Cost Containment in Eye Care

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Voluntary eye hospitals committed to serving the community must understand the reality of increasing costs due to inflation, advancements in medical technology and changing expectations of staff and patients. However, these costs are often not matched by the patients' paying capacity. While increasing income, through increased user fees or donations are financial options which will be considered, this article will focus on cost containment.

Conditions for Effective Cost Control

Though cost containment is influenced by the health care systems that exist, certain organisational conditions have to be in place for them to be effective. The leadership has a strong role in this. The organisational leadership must be within the eye care system and be available to the organisation whenever required (as opposed to hospitals run by Government or Religious Organisations wherein the leadership is often outside the hospital system and not readily available). Delayed or inappropriate decisions tend to increase costs and inefficiency. It is also important that the leadership promotes a culture of cost consciousness.

Standard clinical and administrative protocols are necessary to institute and review cost containment measures without affecting quality, productivity or patient satisfaction. The first table lists the various factors that influence costs.

Variable Costs

Variable costs are mostly made up of clinical consumables, stationary, etc. Cost savings in this area require good inventory management and group purchasing for better prices. Good materials management, to reduce wastage through storage and pilferage, will again reduce the variable costs.

However, reviewing the clinical protocols and eliminating investigations, procedures and medications that do not contribute to quality, productivity, good outcome or patient comfort can result in greater reductions in variable costs. Setting up a good clinical information system is necessary for making such evidence based decisions.

Fixed Costs[2]

In health care organisations, the fixed cost could account for as much as 70% of the total recurring expenditure and hence deserves the most attention. Investment in infrastructure, size of the facility and staffing are the major determinants of fixed costs. While leasing out a part of the building, reducing staff or better negotiations of maintenance or salary contracts could be some of the options to reduce fixed costs, the focus in cost containment must be more on reducing the 'fixed cost component within the overall unit cost' of service through optimum utilisation of the infrastructure. This focus will lead to continuous efficiency improvements resulting in sustained cost containment. Seasonal variations in patient load affect capacity utilisation and thereby affect the costs. Salaries constitute the major proportion of fixed

Bilateral cataract in a young woman
Photo: Murray McGavin

Factors Contributing to Cost Containment[1]

Parameters	Factors Affecting Cost Containment
1. Leadership and Attitude	• Concerned about cost • Instituting a culture of cost consciousness • Being available for timely decisions • Viewing the patient as a partner in the healing process
2. Increasing the uptake of eye care services	• Forecasting and planning for expected workload • Utilisation of community resources
3. Human Resources	• Job description • Workload variations versus manpower planning • Recruitment and selection • Employee retention
4. Building and Infrastructure	• Appropriate size and design • Appropriate building technology and material • Flexible and functional building design • Durability and ease of maintenance
5. Supplies, Instruments & Equipment	• Group purchasing • Inventory management • Models easy to repair and service • Appropriate technology • Preventive maintenance
6. Systems & Procedures	• Standardisation • Periodic review to eliminate unnecessary systems

Definitions Relating to Cost

Capital Cost:	Cost of land, building, major equipment, etc.
Fixed Cost:	Costs that have to be incurred regardless of the level of activity. e.g., salaries, interest, depreciation, annual maintenance contracts, etc.
Variable Cost:	Costs that vary directly with the level of activity. e.g., cost of sutures, IOLs, medicines, etc.
Recurring Cost:	Sum of Fixed and Variable costs
Unit Cost:	Fixed cost + Variable cost per Unit of service
Marginal Cost:	Additional cost in an ongoing production/service set up to produce one more Unit of service or commodity.

Note: Several cost items tend to have, within them, elements of fixed and variable costs. e.g., electricity, housekeeping.

Unit Cost of Cataract Surgery

$$\frac{\text{Fixed cost apportioned to cataract surgery}}{\text{No. of cataract surgeries}} + \text{Consumables cost per surgery}$$

costs. Thus, the staff utilisation pattern, especially that of the ophthalmologists, has a direct impact on costs. The factor that has the most impact on 'unit fixed cost' is productivity. The simplified exercise,[3] shown in the box below, illustrates that as productivity increases to match capacity, the unit fixed cost reduces to a fourth and the total cost comes down to almost a third.

Cost Containment Strategies

- ***Daily Planning:*** In addition to long range or annual planning it is essential to plan for the next day and ensure that all resources/supplies are organised and all concerned staff are informed. The patient load, availability of staff and requirement of supplies can be determined with a high level of reliability the previous day. Emergency procurements and delays in service delivery increase the cost.
- ***Clinical Process:*** A patient protocol based on an integrated path for diagnosis, investigations, admission, surgery and follow-up would substantially reduce delays and associated costs.
- ***Personnel Costs:*** Hospital is a labour intensive organisation. Staff salaries constitute a major percentage of the total operating expenditure. Hence, it is important that salary packages are designed keeping this in view. Incentives linked to surgeries adversely affect the cost reductions that come from increased productivity.
- ***Work Culture:*** Developing a positive work culture reduces bureaucracy, promotes teamwork and a commitment to patient care. All of these have a very direct impact on costs.
- ***Local Production of Consumables:***[4] Many housekeeping supplies, bandages, cotton pads, swabs, etc. can be produced locally (if less expensive than buying them). This also gives an opportunity to involve the clinical staff when there is no patient care.
- ***Managing Seasonal Variations:***[5] Productivity is governed by the patient load, which tends to have seasonal and also daily fluctuations. It is necessary to find ways of accommodating the demand and, when this is not possible, activities like staff training, painting or vacation time for staff can be scheduled accordingly.
- ***Appropriate Use of Human Resources:*** Since salaries are a major element of fixed costs, these require special attention. The ophthalmologist's time is both expensive and in limited supply. Delegating routine, repetitive and measurement related clinical tasks to well trained ophthalmic technicians can significantly increase the productivity of the ophthalmologists.
- ***Community Participation in Outreach:*** One resource that is hardly used is the community. In many programmes, the hospital staff does the publicity, arranges a campsite, necessary furniture, etc. All these activities can be better carried out by the community, often at no cost to the hospital. When the community comes in as an equal partner, the camp attendance also goes up.
- ***Other Strategies:*** These include developing in-house competence for instruments/equipment maintenance, instituting appropriate recycling systems for waste products, regular review of cost data and administrative systems, such as daily review of revenues and expenditures, control over expenses through formal procedures for approval, and independent audit of all internal records.

Role of Hospital Administrator

The above principles and strategies need to be translated into action and systems appropriate to local settings and day-to-day practice. These systems require periodic

Consider an Eye Hospital with the following Resources, Performance and Expenditures:

A. Resources:

Facilities::			Staff:		
Beds	:	50	Ophthalmologists	:	2
Equipped Operating Theatre	:	1	Paramedics	:	9
IOL surgery sets	:	2	Housekeeping staff	:	6
			Office & Security staff	:	6
Capacity of the Above Resource	:				
• From bed capacity perspective	:	4,000 surgeries assuming 80 surgeries per bed (average stay of 3 days)			
• From the staff perspective	:	2,000 surgeries, assuming 1,000 surgeries per surgeon			

B. Annual Performance:

Out-patient visits	:	20,000	Cataract/IOL Surgery	:	500
Admissions	:	600	Other Surgeries	:	50

C. Annual Expenditure (All figures in US$):

Fixed Costs:			Variable Costs (for cataract surgery only):		
Salaries	:	35,200	Sutures, Drugs, etc.	:	2,660
Electricity	:	1,330	IOLs (450 @ $6.44)	:	2,700
Maintenance	:	1,250	Instruments replacement	:	750
Other fixed costs	:	2,220	Stationery	:	230
			Other variable costs	:	660
Total Fixed Costs	**:**	**40,000**	**Total Variable Costs**	**:**	**7,000**

D. Unit Cost per Cataract Surgery (All figures in US$):

Assuming that 80% of fixed costs are incurred in providing cataract surgery, cost per surgery for the current output, for 1,000 surgeries and at capacity of 2,000 surgeries will workout as follows:

Number of Cataract Surgeries	**Total Fixed Cost** (US$)	**Unit Fixed Cost** (US$)	**Unit Variable Cost** (US$)	**Total Cost** (US$)
500	32,000	64	14	78
1000	32,000	32	14	46
2000	32,000	16	14	30

review and changes, arising out of new developments, changes in the infrastructure, staffing or patient complaints or suggestions. It requires a person who can pay constant attention and be responsible – one of the roles of the hospital administrator or manager. For this role to be effective, it is necessary that this person is trained in hospital management and, ideally, does not have a dual clinical role. However, the person needs to work closely with clinical staff to reduce the length of stay, eliminate unnecessary investigations, drugs and therapies, and bring about economies in the use of supplies, facilities and human resources. He or she has to devote enough time and attention in reviewing and improving systems and procedures, such as planning for services and facilities, and scheduling of staff and patients for optimum utilisation of resources to enable cost containment.

Conclusion

Cost containment is a continuous organisational process. A narrow and too simple approach will not necessarily be of benefit. It is a complex interaction of technical, organisational and human factors, which needs committed leadership, good attitudes of staff and a system approach. Higher expenses per surgery do not necessarily mean higher quality. Hospitals that provide quality service, and in large volume relative to their size, tend to have lower unit costs through better systems. On the whole, cost containment should be viewed as one of the strategies to enhance efficiency in eye care delivery.

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Abstract

Rates of Hospital Admissions for Primary Angle Closure Glaucoma among Chinese, Malays and Indians in Singapore

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Aim:

To estimate the rates of hospital admissions for primary angle closure glaucoma (PACG) in Chinese, Malays and Indians in Singapore.

Methods:

A population-wide hospital discharge database in Singapore was used to identify all hospital admissions with a primary discharge diagnosis of PACG (International Classification of Disease-CM code: 365.2). The Singapore census was used for denominator data.

Results:

Between 1993 and 1997 there were 894 hospital admissions for PACG. The mean annual rate of PACG admissions was 11.1 per 100 000 (95% confidence interval (CI), 10.4, 11.8) among people aged 30 years and over. The annual rate was highest for Chinese (age and sex adjusted rate: 12.2 per 100 000), which was twice that of Malays (6.0 per 100 000) and Indians (6.3 per 100 000). Females had two times higher rates than males in all three races (age adjusted relative risk: 2.0, 95% CI: 1.7, 2.3).

Conclusion:

Malay and Indian people had identical rates of hospital admissions for PACG, which were only half the rates compared with Chinese.

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