence of psychiatric disease in the population of the city. The traditional beliefs of the local population, together with the practice style of the physicians of the department are more likely to be the cause for this lower rate of referrals for mental illness.

Cardiology. The referral rate to the cardiologist at 0.9% is significantly lower than that determined by Bertakis et al[1] (6.2%). Only clear cut cases of cardiology such as patients with valvular heart disease or those in heart failure are referred directly to the cardiologist. Other less well defined cases, including cases of hypertension, who constitute a significant portion of referrals, are referred initially to the general internist. This accounts for the discrepancy in the referral rate for this specialty in the 2 studies.

In conclusion, the pattern of referrals from primary care physicians to the specialty clinics has a significant impact on the cost and quality of health care delivery. Worldwide, approximately 4.5% of patient visits to the primary care clinic are referred to the specialists.[3] The referral rate in the present study, however, is significantly lower. The rate varies from a high of 4.9% in July 2002 to a low of 2.3% in January 2003, with an average of 3.6% for the period of 7-months. This is mainly attributable to the efficient clinical audit undertaken during the period of the study.

Referrals to individual specialties follow the pattern seen in other studies with 5 significant exceptions. Referrals to general surgery, ophthalmology and obstetrics and gynecology were found to be significantly higher and referrals to cardiology and psychiatry were found to be lower than in the study by Bertakis et al.[1]

The large number of referrals for simple procedures such as circumcision and earlobe piercing for infants account for high referral rates to general surgery. Similarly, higher referral rate for obstetrics and gynecology is attributable to the referrals required for simple procedures which can be performed at primary care level, but have to be referred in accordance with the hospital policy.

The higher referral rate for ophthalmology may be attributed to a higher prevalence of refractive errors in the local population, though this has to be established in a separate study.

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Branchial remnants: *A review of 15 cases*

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Branchial remnants including sinuses, cysts, fistulas and cartilaginous rests are relatively rare lesions that can occur in the head and neck of infants and young children. This is a review of our experience in the management of 15 children with branchial remnants. The medical charts of all patients with the diagnosis of branchial remnants were retrospectively reviewed for age at presentation, sex, and mode of presentation, operative findings, pre and post operative