Designing a Total Knee Replacement Price Package for EHCC Hospital- A Cost Breakup & Pricing of the Service

Internship Training
at
Eternal Heart Care Centre, Jaipur

By
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Under the guidance of
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Post Graduate Diploma in Hospital & Health Management
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Institute of Health Management Research
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2014

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TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr.Snehashree Chavan** student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone dissertation at Eternal Heart Care Centre from February 2014 to April 2014.

The candidate has successfully carried out the study designated to her during dissertation and her approach to the study has been sincere, scientific and analytical.

The internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

Dr. Ashok Kaushik

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IIHMR, Jaipur

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"Where good care leads...good health follows"

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May 17th, 2014

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Dr. Snehashree Chavan, student of Institute of Health Management Research (IIHMR), Jaipur has successfully completed her internship from February,2014 to April, 2014 in the department of Quality Management of Eternal Heart Care Centre (EHCC), Jaipur, under the able guidance of Dr.Vikram Singh Chouhan (Head- Medical Operations) & Dr. Swati Guglani (Deputy Medical Superintendent).

Apart from the general understanding of the hospital, she has worked on the following aspects of the hospital:

1. Documentation of Hospital Policies & SOP formulation
2. Facilitating the NABH application procedure
3. Designing packages for orthopedic joint replacement procedures

During this period, she was found to be a hardworking, pleasant, & sincere student. She has completed her project entirely to the satisfaction of the hospital's management.

We wish her all the best for her future endeavors.

Amitav Naresh
Head -HR

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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled '**Designing a Total Knee Replacement Price Package for Ehcc Hospital- a Cost Breakup & Pricing of the Service'** and submitted by **'Dr.Snehashree Chavan'**. Under the supervision of **Dr. Monika Chaudhary** for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from February 2014 to April 2014 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

ACKNOWLEDGEMENT

The success of any task would be incomplete without the expression of appreciation of gratitude to the people who made it possible .Though words fall short to express the sincere gratitude towards everyone who helped directly or indirectly in my endeavor. It is a pleasant aspect that I now have the opportunity to express my gratitude for all of them. This is a humble attempt in this regard. I would like to render my sincere thanks to **Eternal Heart Care Centre (EHCC) Hospital**, Jaipur for providing me with such unique learning experience.

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ABBREVIATIONS

SWOT- Strengths Weaknesses Opportunities & Threats

TKR- Total Knee Replacement

IPD- Inpatient Department

OPD- Outpatient Department

CCU- Cardic care unit

CBC- Complete blood count

U/L- Unilateral

B/L- Bilateral

EHCC- Eternal Heart Care Centre

LIST OF TABLES

DISSERTATION REPORT

2.1 INTRODUCTION:

A changing healthcare trend in India has been evident for quite some time now. The increasing burden of non-communicable diseases has made the healthcare experts and organizations shift their lens of focus on these emerging trends. Lately in this pattern, degenerative diseases have been evident in making a substantial contribution. These conditions have been identified in the elderly as well as the middle aged populations in urban as well as rural India and are responsible for restricting day to day activities & thereby deteriorating the quality of life. According to the scientific studies, a major contributor to such conditions has been identified as joint degenerative condition commonly known as osteoarthritis.

Osteoarthritis has been discovered the most common form of arthritis, affecting millions of people around the world. Often called wear-and-tear arthritis, osteoarthritis occurs when the protective cartilage on the ends of your bones wears down over time. While osteoarthritis can damage any joint in your body, the disorder most commonly affects joints in your knees, hips, neck & back.

GlobalData estimates that the global OA therapeutics market was worth $4.4 billion in 2010 and forecasts it to grow at a compound annual growth rate (CAGR) of 3.8% to reach $5.9 billion by 2018.

The major chunk of these osteoarthritis cases which go untreated by medications have to ultimately select joint replacement surgeries as a last and the most suitable resort.

Joint replacement surgeries are generally planned and can be timed as per the patient's schedule.

These reasons have made the joint replacement surgeries as one of the core specialties of the orthopedic department, to be offered by an emerging multispecialty hospital in a city like Jaipur to its local population as well as being tourism centric to the global population owing to the bright opportunities present in the medical tourism industry.

2.2 REVIEW OF LITERATURE:

Payment reform options: episode payment is a good place to start.

Mechanic RE[1], Altman SH.

New strategies to control U.S. health spending growth are urgently needed. Although provider payment cuts are likely, cutting fee-for-service (FFS) payments will hurt quality and access. A more sensible approach would be to restructure the delivery system into organized networks of providers delivering reliable, evidence-based care. But restructuring will not occur without payment policy reform. Four policy options are commonly cited: recalibrating FFS, instituting pay-for-performance, creating episode-based payments, and adopting global payments. We argue that episode payments are the most immediately viable approach, and we recommend that payment reforms precede any payment reductions so that new delivery models can gain traction.

Costing hospital surgery services: the method matters.

Accurate hospital costs are required for policy-makers, hospital managers and clinicians to improve efficiency and transparency. However, different methods are used to allocate direct costs, and their agreement is poorly understood. The aim of this study was to assess the agreement between bottom-up and top-down unit costs of a large sample of surgical operations in a French tertiary centre.

Ways To Pay For Health Care

Providers would be better able to reduce costs and improve quality under episode-of-care and comprehensive care payment systems.
by Harold D. Miller
Payment systems for health care today are based on rewarding volume, not value for the money spent. Two proposed methods of payment, "episode-of-care payment" and "comprehensive care payment" (condition-adjusted capitation), could facilitate higher quality and lower cost by avoiding the problems of both fee-for-service payment and traditional capitation. The most appropriate payment systems for different types of patient conditions and some methods of addressing design and implementation issues are discussed. Although the new payment systems are desirable, many providers are not organized to accept or use them, so transitional approaches such as "virtual bundling," described in this paper, will be needed. [Health Aff (Millwood). 2009;28(5):1418–28; 10.1377/hlthaff.28.5 .1418]

2.3 NEED OF THE STUDY:

In the present healthcare industry situations, offering a comprehensive surgery package is beneficial to both the customers as well as the organization.

Packages make the offerings more attractive to the customers as it can be determined what amount one will have to pay for a particular procedure, what options are available in the room type according to individual's affordability & will also limit unnecessary care, encourages coordination across providers, and potentially improves quality.

From the organization's perspective, it ensures optimum utilization of resources in terms of man, material and infrastructure. More specifically it affects the admission & the billing processes and ultimately affects the patient satisfaction. Also bulk purchasing of medicines and consumables according to package specification decreases the overall cost & improves the profit margin. On the other hand, the decreased cost will aid a better price offering as compared in comparison to competitors thereby attracting more customers.

Furthermore, it is a basic requirement of aligning the offering of a newly functional service under a single component, for better cost estimation and better structuring of price along with profit calculation. It may also have an impact upon the marketing strategies.

The above reasons developed the need of designing of TKR packages.

OBJECTIVES:

- To design a comprehensive Total Knee Replacement package for unilateral as well as bilateral procedures
- To design packages according to the categories of room
- To perform cost breakup analysis & calculating the unit cost
- To aid in pricing

METHODOLOGY:

Study Setting: Eternal Heart Care Centre, Jaipur.

Study Period: Feb to April 30th 2014

Study Design: This study is an exploratory study as it has been done to test concepts before they are put in marketplace.

Type of Analysis: Quantitative Analysis

Tools of Data collection

Primary Data Collection:

- Discussion with experts of the hospital
- Review of financial records
- Review of records of central stores, pharmacy & laboratory
- Package data from competitive hospitals

Secondary data collection:
From various articles of journals, from books & websites of hospitals & other published sources related to designing of packages, cost breakup analysis & cost optimization in hospitals.

DESIGNING OF PACKAGES & COST BREAKUP ANALYSIS

DESIGNING OF PACKAGES

There should be bundling of medical facilities (like diagnostics & investigations, surgical procedure, IPD charges) in one package which helps in making the service more attractive to consumers as it can be determined what amount one will have to pay for a particular surgery or procedure.

ADVANTAGES OF PACKAGE SYSTEM:

The following are the advantages:

- From patient point of view:
  1) Patient has more choice in choosing different packages according to the class
  2) Patient after depositing money becomes free from worries and tension about procuring medicine for the treatment
  3) It also reduces the expenses incurred by the patients on the medicine and consumables, as supply would be procured in the bulk by the hospital from the supplier through rate contract.
  4) Bundled payment discourages unnecessary care, encourages coordination across providers, and potentially improves quality.

- From hospital point of view:
  1) For a hospital, it is a source of income as now more number of patients can be treated in the same set up
  2) This would also mean optimum utilization of resources in terms of man, material and infrastructure.
  3) This would speed up billing process and increase accountability on their behalf.
  4) It makes product more attractive to corporate, state agencies, TPA's and insurance providers

CONCEPT OF DESIGNING OF PACKAGES:

- Aggressive marketing research is required for designing various packages.
- Prices will be decided on the basis of activity based costing and competitive pricing
- Comparative study of EHCC hospital with other competitors for designing packages

DEVELOPMENT OF U/L & B/L TOTAL KNEE REPLACEMENT PACKAGES:

Comprehensive packages were developed for Total Knee Replacement procedure for the following categories of rooms: General ward, Twin sharing, Semi- Deluxe room, Deluxe room

In order to find out information about OT charges, medicine and consumable charges, lab & diagnostic charges, patient bed charges, and consultation charges of the orthopedic, physiotherapist & dietician, informal interviews with the following individuals was conducted:

- Orthopedic surgeon,
- Head- medical operations,
- Billing manager,
- Pharmacy manager,
- HOD of laboratory services

These packages were developed for a U/L TKR considering stay of a patient for a total duration of 7 days, of which 6 days are spend in the ward & the remaining 1 day is spend in the critical care unit(optional)

On the other hand, for a B/L TKR the total stay of patient is for 10days in the hospital, of which 9days are spend in the ward & 1 day is spend in the critical care unit(optional)

These packages will include following broad components:

Table 1.1: Components of Package

Sr. No.	
1.	Patient bed * in ward
	Patient bed * in critical care
2.	Cost of Medicines & consumables
3.	Cost of Lab & diagnostics
4.	Cost of Surgery
5.	Consultation charges
6.	Physiotherapy charges
7.	Dietician charges

In the above mentioned categories,

1. Patient bed charges in wards includes,
- Electricity charges
- Housekeeping charges
- Food charges: includes Breakfast + Lunch + Dinner
- RMO & Nurses charges
- Laundry charges

Note:

1) The above mentioned inclusion criteria is for a general ward patient.
2) For other categories of rooms i.e. twin sharing, semi-deluxe & deluxe there would be extra charges owing to added facilities such as room interiors, separate bathroom facility, & other luxury additions in the top categories, etc

2. Medicines and consumables include the following items along with the quantity mentioned for unilateral as well as bilateral TKR & their respective costs

Table1. 2: Medicines and consumables cost & quantity required in a routine TKR procedure

Item Name	Cost	Qty. (TKR-U/L)	Qty. (TKR-B/L)	Final Cost(tkr-u/l)	Final Cost (tkr-b/l)
O Drape	641	1	2	641	1282
Pulse Lavage	5700	1	1	5700	5700
DISPOSABLE GOWN	396	5	5	1980	1980
IOBAN 6650	845	1	2	845	1690
IOBAN 6640	640			0	0
NS 3 Ltr.	230	3	3	690	690
Romovac Set	286	1	2	286	572
Surgical Blade	3.5	4	4	14	14
FOLEYS CATHETER 14	120	1	1	120	120
Urosac Bag	90	1	1	90	90
Ethibond no. 5 W4846	1270	1	1	1270	1270
SKIN STAPLER	771	1	2	771	1542
VANCOCIN	347.1	8	8	2777	2777

CP 5000MG					
TAXIM 1GM	30.67	9	9	276	276
GENTICYN 80MG INJ	8.76	5	5	44	44
CLEXANE 40MG	461.36	5	5	2307	2307
RL 500ML	53.25	8	8	426	426
NS 500ML	24.21	8	8	194	194
Ropivacaine Injection		1	2	0	0
ANETOL 100ML	216	12	12	2592	2592
JUSTIN AQ 1ML	8			0	0
PANSAC INJ	50.33	5	5	252	252
SUPRIDOL 2ML	25	3	3	75	75
CEFTUM 500 MG	86.25	6	6	518	518
Flexon Tablet	0.95	20	20	19	19
Pantocid Tablet 40mg	7.5	3	3	23	23
Limcee Tablet	0.97	9	9	9	9
Chymoral Forte Tablet	12.15	42	42	510	510
CCM TAB	177.75	5	5	889	889
IV Cannula	110	4	4	440	440
Emeset Injection 2ml	15.48	4	4	62	62
NEOROF 50ML	416	2	2	832	832
ARTACIL 10ML	441	1	1	441	441
Fentanyl Injection 10ml	157	1	1	157	157
MYSTIGMIN 5ML	21.2	1	1	21	21
PYROLATE INJ	16.2	4	4	65	65
Isoflurane 25ml	281.5	1	1	282	282
SPINAL NEEDLE 25 BD	75	1	1	75	75
ANAWIN HEAVY 4ML	28	1	1	28	28
Epidural Spinal Kit	2090	1	1	2090	2090

SYRINGE 10ML	7	30	30	210	210
SYRINGE 5ML	4.9			0	0
G DRESS - 30	66	15	30	990	1980
				29008	32541

Note:

1. Above list of medicines & consumables is for a **routine case** with an **average use** of various items. It differs in special cases from patient to patient.
2. The above mentioned list is an approximate measure of medicines & consumables which has been obtained after thorough discussion with the orthopedic surgeon & may be subject to change with changing situations.

Therefore, the total cost of the medicines & consumables for U/L TKR = **Rs29,008** & for

B/L TKR= **Rs32,541**

This total cost has been averaged out over the number of days of stay i.e. 7 days assuming distribution throughout the period of service e.g. total cost /7 which gives the per day cost which is as follows

Table 1.3: Per day cost of medicines & consumables per patient

	TKR	
	U/L	B/L
cost of items averaged out for no.of days of stay	4144	3254
ROUNDED UP VALUE	4150	3260

Note:

These remain same irrespective of the stay of patient in different categories of rooms.

3. Laboratory & diagnostics include the following tests for unilateral as well as bilateral TKR:

Table 1.4: Type of Investigations & its quantity required in a routine U/L & B/L TKR procedure

Investigation Name	Quantity(TKR) U/L	Quantity (TKR) B/L
ELECTROLYTES (NA, K, CI) - SERUM	1	1
LFT (LIVER FUNCTION TEST)	1	1
RENAL PROFILE TEST	1	1
2D ECHO SCREENING	1	1
ECG	1	1
ESR (ERYTHROCYTE SEDIMENTATION RATE)	1	1
CBC (COMPLETE BLOOD COUNT)	2	2
HIVI&II,HCV,HBSAG(PRE-OP)	1	1
X RAY CHEST PA VIEW	1	1
X RAY BOTH KNEE ALL VIEWS	2	4

Note:

1. Above list of investigations is for a **routine case** with an **average use** of various items. It differs in special cases from patient to patient.
2. The above mentioned list is an approximate measure of investigations which has been obtained after thorough discussion with the orthopedic surgeon & may be subject to change with changing situations.
3. These investigations are the total number including both preoperative and postoperative investigations.

The following table shows unit cost as well as total cost of the investigations in each ward respect to U/L or B/L procedure.

Table1.5: Total Cost of Investigations according to the category of room

Investigation Name	GEN. WARD I(Unit cost)	Final cost GW U/L	Final cost GW B/L	TWIN SHRING (Unit cost	Final cost TWIN U/L	Final cost TWIN B/L	SEMI-DELUXE ROOM(Unit cost	Final cost SD U/L	Final cost SD B/L	DELUXE ROOM (Unit cost	Final cost DEL U/L	Final cost DEL B/L
ELECTROLYTES (NA, K, CI) – SERUM	315	315	315	350	350	350	473	473	473	525	525	525
LFT (LIVER FUNCTION TEST)	630	630	630	700	700	700	945	945	945	1050	1050	1050
RENAL PROFILE TEST	540	540	540	600	600	600	810	810	810	900	900	900
2D ECHO SCREENING	500	500	500	625	625	625	781	781	781	977	977	977
ECG	100	100	100	125	125	125	156	156	156	195	195	195
ESR (ERYTHROCYTE SEDIMENTATION RATE)	72	72	72	80	80	80	108	108	108	120	120	120
CBC (COMPLETE BLOOD COUNT)	225	450	450	250	500	500	338	676	676	375	750	750
HIVI&II, HCV,HBSAG(PRE-OP)	1395	1395	1395	1550	1550	1550	2093	2093	2093	2325	2325	2325
X RAY CHEST PA VIEW	225	225	225	250	250	250	338	338	338	375	375	375
X RAY BOTH KNEE ALL VIEWS	675	1350	2700	750	1500	3000	1013	2026	4052	1125	2250	4500
Total	**5307**	**5577**	**6927**	**5980**	**6280**	**7780**	**8001**	**8406**	**10432**	**9017**	**9467**	**11717**

The total cost of investigations with respect to the categories of room has been averaged out over the number of days of stay i.e. 7 days assuming distribution of cost throughout the period of service e.g. total cost /7 which gives the per day investigation cost per case which is as follows

Table1.6: Per day cost of investigations per patient according to the categories for U/L & B/L TKR

	GW/ TKR		TWIN SHARING/ TKR		SEMI DELUXE/TKR		DELUXE/TKR	
	U/L	B/L	U/L	B/L	U/L	B/L	U/L	B/L
investigation cost per day	797	693	897	778	1201	1043	1352	1172
ROUND OFF VALUE	800	700	900	780	1200	1050	1360	1180

4. Surgery cost calculation according to the hospital policy is done in the following method.

Keeping the surgeon charges as the base

Cost of surgery = Surgeon charges + OT utilization charges + Anesthesia charges

Where, OT utilization charges = 65 % of surgeon charges
& Anesthesia charges = 35% of surgeon charges

At present hospital is offering Rs 15000 as the surgeon charges for performing each TKR procedure.

Therefore,

Cost of per TKR surgery = 15000 + 65% of 15000 + 35% of 15000

= 15000 + 9750 + 5250

= **Rs 30,000**

5. OTHERS:

- Consultation charges are Rs300 for the General ward,
  Rs400 for Twin sharing room
  Rs500 for Semi-Deluxe & Deluxe room
- Physiotherapy charges are Rs 150 per day for all categories of rooms which includes 2 visits. EHCC is providing physiotherapy for 7days, in case of U/L TKR & 10days in case of B/L TKR.
  Therefore, the total physiotherapy charges in U/L TKR irrespective of the room category are Rs1050 & that for B/L TKR are Rs1500.
- Dietician charges are Rs150 per visit per day for all categories of rooms & would be for 7days for U/L TKR & 10days for B/L TKR.
  Therefore, the total dietician charges would be Rs1050 for U/L TKR & Rs1500 for B/L TKR
- The implant cost depends upon the type of the implant used. There is a wide range of implants available in the market & selection of this depends solely upon the orthopedic surgeon in consultation with the patient as per his affordability. This may vary from case to case; hence it would not be included in the package cost.
- Simultaneously, there may be additional costs differing from case to case owing to blood transfusions, other investigations like CT, MRI, etc or costs occurring due to usage of high end medicines & consumables. Such costs are exclusions in the basic package & would be charged over & above.

Table1.7: Calculation of package cost for General ward & Twin sharing rooms for U/L & B/L TKR

Package	Description	Per day charges for U/L	Per day charges for B/L	GW		Per day charges for U/L	Per day charges for B/L	Twin Sharing	
				U/L	B/L			U/L	B/L
Patient bed * in ward	Per day	1200	1200	7200	10800	3000	3000	18000	27000
in critical care	per day	5000	5000	5000	5000	5000	5000	5000	5000
Lab & diagnostic	Pre-op & Post -op (averaged out for per day)	800	700	5600	6300	900	780	6300	7800
Cost of Surgery	Hrs (6hrs approx.)			30000	30000			30000	30000
Consultation	Per consultation(2 per day)	300	300	3600	5400	400	400	4800	7200
Physiotherapy	Per day(2 visits)	150	150	1050	1500	150	150	1050	1500
Dietician	per day(1 visit)	150	150	1050	1500	150	150	1050	1500
	Total Package amount			**53500**	**60500**			**66200**	**80000**

Table1.8: Calculation of package cost for Semi-Deluxe & Deluxe rooms for U/L & B/L TKR

Package	Description	Per day charges for U/L	Per day charges for B/L	Semi deluxe		Per day charges for U/L	Per day charges for B/L	Deluxe	
				U/L	B/L			U/L	B/L
Patient bed * in ward	Per day	4500	4500	27000	40500	6000	6000	36000	54000
in critical care	per day	5000	5000	5000	5000	5000	5000	5000	5000
Lab & diagnostic	Pre-op & Post - op (averaged out for per day)	1200	1050	8400	10500	1360	1180	9520	11800
Cost of Surgery	Hrs (6hrs approx.)			30000	30000			30000	30000
Consultation	Per consultation (2 per day)	500	500	6000	9000	500	500	6000	9000
Physiotherapy	Per day(2 visits)	150	150	1050	1500	150	150	1050	1500
Dietician	per day(1 visit)	150	150	1050	1500	150	150	1050	1500
	Total Package amount			**78500**	**98000**			**88620**	**112800**

Note:

Cost of Medicines & Consumables has not been accounted in the above calculations & would be considered as exclusion in the package according to the hospital policy.

From the above calculations, the total package cost for per U/L TKR in the general ward amounts to be **Rs 53,500.** This is the base cost for performing a U/L TKR in the general ward of EHCC hospital.

Cost calculation is an essential component in designing packages when there is a new product or service launch. This is one of the simplest methods used in order to estimate the offering price.

This strategy is commonly termed as Cost based pricing.

On the basis for revenue oriented objective, cost oriented pricing refers to setting price largely on the bases of costs. Some factors other than actual costs are also born by customer thereby affecting his evaluation and choice of provider, such as:

Time costs: how much time is required

Search costs: Cost to search the hospital

Psychic cost: depends on the thinking and behavioral factors of the patient

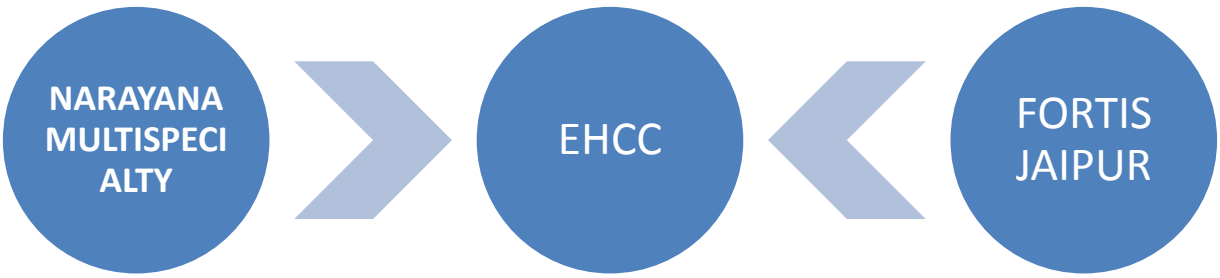
Simultaneously, TKR surgery packages offered by other hospitals such as Fortis Jaipur & Narayana Multispecialty for the basic category i.e. the General ward were assessed in order to estimate the market price which was as follows:

Narayana Multispecialty: **Rs 48,000**

Fortis Jaipur: **Rs 60,000**

This information was necessary while formulating the final price of the offering.

To achieve a competitive benefit, requirement of the hospital was to keep the package price between the competitors along with the maintenance of the quality offered.



This strategy is commonly known as Competitive pricing

When a hospital sets its prices chiefly on the basis of what competitors are charging, their pricing policy is described as Competitive pricing.

Thus keeping these two pricing strategies in mind, i.e. **Cost based pricing** & **Competitive pricing** the hospital management finalized their **profit margin at 10%** mark up point.

According to this profit margin, the following total package prices have been derived for U/L & B/L TKR procedures with respect to the room categories

Table 1.9: Total Package Prices

Description	**GW**		**Twin Sharing**		**Semi deluxe**		**Deluxe**	
	U/L	**B/L**	**U/L**	**B/L**	U/L	B/L	U/L	B/L
Total Package Cost	53500	60500	66200	80000	78500	98000	88620	112800
Profit Margin 10%	5350	6050	6620	8000	7850	9800	8862	11280
Total Package price	**58850**	**66550**	**72820**	**88000**	**86350**	**107800**	**97482**	**124080**

CONCLUSION

Cost analysis in a hospital is an extensive area of study. There are numerous factors involved in building up of the basic cost of a product or service. Identification of these factors is a crucial phenomenon. Of these factors, certain factors are such that they cannot be controlled or kept under a check. On the other hand, some are such that focusing on them can curb unnecessary expenditures. Distinguishing such factors and focusing on their entire process flow will help in reducing wastage and optimize utilization of resources with an added return in the profits. This will also enhance the quality of service delivered and thereby affect the patient satisfaction.

Cost analysis in a hospital is also an important component in designing of an offering as it gives you a fair idea about what would be your profit margins and what would be the best price to offer, in such a manner that it is beneficial to the hospital as well as to the patient.

RECOMMENDATIONS

The following interventional strategies have been recommended for enhancing cost optimization:

- The expenditure on drugs and consumables needs to be checked by looking for some alternate vendors so that the overall cost of the surgery can be reduced.
- **Reduction in stay** in wards by continuous Quality Improvement (both Pre and Post procedure) and effective Team Management.
- **Benchmarking costs and operations**: Benchmarking with peers is also an important tool for tracking progress of initiatives. Benchmarking not only provides performance context, but also can aid discovery of improvement opportunityand help in identifying the right performance targets
- **Managing Accountability:** Driving—and maintaining—successes requires strong systems of accountability. To this end, organizations need the right organizational culture, incentives, role definitions, and performance metrics in place
- **Material standardization** helps in reduction of costs to a great extend. Not only standardization of medicines and consumables be done but standardization of each and every item involved in patient care should be achieved

LIMITATIONS OF THE STUDY

- Utility costs such as electricity consumption, etc could not be analyzed as hospital has been functional only for 6 months till now due to which there was unavailability of this data.
- Operation theatre utilization could not be calculated using direct cost & indirect cost method, as there was lack of permission for the same from the organization's management.
- The study was conducted for a short duration restricted to s specific time period and may vary according to the situational changes.
- Since the study was undertaken before the initiation of the specialty, the costs beard by respective heads could not be verified practically with the patient bills

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ANNEXURES