Patterns of referral to Red Cross War Memorial Children's Hospital, Cape Town

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Summary

Patterns of referral to Red Cross War Memorial Children's Hospital were studied to assess the appropriateness of referrals. From 1 July to 31 December 1987 all 9 288 referral letters presented to the hospital were collected and a sample (4 662 letters) analysed. It emerged that the patients were similar to those attending the outpatient department without referral, except that relatively fewer referred patients were black. The private sector, i.e. general practitioners, was the largest referral agency, followed by day hospitals. Most patients were referred to the outpatient department without an appointment. Of the specialist clinics, the surgical clinics (i.e. ophthalmology and ear, nose and throat) had the highest number of referrals. The majority of patients (84,9%) were not admitted. Only in 30,3% of referred cases did the hospital make contact with referral agents. Referral rates were highest from the predominantly coloured areas of the Cape Peninsula.

The hospital cannot isolate itself from the community it serves and needs to support and guide referral agents in order to improve the utilisation of the hospital. Training of health professionals in order to increase expertise is a priority. A study of the total patient population would facilitate the understanding of hospital utilisation. Similar studies could be beneficial at other hospitals.

The method of providing health care in a developing country is a contentious issue. 'Health for all' needs to be aimed at and specialised care provided for those who require it. The Alma Ata declaration on primary health care stressed that, in order to attain the goal of health for all, co-ordination of all sectors of health services is essential. With reference to the role of the hospital, the report recommended that '. . . all levels of the health system support primary health care by facilitating referral of patients and consultation on health problems; by providing supportive supervision and guidance, logistic support, and supplies; and through the improved use of referral hospitals'.[1]

In order to attain the goal of comprehensive health care for the entire population in a region, it is mandatory that the provision of health care should be assessed constantly from all aspects. The hospital must not be viewed as a rival to primary health care services but must complement them and concern itself with the total health of the community.

With the rapid urbanisation that has occurred in Cape Town over the past decade, and the gradual relative decrease in health expenditure, assessment of the role of the academic referral hospital is of great importance.

Red Cross War Memorial Children's Hospital (RCCH) provides specialist care not available at other health centres, including procedures and technical facilities, and functions as a training centre for all categories of child health professionals. The hospital also provides primary and secondary health care to the community in its proximity.

In 1986 259 720 patients were treated at the RCCH outpatient department (OPD);[2] the figure for 1987 was 285 376 (excluding radiography).[3] In a retrospective analysis of RCCH statistics in 1985 Deeny[4] noted that 60% of all patients seen in the OPD were self-referred, 33% were referred from within the hospital and 7% were referred from outside the hospital.

The problems that exist at academic referral hospitals are universal and have been defined as:[5] (i) overloading with patients who could be managed in the community, i.e. unnecessary referrals to the hospital; (ii) the frequency with which patients bypass the primary health care facilities and present directly to the hospital; (iii) poor lines of communication between the different health sectors; and (iv) the lack of clearly defined referral systems.

The aim of this study was to examine referrals to RCCH to determine whether the above problems were present. Appropriate action to improve the referral of children to the hospital could then be taken by the health authorities.

At RCCH referred patients with urgent medical conditions are assessed by the medical registrar in the medical outpatient department (MOPD). Referred patients with diarrhoeal disease who require admission are admitted to the diarrhoeal disease ward. Referred patients with 'complex' conditions are seen at a specialist paediatric clinic on weekdays with the overflow seen by medical officers in the MOPD. On public holidays and over weekends all these patients are seen by the MOPD medical officers. Referred patients with surgical conditions are seen by medical officers in the surgical outpatient department (SOPD). Patients with traumatic injuries are seen at the trauma unit. Referred patients with appointments at specialist clinics are seen at these clinics.

Several studies have been undertaken in the UK to examine general practitioner referral rates to hospitals and the reasons for high and low rates,[6-9] but they concentrate on general practitioners, excluding other health care providers. Furthermore, the results pertain to a developed society and therefore would not necessarily apply to a developing society such as that in South Africa.

Methodology

Data collection

A photocopying machine was installed at each of the two admission offices. The admission officer photocopied the letter of every patient referred in the study period, or recorded the folder number of sealed letters, which were subsequently traced.

The photocopied referral letters were stamped with the date and time of arrival and labelled with a standard hospital sticker indicating the name, date of birth, hospital number, race and sex of the patient.

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Sampling

There were two stages: (*i*) all collected letters were coded for basic data; and (*ii*) after consultation at the hospital a sample of folders was recalled in order to review the outcome of the consultation.

A representative sample of days was chosen for the folder review by means of a systematic stratified selection of the days available during the study period in order to have a sample of weekdays, weekends, public holidays and religious holidays.

For the first 3 months of the study all letters were included in the first stage. It was decided to limit the coding of basic data to the predetermined specified days for the subsequent 3 months for logistical reasons. No marked difference in referral patterns was found between the first and subsequent 3-month period. A sample of 4 662 letters were coded for basic demographic data, and 1 325 were analysed in detail. All the information was not available on all the patients, so the sample size varies in the presentation of the results. The data were analysed on an IBM mainframe computer.

Results

Patient profile

During the 6-month period 1 July - 31 December 1987, 9 288 patients were referred to the hospital. This represented 6,8% of the 136 412 patients seen at the hospital during that period.[4]

There were more coloureds (77,1%) among the referred patients than among those who presented directly to the hospital (63,7%) and fewer blacks (15,1%) among the referred than among those who presented directly to the hospital (29,6%) (Medical Informatics Department — personal communication).

Of the referred patients, 69,4% were under 5 years of age. Patients who had never been to the hospital previously constituted 54% of the study population. There was no considerable difference in the numbers of patients referred each month, although there was a slight fall-off in December.

Referral rates for referred children are set out in Table I. The white residential areas and the areas served by Tygerberg Hospital had the lowest referral rates. The coloured residential areas had the highest rates, and Athlone, which is in close proximity to the hospital, had the highest rate of all (0,93%). Referral rates were not calculated for all the black areas, because accurate denominators were not available. Of the referred patients, 16,1% were from areas outside the Cape Peninsula.

TABLE I. REFERRAL RATES*

Area	Rate (%)
Predominantly coloured residential areas	0,43
Black residential areas	0,39
Predominantly white residential areas	0,25
Tygerberg Hospital areas	0,09

*Referral rate (%) = number of referred children in area × 100
total number of children in area[5]

Referral agencies

The referral agencies are indicated in Table II. The distribution of geographical areas of referral agencies (Fig. 1) is similar to the residential areas of referred patients, with Mitchell's Plain and Athlone being the most common areas.

TABLE II. REFERRAL AGENCIES

	No.	%
General practitioners	2 200	47,20
Day hospitals	1 143	24,50
Local authorities	497	10,70
Provincial hospitals	460	9,90
Midwife obstetric units	76	1,60
Private specialists	65	1,40
Other	221	4,70
Total	4 662	100,00

>15%	■
10-≤15%	▨
5-<10%	▨
< 5%	▨

Fig. 1. Geographical distribution of referral agents in the greater Cape Town area.

Referrals

The clinics to which referral agents referred are indicated in Table III; 42,5% of referrals were to the general MOPD. Of the specialist clinics, the surgical specialties received the highest number of referrals (ophthalmology 18,0%, ear, nose and throat (ENT) 15,4%). Dermatology received 14,3%, neurology 6,4% and allergy 5,0% of referrals to specialist clinics. Electroencephalography was the technical service most utilised by outside agencies (6,8%).

Local authorities utilised the eye clinic extensively (58,1% of their referrals to specialist clinics, usually for strabismus). Day hospitals utilised the ENT clinic (34,0% of their referrals,

TABLE III. TO WHOM DID THE REFERRAL AGENCIES REFER?*

	No.	%
General MOPD	531	42,50
Registrar in MOPD	22	1,80
Neonatal Jaundice Service	13	1,00
Specialist paediatric clinics	290	23,20
SOPD	147	11,80
Trauma Unit	45	3,60
Not specified	201	16,10
Total	1 249	100,00

*As indicated in the letter.

TABLE VI. FOLLOW-UP OF PATIENTS

	No.	%
RCCH	410	35,80
Referral agency or other health agency	252	22,00
Not required	240	21,00
Admitted to hospital	126	11,00
No evidence of follow-up	116	10,14
Total	1 144	99,94

usually for chronic otitis media). Referrals by general practitioners had an even spread, with the dermatology, eye, ENT and allergy clinics well utilised. Private paediatricians referred mainly to the urology clinic and the EEG service.

Hospital data

Of referred patients, 55% were seen before 12h00 every day and 77,2% were seen during working hours; 11,6% were seen after-hours but before 23h00, during which time the MOPD was staffed by medical officers; 12,2% were seen after 23h00, when it was staffed by a senior house officer.

The person consulted is indicated in Table IV and the outcome of consultation in Table V. The follow-up of the referred patients is indicated in Table VI.

TABLE IV. PERSON CONSULTED

	No.	%
Medical officer	545	47,90
Registrar	287	25,20
Consultant	222	19,50
Technician	55	4,80
Unknown	29	2,60
Total	1 138	100,00

TABLE V. OUTCOME OF CONSULTATION

	No.	%
Home	975	84,90
Overnight acute adm.	34	3,00
Overnight then hospital adm.	50	4,40
Surgical ward direct	43	3,75
Diarrhoea ward	28	2,40
Medical ward direct	14	1,20
Intensive care unit	4	0,35
Total	1 148	100,00

Only 30,3% of all staff replied to the referral agency or made a record of their reply. Consultants (66,7%) and technicians (72,7%) replied most often — technicians because they have to send reports.

Diagnoses

A total of 400 different diagnoses was coded for the patients. There was no considerable difference between the referral diagnosis and the hospital diagnosis, with agreement in 81,25% of major diagnoses made. The overlap between major referral diagnoses and hospital diagnoses is indicated in Table VII. The eight most common diagnosis groupings are indicated in order to highlight the overlap.

Discussion

The results indicate that the RCCH experiences the problems experienced by academic institutions world-wide.[5]

1. As the majority of patients referred were managed in the general OPD without the need for specialist opinion or admission to the hospital, it is possible that they could have been managed in the community. The hospital is functioning as a combination of all levels of care, and its actual future role needs to be redefined.

There was a wide scatter of sources of referral, with the private sector being the major single source. The Athlone area, which is adjacent to the hospital, had the highest referral rate. Black areas have few private sector facilities and day-hospital referrals therefore predominated in these areas. Referrals by general practitioners were geographically fairly evenly spread out in the sample. Local authority referrals were mainly from City Council clinics, while provincial hospital referrals were predominantly from hospitals in the Cape Town area.

2. Statistics routinely collected by the hospital Informatics Department indicate that over 60% of the patients seen at the hospital are not referred by outside referral agents (personal communication). It is clear that most patients bypass the community-based primary health care services in order to be treated at the hospital.

3. Hospital personnel do not refer the majority of the patients back to their colleagues in the community, and this is to the detriment of patients.

4. As the hospital does not cover the entire western Cape, a study of referrals to Tygerberg Hospital, the other referral hospital in the region, would complete the picture.

The process of referral to the hospital is poorly defined and referrals were not directed to clinics in a logical manner. Most referrals were to the OPD, indicating that many of the referrals were for services provided by the hospital other than tertiary care services, i.e. X-rays, laboratory procedures and acute treatment, e.g. for diarrhoea or acute respiratory problems. Only a minority of referrals were to a specified specialist clinic.

Conclusion

The hospital cannot isolate itself from the community it serves, and as the community changes so must the role of the hospital. The hospital must continue to provide the expertise that it has developed, but the needs of the community are far greater than this. Until the health authorities cater for the

TABLE VII. OVERLAP OF MAJOR DIAGNOSES

Referral diagnosis	Hospital diagnosis									
	Respiratory	Alimentary	Neurology	Infections	Trauma	Eyes	Dermatology	ENT	Other	Total
Respiratory										
No.	137	0	2	3	0	0	0	1	6	149
Row %	91,95	0,00	1,34	2,01	0,00	0,00	0,00	0,67	4,03	17,57
Col. %	79,65	0,00	1,87	5,08	0,00	0,00	0,00	2,08	3,47	
Alimentary										
No.	6	109	2	3	0	0	0	0	12	132
Row %	4,55	82,58	1,52	2,27	0,00	0,00	0,00	0,00	9,09	15,57
Col. %	3,49	92,37	1,87	5,08	0,00	0,00	0,00	0,00	6,94	
Neurology										
No.	13	4	99	3	1	0	0	1	26	147
Row %	8,84	2,72	67,35	2,04	0,68	0,00	0,00	0,68	17,69	17,33
Col. %	7,56	3,39	92,52	5,08	1,82	0,00	0,00	2,08	15,03	
Infections										
No.	5	0	2	41	0	0	3	0	11	62
Row %	8,06	0,00	3,23	66,13	0,00	0,00	4,84	0,00	17,74	7,31
Col. %	2,91	0,00	1,87	69,49	0,00	0,00	4,69	0,00		
Trauma										
No.	0	0	0	1	53	0	0	1	12	67
Row %	0,00	0,00	0,00	1,49	79,10	0,00	0,00	1,49	17,91	7,90
Col. %	0,00	0,00	0,00	1,69	96,36	0,00	0,00	2,08	6,94	
Eyes										
No.	0	0	2	0	0	52	1	0	5	60
Row %	0,00	0,00	3,33	0,00	0,00	86,67	1,67	0,00	8,33	7,08
Col. %	0,00	0,00	1,87	0,00	0,00	100,00	1,56	0,00	2,89	
Dermatology										
No.	1	0	0	0	0	0	59	0	1	61
Row %	1,64	0,00	0,00	0,00	0,00	0,00	96,72	0,00	1,64	7,19
Col. %	0,58	0,00	0,00	0,00	0,00	0,00	92,19	0,00	0,58	
ENT										
No.	6	0	0	2	0	0	1	45	6	60
Row %	10,00	0,00	0,00	3,33	0,00	0,00	1,67	75,00	10,00	7,08
Col. %	3,49	0,00	0,00	3,39	0,00	0,00	1,56	93,75	3,47	
Other										
No.	4	5	0	5	1	0	0	0	94	110
Row %	3,63	4,54	0,00	5,45	0,91	0,00	0,00	0,00	85,45	12,97
Col. %	2,32	4,23	0,00	10,16	1,82	0,00	0,00	0,00	54,34	
Total										
No.	172	118	107	59	55	52	64	48	173	848
%	20,28	13,92	12,62	6,96	6,49	6,13	7,55	5,66	20,40	100,00

needs of the new population of Cape Town, the RCCH will have to bear much of the load.

Pritchard[11] points out that referral 'is an interaction between the doctor's perception of his role, his perception of the patient's need for referral modified by his own anxiety or lack of resources, and pressure by the patient in response to his own perceptions and anxieties'. The balance between these factors will vary in different societies. In a developing society the lack of facilities and expertise in the primary health care sector plays an important role.

The solution to the problem of referrals will lie in the role the hospital will play in supporting, supervising and guiding the referral agents. The mixed nature of the health system compounds the problem, but a start would be the appropriate training of health personnel in the field of child health.

Any approach to solving the problem of referred patients must take all patients into account. Partial solutions will have no impact and the overall approach must be to determine how the hospital is to serve all the patients who present and how it is to function in the overall health plan for the region.

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