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Admission Pattern and Extent of Resident Engagement in a Public Hospital Private-Wing surgical practice: Experience from St. Paul's Hospital Millennium Medical College; Addis Ababa, Ethiopia

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Abstract

Objective: Establishment of private wing in public hospitals is one of the Ministry of health of Ethiopia's health sector financial reform program which was launched in 2008. This study was initiated to illuminate the experiences on admission pattern and engagement of residents inprocedures in private wing within a public hospital.

Methodology:A hospital based retrospective study on surgical procedures was performed from September 2013 to August 2016. Data were collected by using structured questionnaire and analyzed with SPSS version 20.1. Quantitative and qualitative data were used in the analysis.

Results: A total of 4995 patients were admitted and operated in the private wing; out of which 56.7% were females and 43.3% were males. Cholelithiasis is the leading cause of admission accounting to 44.9% of the general surgery admission followed by thyroid pathologies and hernias. BPH is the leading cause of admission followed by urolithiasis and urethral stricture in the urology unit. Residents have been involved in 62.7% private wing procedures. These procedures ranges from excision of soft tissue mass to abdominoperineal resection.

Conclusion: Cholelithiasis, thyroid pathologies and hernias were common surgical pathologies threated in the private wing. Surgical residents were the primary assistant in most procedures. The private wing admission in a public hospital has opened a new window of opportunity in addressing the increased demand of surgical services and increased the engagement of

surgical residents' to a multitude of surgical procedures.

Key words:Private wing, Public hospital, admission pattern, resident engagement, Ethiopia

Introduction

In most of the developing countries, low salaries and poor working conditions have a significant role resulting in a substandard services and weak health system structure; and ultimately with powerful impact on the local and international brain drain. Recent literature shows that Africa is losing its skilled health workers at an alarming rate. Medical professionals left the public sector mainly due to attractive remuneration elsewhere [1]. Retention of qualified health staff has become a major problem in Ethiopia too. To solve these problem, the ministry of health of Ethiopia initiated a private wing setup within public hospitals where professionals could work at during their leisure time and earn additional income in 2008 [2]. Arrangements allowing consumers who wish to be treated privately in a public hospital are long standing. Private wing is an official arrangement implemented as one component of health care financing with the primary objective of improving health workers' retention, providing alternatives and choices to private health service users, and generating additional income for health facilities [3].

In Ethiopia, over the last few years, private wing has been established within public hospitals. The public sector objectives for these private wings include revenue generation as well as wider benefits to the public health system, leading to better access for specialty services in a broader range, retention of health personnel and development of new models of service delivery. Examples exist at St. Paul's Hospital Millennium Medical College, a federal teaching Hospital in Addis Ababa, Ethiopia. However, the model has not been used systematically all over the country because of the lack of a formal legal framework [4]. Surgical disorders represent a significant proportion of the burden of global disease. Access to reliable surgical care is a problem to more than 4.8 billion people worldwide from which 95 % of them live in low and middle-income countries (LMICs), where financial, infrastructure and logistical challenges are compounded by an inadequate surgical workforce [5, 6].

Delivering health service in Africa is challenged by many factors including lack of standard functional infrastructures and very low funding of the service. On top of that the continent is facing a loss of health

workers which has a significant negative impact on the economic and replacement of the lost manpower [7]. According to the Lancet commission on global surgery, 20 specialist workforces (surgeon, obstetrician and anesthesiologist) is required per 100,000 populations to ensure basic access. Therefore, postgraduate surgical education within LICs is the cornerstone for developing local workforce capacity to train and deliver services more properly and efficiently [8].

Ethiopia is among the countries that have started private wing practices within a public hospital as part of a solution to the existing problem. The service is officially arranged by the government, so that health care workers provide the care outside the official working hours and patients get the service on fee basis according to their choice and convenience. The main purpose is to mobilize additional resources, provide incentives for health workers' motivation and reduce attrition of highly qualified medical doctors, who otherwise go looking for lucrative private practices or overseas opportunities [9, 10]. The private wing in public sector were having similar role in other countries as well, in south Africa the objective stated as revenue generation, health provider's retention and better access for the disadvantaged population group [11].

Few studies exist that analyze the effect of private wing practices in a public hospital in terms of staff retention and income generation. As far as our knowledge there is no publication to date regarding the patterns of private wing admission and impact on surgery residents teaching in Ethiopia, therefore the aim of this study is to describe an additional perspective on private wing practices in a public hospital, specifically the admission pattern, and its impact on access to surgical service and resident training.

Materials and Methods

Study Setting: The study was conducted in St. Paul's Hospital Millennium medical college (SPHMMC). SPHMMC is a specialized teaching federal hospitals in Addis Ababa, Ethiopia. The college delivers a multitude of general, specialty and sub-specialty services. The College also provides undergraduate training in medicine and nursing program; it also provides postgraduate specialty and sub-specialty training in different disciplines of medicine.

The '**Private wing'** is "a system established within a public hospital whereby health

professionals provide medical and diagnostic services and obtain benefits from fees collected." The primary objective of the private wing is to promote the retention and motivation of health professionals in the hospitals, thereby reducing the high attrition rate and migration of qualified professionals from the public hospital to private sector practice.

Though this objective relates to all health professionals, specialists and general practitioners are its primary targets due to their high attrition to and concentration in the private sector. The other objectives of the private wing include building the capacity of the public hospitals and improving the quality of health care services by using the income generated by the private wing to satisfy the needs of clients who pay for care provided to them by a doctor of their Choice.

The private wing has been started in SPHMMC since 2008, and it has shown a progress in sustaining the service in most departments. The private wing out patient is running after the regular working hours staring from 5:30pm in week days and Saturday morning from 8:30am to 12:00pm. In the private wing it is **only elective procedures** allowed to be performed according to the rules and regulation of the hospital and the direction of the ministry of health of Ethiopia. All emergency patients coming to the private wing automatically transferred to the regular service without any preconditions.

The major operation theater (OR) has 4 tables shared among the different sections and units in the department. Regular elective operation runs in the working hours from Monday to Friday. The private wing surgeries are performed 7 days a week. During weekdays, procedure start after the regular elective surgical procedures and in the weekends it starts early in the morning.

During the study period which was from September 2013 - August 2016, the department of surgery was running the private wing dedicating 22 beds used for the three units: Orthopedics, Urology and general surgery. During the study period there were 8 general surgeons, 2 urologists and 2 orthopedic surgeons admitting and operating patients.

The surgical residency is a four years' program in Ethiopia, and we categorize them as senior (refers to 3rd and 4th year) residents, and junior residents (which includes 2nd and 1st year) residents. There is no regular resident assignment to the private wing like the regular wards. Residents assist

the procedure based on their interest and preference.

Study Design and Study Method: An institution based retrospective study conducted to illuminate the patterns of admission and extent of resident involvement in private wing procedures. The source population was all surgical procedure performed during the study period in SPHMMC. The study populations were all major procedure performed in the private wing set up at SPHMMC. The data on admission, diagnosis, age, sex, date of admission, unit, date of surgery, procedure performed, operating surgeon and assistant surgeon was collected from the private wing admission and computerized operative registry excel using structured questionnaire. Data completeness rechecked with operative log book. The procedure excels and log book contain the full name of the operating surgeon, assisting resident or nurse as the payment is based on this registry. The resident name from the operative registry re-labeled with their respective years using their annual rotation schedule in the department.

Ethical clearance where obtained from the college IRB before data collection. The data was collected by trained residents. All data were cleaned and transferred to SPSS version 20.1 and analyzed accordingly.

Results

In the study period 3527 general surgical cases were admitted and operated. During the same period 1184 urologic cases and 284 orthopedics cases were admitted to the private wing. The majority of general surgery cases admitted to the private wing were females with female to male ratio of 2.8:1, while males dominated the urology and orthopedics case admission pattern constituting 87.6%(1037) and 71.2%(202) of the admission respectively. The mean age of admission was 43 for general surgery cases, while 54 in urology and 37 in orthopedics cases respectively.

Table 1. Private wing admission pattern from September 2013 to August 2016, SPHMMC.

Cases	**Admission**	
	Number	%
General Surgery	3527	70.6

Urology	1184	23.7
Orthopedics*	284	5.7
Total	4995	100

***the regular orthopedics service has shifted to new emergency complex (AaBET Hospital) in beginning of 2016 but the private wing continues to function in the main hospital till the end of the study period.**

Table 2. Top ten admission diagnosis of general surgical, urologic and orthopedics cases in the private wing, from September 2013 to August 2016, SPHMMC.

	General Surgery			**UROLOGY**			**Orthopedics**		
	DIAGNOSIS	**N**	**%**	**Diagnosis**	**N**	**%**	**Diagnosis**	**N**	**%**
1	CHOLELITHIASIS	1583	44.9	BPH	613	51.8	FRACTURE	110	38.7
2	THYROID PATHOLOGIES	857	24.3	UROLITHIASIS^^	204	17.2	SOFT TISSUE TUMOR	46	16.2
3	HERNIA	281	8.0	URETHRAL STRICTURE	108	9.1	CHRONIC OSTEOMYLITIS	25	8.8
4	PERIANAL CONDITIONS^	222	6.3	OBSTRACTIVE UROPATHY	73	6.2	NONUNION/MAL UNION	23	8.1
5	BREAST CA	109	3.1	RENAL MASS	28	2.4	BONE TUMOR	15	5.3
6	OBSTRUCTIVE JAUNDICE	70	2.0	BLADDER NECK CONTRACTURE	26	2.2	BAKER'S CYST	10	3.5
7	COLORECTAL CANCER	64	1.8	PROSTATIC CA	21	1.8	DISLOCATION	9	3.2
8	VARICOSE VEIN	58	1.6	VARICOCELE	16	1.4	PSEUD-ARTHROSIS	9	3.2
9	BENIGN BREAST MASS	55	1.6	HYDROCELE	14	1.2	ARTHRODESIS	6	2.1
10	INTRAABDOMINAL MASS	27	0.8	BLADDER TUMOR	14	1.2	CLUB FOOT	5	1.8
	OTHERS	201	5.7	OTHERS	67	5.7	OTHERS	26	9.1
	TOTAL	3527	100.0	TOTAL	1184	100.0	TOTAL	284	100

The top ten admissions in different units are described in table 2. It showed that; in general surgery unit, Cholelithiasis accounted 44.9% of admission followed by thyroid pathologies and hernia, accounting 24.3% and 8% each. Moreover, 51.8% of urologic admission were BPH, followed by urolithiasis and urethral stricture. Fracture

was the main reason of orthopedics admission followed by soft tissue tumor and osteomyelitis.

Private wing procedure patterns of general surgery revealed, open cholecystectomy as the leading procedure followed by subtotal and near total thyroidectomy. The three leading procedure in urology were TVP, Lithotomy and urethroplasty; while the leading procedure in orthopedics was ORIF followed by debridement and excision.

Table 3: Top ten procedures performed in the private wing in each unit, September 2013 to August 2016, SPHMMC.

	GENERAL SURGERY		UROLOGY		ORTHOPEDICS	
	PROCEDURE	NUMBER	PROCEDURE	NUMBER	PROCEDURES	NUMBER
1	OPEN CHOELCYSTECTOMY	1374	TVP	574	ORIF	120
2	SUBTOTAL THYROIDECTOMY	437	LITOTOMY (PYELOLITOTOMY , NEPHROLITOTOMY, URETROLITOTOMY)	177	DEBRIDEMENT	43
3	NEAR TOTAL THYROIDECTOMY	240	URETHROPLASTY	112	EXCISION	40
4	LAPARASCOPIC CHOELCYSTECTOMY	178	NEPHRECTOMY	63	BIOPSY	20
5	MODIFIED BASSINI REPAIR	129	BLADDER NECK WEDGE RESECTION	24	SEQUESTEROTOMY	17
6	MRM	109	BOUGIE DILITATION	24	AMPUTATION	11
7	LOBECTOMY + ISMUTHECTOMY	108	TURP	22	TENDON REPAIR	5
8	MESH REPAIR	105	HYDOCELECTOMY	22	CONTRACTURE RELEASE	3
9	FISTULECTOMY	87	HYDROCELECTOMY	22	FOREIGN BODY REMOVAL	3
10	EXCISION	74	BILATERAL ORCHIDECTOMY	21	CLOSED REDUCTION	3

Among the 4995 procedures performed during the study period, 62. 7% of the procedures were assisted by residents. Of which, 2017(40.4%) were assisted by junior residents, and 1116(22.3%) of procedures were assisted by senior residents. Nurses

assisted 1862(37.3%) of procedures performed during the study period. But when we see the different units, the nurses were leading assistant in urology and orthopedics cases accounting 57% in each unit; while junior residents leading the general surgery assistance with 44.7% as shown in figure 1.

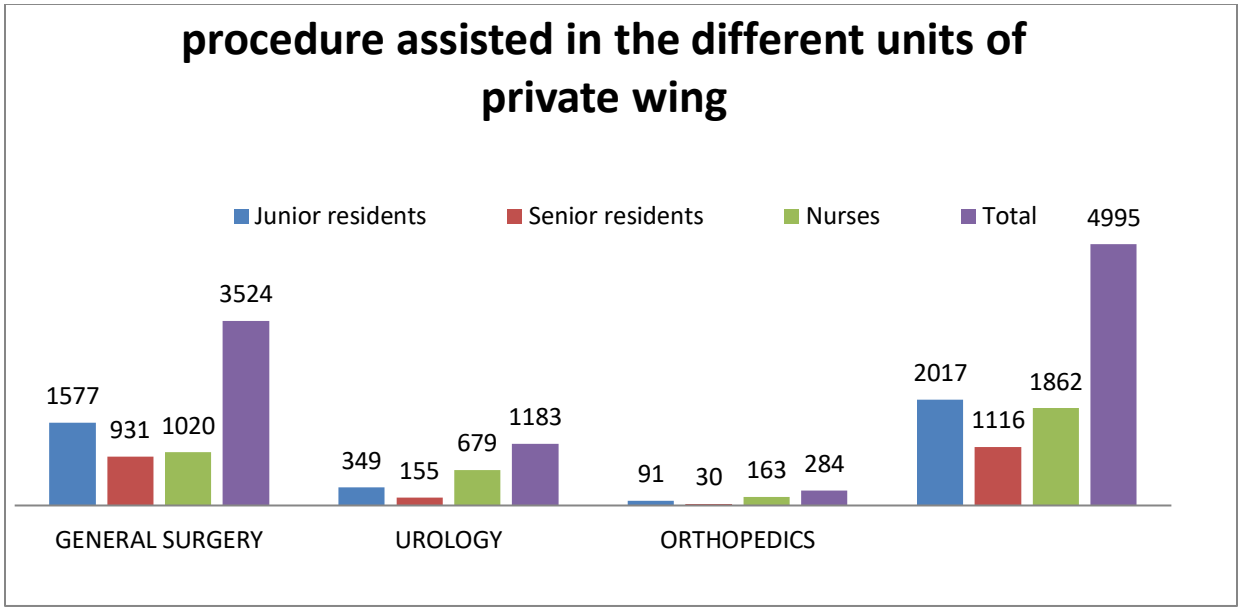

Figure 1: Patterns of private wing procedures assistance in the different unit, SPHMMC, from September 2013 to August 2016.

The procedure assistance pattern by specific top twenty procedures showed that junior residents dominantly participated in open cholecystectomy, thyroidectomy and modified radical mastectomies. Residents are the leading assistant in general surgical procedures except in laparoscopic cholecystectomy; where nurses dominated the assistance. This is due to the fact that laparoscopy is being performed by a single surgeon in the hospital and assisted with a group of trained nurses. Nurses were the leading assistants in every urologic and orthopedics procedures. The most possible justification could be due to the reason that all residents were general surgery residents in the study period and may be interested to attend general surgery procedures.

In the general surgery unit, senior residents were dominantly involved in the assistance of rare and difficult cases. This may be due to the interest of residents' to be exposed for such rare and difficult cases to increase their learning experience.

Discussion

This study witnessed that the private wing set up in a public hospital has increased access to surgical care, as the number of procedure performed within the study period by general surgeons was comparable to the number of elective general surgery cases performed in the regular ward during the same study period reported by the same Author [12]. This shows the efficiency of the private wing has achieved the purposes of improved service availability [7, 9, 10].

Our study revealed that Cholelithiasis was the leading cause of admission with exceptionally high number compared to previous report from the same hospital, and other reports in the country and in Sub Saharan Africa [13-18].

BPH is the leading cause of urologic admission in this study and in similar studies done in regular services at SPHMMC, Tikur Anbesa and Delta hospital in Nigeria [12, 15,19].

The number of procedure performed in the private wing were an opportunity to increase the volume of surgical exposure of residents at different level which provides a meaningful educational experience [20].

The high percentage of procedure assisted by nurses showed that the potential to accommodate more residents. The different category of procedure performed in the private wing allowed the different level of residents to participate in assisting and gaining knowledge directly from the most experienced surgeon. This opportunity was especially crucial as residency intake was also increased from time to time to build the surgical work force of the country and the simultaneous opening of different sub-specialty programs leaving little or no chance for the general surgery resident to do [21-23].

Most importantly, the huge number of surgery cases in the private wing can bridge the gap by maintaining the motivated teaching/faculty mentors, performing procedure out of the working hours and mentoring residents in the same setup, increasing their volume of exposure [21].

Conclusion and recommendations

Huge number of procedure performed during the study period. Cholelithiasis, thyroid pathologies and hernia were the leading admissions in the private wing similar to the services in the regular counter parts. BPH remain the leading cause of urologic admission.

This study proved that the huge number and category of procedures performed in the private wing has opened a window of

opportunity to resident training, by increasing the volume of exposure to different types of procedures. The junior residents were the leading assistant for common general surgery procedures increasing their exposure as a primary assistant; while the senior residents were the leading assistant in complicated or rare procedures closing their gaps of limited exposure in the regular service.

In conclusion the provision of surgical services using the private wing model in public facilities helps increase the surgical volume, improves timely access to common surgical conditions and affords additional opportunity and skills development for surgical residents in training.

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