ORIGINAL ARTICLE

BURDEN OF DISEASE AMONG INPATIENT URBAN AND RURAL REFERRALS IN SURGICAL AND MEDICAL WARDS OF JINNAH HOSPITAL LAHORE

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ABSTRACT

Background: Hospital admission data can be a valuable tool for assessing the epidemiology of diseases within populations. With a minimum amount of data collection, substantial insight can be had into the types of diseases, the age at which conditions present, and their burden on inpatient service. And although these data are inevitably referral and access biased, they can provide useful information on morbidity in the community. Little is known about the surgical and medical diseases burden in tertiary care hospitals in Pakistan. Incomplete information has made it difficult to define an appropriate role for tertiary health care hospitals and the objectives of this research is to determine the referral profile of patients who are attending medical and allied OPD in Jinnah Hospital Lahore and compare disease burden from local and peripheral areas in surgical and medical units of Jinnah Hospital Lahore.

Methods: Cross sectional study in medical and surgical wards of Jinnah Hospital, Lahore

Results: In our study, it was found that public Tertiary Care Hospitals, such as Jinnah Hospital Lahore, has much more patients referred to it from rural cities compared to urban population with a referral burden of 63.01% subjects from rural areas or outside city versus 36.99% subjects belonging from urban areas or within city. Many of these patients, 35.6%, obtaining this facility equipped with all modalities in single setting belonged to poor socio economic status. 72.6% had a total family income of < Rs.20, 000/- per month. And the interesting fact causing the demise of Health Care Facility system is that 72% of the subjects were self-referred without any referral profile and diverting burden of Primary and Secondary Health Care facilities on the Tertiary Health Care setup.

Conclusion: The disease burden from peripheral/rural areas is far greater than local/urban areas in surgical and medical units of Jinnah Hospital Lahore, and the most of the subjects are self-referred.

KEY WORDS: Burden of disease, referral profile, inpatient

INTRODUCTION

Tertiary care is specialized consultative health care, usually for inpatients and on referral from a primary or secondary health professional, in a facility that has personnel and facilities for advanced medical investigation and treatment, such as a tertiary referral hospital [1]

Physicians frequently determine that patients either on site, or calling in, should proceed directly to medical outdoor for care. The referring physician has valuable data that can inform health care provider, including the history of the current problem, past medical problems, medications, allergies, and frequently a concrete assessment and plan for the patient such as hospital admission.[2,3] This profile supports the creation of a referral system including the nature of the current problem, past medical history, and medications. Upon arrival of the patient to the outdoor system, the patient is identified as a referral, and the transfer document should be incorporated into the concerned department. These profiles improve communication of intended patient care plans to ED providers and ensure that no pertinent data is lost. It streamlines workflow by obviating telephone calls between busy clinicians. [2,4]

The referral profile also describes the content and format of summary information extracted from a Primary Health care (PHR) System for import into an Tertiary Health Care (THR) System, and vice versa.[5] Hospital admission data can be a valuable tool for assessing the epidemiology of diseases within populations. With a minimum amount of data collection, substantial insight can be had into the types of diseases, the age at which conditions present, and their burden on inpatient service. And although these data are inevitably referral and access biased, they can provide useful information on morbidity in the community. Little is known about the surgical and medical diseases burden in tertiary care hospitals in Pakistan. Data are lacking on the spectrum of surgical and medical condi-

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tions, the mortality and morbidity associated with lack of surgical medical services, and the burden of surgical and medical diseases on the health systems. Incomplete information has made it difficult to define an appropriate role for tertiary health care hospitals.[6]

Shortages of primary care physicians are an increasing problem in many developed countries. In the United States, the number of medical students entering family practice training dropped by 50% between 1997 and 2005.[7] Developing countries face an even more critical disparity in primary care practitioners. The World Health Organization (WHO) has identified worsening trends in access to PCPs and other primary care workers, both in the developed and the developing nations.[8] A survey of 6,000 primary care doctors in seven countries revealed disparities in several areas that affect quality of care.[9]

The rationale of this study is to conduct a baseline survey of burden of disease in inpatient of surgical and medical wards of Jinnah hospital Lahore, which is a tertiary care hospital and has a wide catchment area both rural and urban. This will provide us with an insight of type of referral system in our setting and support inter-operability between PHR systems used by patients and THR systems used by health care providers that can improve understanding of patients need at the time of examination. This improves coordination between departments and thus improves health care delivery that is a growing need in developing countries health care system.

Perhaps the most frequent theme in the research literature on referral hospitals in developing countries is the inappropriate utilization of higher-level facilities and the apparent failure of most referral systems in developing countries to function as intended. Broadly speaking, hospitals of all levels, up to and including national tertiary centers, especially in their outpatients departments are overwhelmed by patients who could have been treated successfully at lower-level facilities, many of whom have self-referred, by-passing primary health care or district hospitals in the process.[10] Atkinson and others describe an extreme manifestation of this phenomenon, whereby the University Teaching Hospital is actually the only public hospital in Lusaka. Combined with the by-passing of primary health clinics in the city, this situation results in the University Teaching Hospital's functioning primarily as a glorified health center and first contact provider for most of Lusaka's population.[11] The problem of by-passing typically seems to be driven by a number of factors, including patients' perception of superior quality of care and resource availability at referral hospitals, which often may be entirely well founded and rational[12]; the desire to avoid delays in care if referral to a higher-level facility proves to be necessary; and the fact that for many urban populations a referral hospital may simply be the closest health facility. Many countries' failure to develop an adequate urban equivalent of the district health concept greatly exacerbates inappropriate utilization of hospitals.[13] The urban phenomenon of widespread by-passing and self-referral is frequently accompanied by low rates of formal referral from rural and outlying facilities.[14] These problems have a number of negative impacts and consequences. Simple conditions are unnecessarily treated in a high-cost environment; outpatient departments are congested by patients requiring primary care, thus causing long waiting times; scarce staff time is diverted from specialized areas and into inappropriate care; and more complex cases requiring specialized care are crowded out by more urgent but less technically demanding cases that could be cared for at lower levels. The la has been a particular concern in those countries w more serious HIV/AIDS epidemics. As the number patients falling sick with AIDS increases rapidly, they star occupy a significant proportion of beds in hospitals at levels, [15]inevitably crowding out patients requiring ot forms of care. Although AIDS cases may well require ho talization, only a small proportion of cases require spec ized or tertiary care. Gilks and others find that this crow ing-out effect may fall over time as the health syst adjusts to the pressures of AIDS, but countries fac impending AIDS epidemics should be prepared for initial appearance. Taken together, this complex problems undermines the effective delivery of b specialized care and appropriate primary health ca Specialized care is pushed to the background by human wave of demand for primary care, while hospit unwittingly further undermine the credibility of the prim health care system through one-sided competition which reinforces the cycle and ensures that primary hea care facilities remain under-used and inefficient. Studie the accessibility of referral hospital care in countries su as Ethiopia[17] and Nigeria [18] have repeatedly confirmed existence of a steep distance-decay function, indicat that—other things being equal—individuals with a gi need for a clinical service will be less likely to access t service the farther away from the referral center they l Compounding the impact of distance, investigators that problems relating to the availability, regularity, cost of transportation to referral centers also affect ser utilization [19].

Measuring the improvement in an individual's he status produced by the combined activities of a refe hospital, whether for patient care in the hospital or population-based programs, would theoretically possible, although practically and methodologic demanding. To our knowledge, such an effort has been attempted at the referral hospital level, though studies have attempted to proxy the effect of hos interventions on health outcomes for small district ho tals, focusing on survival only. [20,21] both studies indic that district hospitals appear to have a significant pos effect on health outcomes. Large numbers of pati receive care in referral hospitals, and most survive their suffering alleviated having gained substantial be from the care they receive. Therefore, the aggre direct personal health benefits from referral hospital will almost certainly be high. The question of whe referral hospital care is cost-effective relative to interventions delivered at lower levels of care is less ea answer in aggregate. By its nature, appropriate care referral hospital will tend to require more complex mixes and higher skill levels and, hence, will be rela expensive.

METHODS

It is a cross sectional study which was conducted a the months of October to December 2014 in the me and surgical OPDs of Jinnah Hospital, Lahore. A patients coming to medical OPD with a referral fro other Urban or Rural hospital were included in the The data was collected using a self-admini questionnaire and was analyzed using spss [20].

STUDY DESIGN: Cross sectional study
STUDY SETTING: Medical and surgical wards Jinnah

tal Lahore.
DURATION OF STUDY: 3 months.
SAMPLE SIZE: Sample size was estimated from epi-info to estimate a proportion
Confidence level = 95%
Acceptable difference = 0.05
Assumed proportion = 0.05 (i.e. 5 % of the patients were referred from other health care facilities)
Size of population = 10000
(i.e. Medical and Surgical OPDs attendance in 3 months' time period)
REQUIRED SAMPLE SIZE = 73

SAMPLING TECHNIQUE: Simple-random sampling

SAMPLE SELECTION:
Inclusion criteria:
- Either sex
- Age 14 – 70 years
- New patients attended medical and surgical opd's for

Table 1
Age of Repondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<20 years	16	21.9	21.9	21.9
	20 - 40 years	34	46.6	46.6	68.5
	40 - 80 years	23	31.5	31.5	100.0
	Total	73	100.0	100.0	

Statistics	Age of Respondents (yrs)
Mean	35.97
Mode	35
Std. Deviation	16.813
Minimum	12
Maximum	80

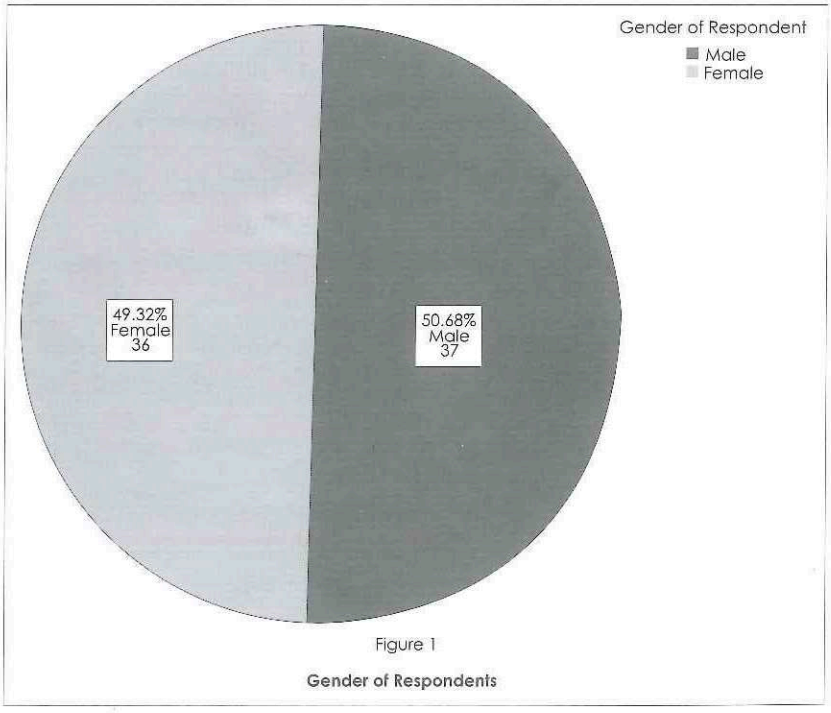

Figure 1
Gender of Respondents

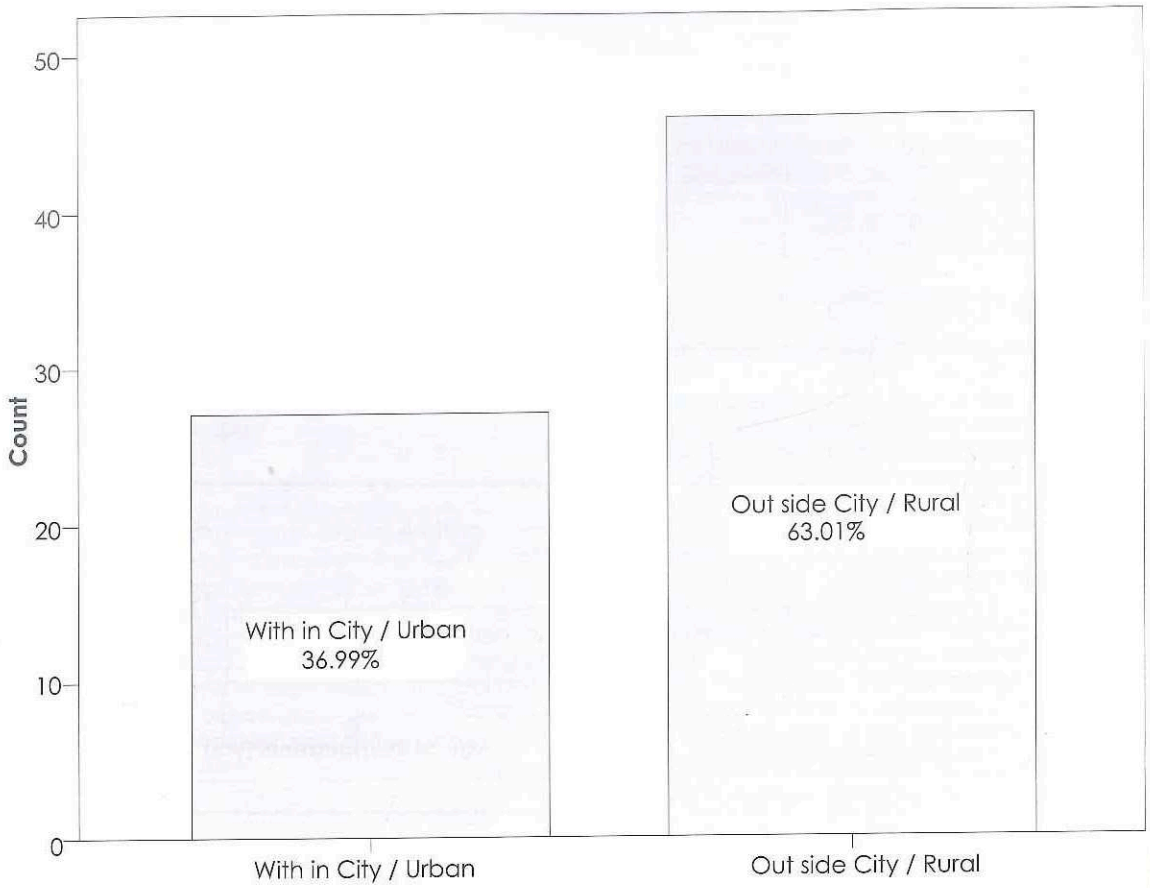

Figure 2

Referral Demographics

Table 2
Education Status

		Education spouse		Education husband	
		Frequency	Percent	Frequency	Percent
Valid	Illiterate	26	35.6	25	34.2
	Informal / Religious	4	5.5	4	5.5
	Primary	26	35.6	16	21.9
	Matric & above	11	15.1	16	21.9
	F.A / F.Sc	4	5.5	7	9.6
	Bachelors	1	1.4	3	4.1
	Masters and Above	1	1.4	2	2.7
	Total	73	100.0	73	100.0

Table 3
Occupational Status

		Occupation Spouse		Occupation Husband	
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	House wife	21	28.8	25	34.2
	Office Worker	2	2.7	4	5.5
	Manual Labour	16	21.9	96	12.3
	Business	3	4.1	3	1.4
	Agriculture	12	16.4	13	17.8
	Others	12	16.4	12	16.4
	Unemployed	7	9.6	9	12.3
	Total	73	100.0	73	100.0

Table 4
Total Family Members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 5	18	24.7	24.7	24.7
	6 - 10	40	54.8	54.8	79.5
	10 - 15	15	20.5	20.5	100.0
	Total	73	100.0	100.0	

	Total Family members
Mean	7.77
Mode	7
Std. Deviation	3.365
Minimum	2
Maximum	15

Table 5
Total Family Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< Rs:20,000/-	53	72.6	72.6	72.6
	Rs.20,000/- Rs.40,000/-	13	17.8	17.8	90.4
	>Rs.40,000/-	7	9.6	9.6	100.0
	Total	73	100.0	100.0	

	Total family income (Rs)
Mean	18534.25
Mode	6000
Std. Deviation	19171.979
Minimum	2000
Maximum	100000

Table 6
Income per capita

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< Rs:20,000/-	42	57.5	57.5	57.5
	Rs.20,000/- - Rs.4000/-	16	21.9	21.9	79.5
	>Rs.4000/-	15	20.5	20.5	100.0
	Total	73	100.0	100.0	

	Income per capital (Rs)
Mean	3361.06
Mode	1200
Std. Deviation	5384.693
Minimum	192
Maximum	40000

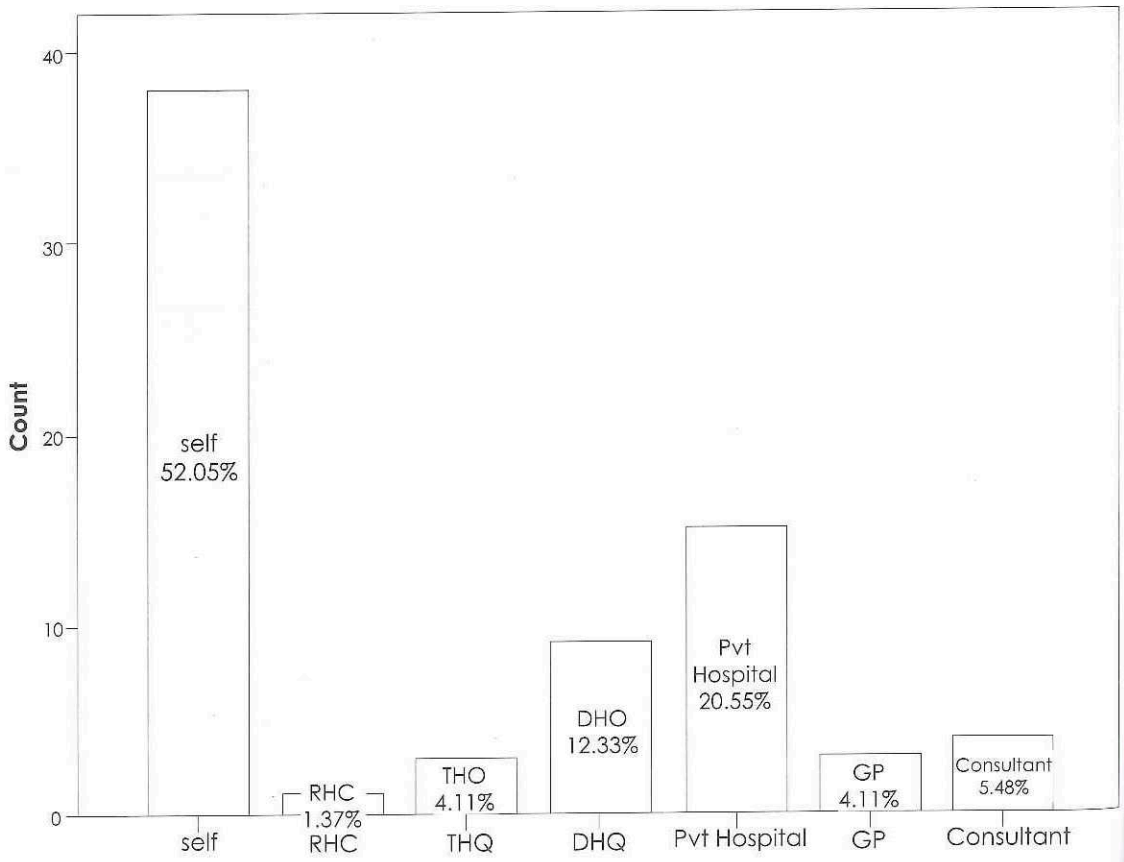

Figure 3
Reffered Patients Final Dignosis

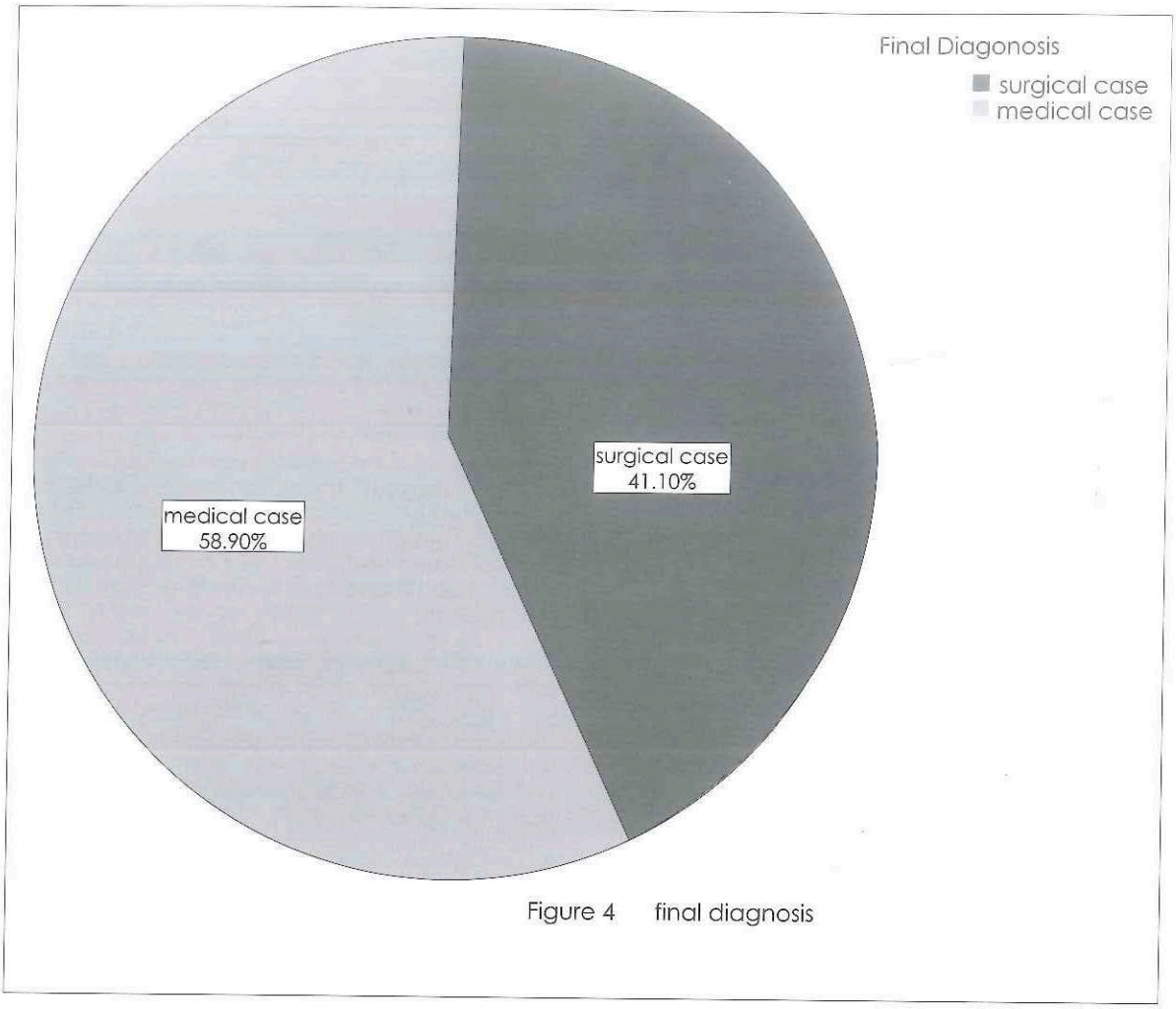

Figure 4 final diagnosis

Table 7
Total no of admissions in current facility

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One	56	76.7	76.7	76.7
	Two	12	16.4	16.4	93.2
	Three or More	5	6.8	6.8	100.0
	Total	73	100.0	100.0	

Table 8
Duration of Disease

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< One Month	25	34.2	34.2	34.2
	< Six Months	26	35.6	35.6	69.9
	< Six Months	22	30.1	30.1	100.0
	Total	73	100.0	100.0	

Statistics	Duration of disease
Mean	548.97
Mode	60
Std. Deviation	1170.335
Minimum	3
Maximum	7300

Table 9
Duration of Current Stay

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 1 Week	49	67.1	67.1	67.1
	< 2 Weeks	16	21.9	21.9	89.0
	< 3 Weeks	8	11.0	11.0	100.0
	Total	73	100.0	100.0	

Statistics	Duration of currentr stay (days)
Mean	7.04
Mode	3
Std. Deviation	5.420
Minimum	1
Maximum	20

the first time.
Exclusion criteria:

- Already diagnosed patients came for follow-up.
- Patients seeking advice for multiple specialties.
- Patients referred from another tertiary care specialty came for second opinion.

RESULTS

21.9% of the subjects lie in the age group of <20yrs, 46.6% lie in the age group of 20-40yrs and 31.5% lie in the age group of 40-80yrs (Table no: 1). 54.8% of the subjects were males and 45.2% were females (Graph no:1). 36.99% of the subjects were referred from within city/urban areas and 63.01% from outside city/ rural areas (Graph no: 2). 35.6% of the subjects were illiterate, 5.5% had informal/ religious education, 35.6% had primary education, 15.1% had matric and above, 5.5% had FA/FSC, 1.4% had Bachelor's degree and 1.4% did Masters and above (Table no:2). 28.8% of the subjects were housewives, 2.7% were office workers, 21.9% were manual labors, 4.1% were businessmen, 16.4% had agriculture as profession, 16.4% had other professions and 9.6% were unemployed (Table no:3). 24.7% of the subjects had <5 total family members, 54.8% had 5-10 total family members and 20.5% had 10-15 total family members (Table no: 4). 72.6% of the subjects had <Rs.20,000/- total family income, 17.8% had Rs.20,000-40,000/- total family income and 9.6% had > Rs.40,000/- total family income (Table no: 5). 57.5% of the subjects had < Rs.2000/- income per capita, 21.9% had Rs.2000-4000 income per capita and 20.5% had > Rs.4000/- income per capita (Table no:6). 52.1% of the subjects were self-referred, 1.4% were referred from RHC, 4.1% from THQ, 12.3% from DHQ, 20.5% from Private Hospitals, 4.1% from GPs and 5.5% were referred from consultants (Graph no: 3). 39.7% of the subjects were surgical cases and 60.3% were medical cases (Graph no: 4). 76.7% of the subjects got admitted in the current facility 1 time, 16.4% got admitted 2 times and 6.8% got admitted 3 or more times (Table no: 7). 34.2% of the subjects had their disease duration <1 month, 35.6% had their disease duration <6 months and 30.1% had their disease duration >6 months (Table no: 8). 67.1% of the subjects had the duration of current stay <1 week, 21.9% had <2 weeks and 11.0% had <3 weeks (Table no: 9).

DISCUSSON

The appropriate allocation of resources to referral hospitals within a national health system has long been a controversial issue in health system planning in developing countries. Consensus appears to be widespread that referral hospitals consume an excessive share of health budgets and that their contribution to improving health and welfare is low relative to the expenditure on these facilities, but the literature does not indicate what percentage of budgets should ideally be allocated to referral hospitals. Presumably, except in the poorest countries, some referral facility is needed, but how much is required and how should the proportion allocated to referral facilities vary with increasing levels of health expenditure and health system sophistication.

Few studies have been undertaken on how private hospitals operate in developing countries Although the exact balance of and relationship between the public and private health sectors varies greatly from country to country at all levels of the health system, a common theme in almost all low- and middle-income countries is that private hospitals do not follow the pyramidal referral form that public hospital systems have adopted almost universally. Most private health sectors do not clearly delineate district, secondary, or tertiary hospitals. Different private hospitals may offer different services and facilities on a more or less idiosyncratic basis, with independent medical specialists practicing and admitting patients at various different hospitals. In some settings, the private sector may be able to offer services that the public purse cannot afford to provide, thus allowing patients who could not afford private care some chance of accessing sophisticated treatments through the government's paying private providers or by some pro bono provision of treatment for poor patients.

In many countries, government hospitals are establishing private wards as a vehicle for income generation. The fees for such units are lower than those at private hospitals, offering access to private facilities to patients who may not be able to patients who may not be able to afford private hospitals. The link with academic medicine often adds to the appeal of such facilities. However, as is the case in South Africa, effectively only tertiary hospitals and a handful of secondary hospitals are felt to be attractive enough to private patients to offer genuine opportunities as preferred providers. The mass of district and regional hospitals are unlikely to be attractive to private patients; therefore, the positive spinoffs of these initiatives may be limited in their scale and reach.

In addition to finding that public hospitals favor urban residents over rural dwellers, a number of studies have indicated that public hospitals in many poor countries disproportionately benefit the better off, leading their authors to argue that diverting public funds from hospitals and toward primary health care would be pro-poor [23]. Other studies find this tendency in some countries but not in others [24]. By contrast, in Latin American countries, Barnum and Kutzin [25] find strong evidence that public hospitals are pro-poor in their distributional effect. Even if referral hospital services are not currently pro-poor, policy makers face two contradictory alternatives: either to retarget public funds toward primary health care for the poor, hence greatly reducing or abandoning public funding for referral hospitals, or to attempt to remove the barriers that prevent the poor from using higher-level services, which would probably require increased spending on all levels of care. In our study, it was found that public Tertiary Care Hospitals, such as Jinnah Hospital Lahore, favors rural dwellers over urban residents with a referral burden of 63.01% subjects from rural areas or outside city versus 36.99% subjects belonging from urban areas or within city. The junk, 35.6%, obtaining this facility equipped with all modalities in single setting were illiterate, belonging to poor socio-economic status. 72.6% had a total family income of < Rs.20,000/- per month. And the interesting fact causing the demise of Health Care Facility system is that 72% of the subjects were self-referred without any referral profile and diverting burden of Primary and Secondary Health Care facilities on the Tertiary Health Care setup.

CONCLUSION

After three months of laborious work including data collec-

tion and analysis, we were able to conclude. The disease burden from peripheral/rural areas is far greater than local/urban areas in surgical and medical units of Tertiary Care Hospitals like Jinnah Hospital Lahore.

Most of the subjects are self-referred.
Majority of the visiting subjects are illiterate and belong to poor socioeconomic status.

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