

Study of Incentives being provided by Medical companies to retailers

TD 390 Report
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1. Introduction

In India, over 80% of health financing is borne by patients [1]. Hence, the cost of treatment is a crucial determinant of the health of citizens. Two important parts of patient's treatment are drugs & disposable surgical items. Six surveys conducted during October 2004 to January 2005 in five states of India using the World Health Organization and Health Action International methodology report that the governments of different States in India procure medicines at a very reasonable price, but the availability of medicines in public sector is very low. Hence, many patients have no option but to go to the private sector. In private sector there is better availability of drugs and surgical supplies but at a higher price. While private sector retail prices are expected to be higher than public sector procurement prices of drugs and surgical supplies, the price differences observed in these 2 sectors are very high [2].

The World Health Organization defines drug promotion as all informational and persuasive activities by manufacturers and distributors, the effect of which is to influence the prescription, supply, purchase or use of medicinal drugs [3]. Pharmaceutical companies promote their sales by offering incentives to doctors. These incentives range from jewellery to electronic items and even automobiles or a paid foreign tour [4]. In India, many patients are too poor or too busy to see a doctor and often rely on local pharmacists for medical advice. As a result, drugs are routinely sold over the counter without any prescription [5]. Hence, pharmaceutical companies offer various kinds of incentives to pharmacists too.

We found that these incentives are in the form of profit margins:

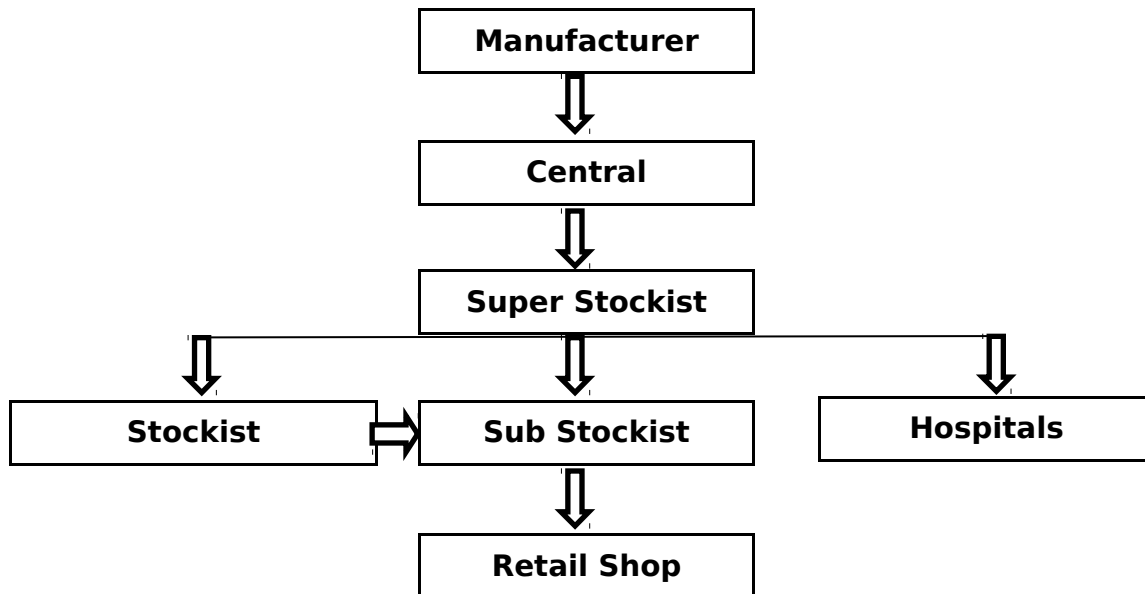
- a) Pharmaceutical companies offer "Bonus Schemes" to retailers periodically. In these schemes, on purchase of a specified quantity of drugs retailers get some extra quantity of the same drug for free. For example, in May 2011 Torrent Pharmaceuticals offered "Buy one Get one free scheme" on Thrombiflo which contains Fenobirate – a drug from fibrate class mainly used to reduce cholesterol levels in patients at risk of cardiovascular disease.
- b) On the other hand, surgical companies directly offer very high profit margins to retailers on their products. For example, in May 2011 the maximum retail price for a box containing 100 examination gloves by MRK healthcare was found to be Rs. 400/- whereas the retailers obtained the same box for Rs. 155/- which means that retailers got 158.06% margin on the sale of these examination gloves.

In this study, we have tried to measure the impact of incentives in the form of profit margins on consumers.

2. Methodology for the study

We started with the study of the drug industry supply chain. In India, major pharmaceutical companies have outsourced their supply chain management to clearing and forwarding agents (CFAs) who are primarily responsible for maintaining stock of the company's

products and forwarding the products to the stockists as per their demand. Unlike a CFA that can handle the stock of one company, a stockist (distributor) can simultaneously handle more than one company. The retail pharmacy obtains products from the stockist or sub-stockist through whom it finally reaches the consumers (patients). Certain small manufacturers directly supply the drugs to the super stockist.



In this supply chain retailer get higher margins as compared to other entities. Companies offer various kinds of incentives to retailers to boost the sales.

The next step in the study involved selecting drugs and disposable medical supplies for analysis.

a) Selection of drugs: To study the effect of bonus schemes offered to retailers by companies on retail prices of the medicines we have classified drugs in the following 3 categories:

i. Drugs under price control: In 1970s Government of India established rules to control drug prices. In 1979, 347 drugs were under the price control, which came down to 166 in 1987. After the Drug Price Control Order (DPCO) of 1995, Indian Government currently controls prices of 74 drugs formulations [6]. Annexure 1 gives the list of drugs under Drug Price Control Order (DPCO).

ii. Drugs in essential list of medicines but not under price control: Government of India defines essential medicines as medicines that satisfy the priority health care needs of the population. They are selected considering disease prevalence, evidence on efficacy and safety, and comparative cost-effectiveness. Essential medicines are intended to be available within the context of functioning health systems at all times in adequate amounts, in the appropriate dosage forms, with assured quality. Currently there are 354 formulations under the list of essential medicines [7]. The essential drugs need not be under government price control.

iii. *Drugs not in the essential list of medicines:* 2/3rds of medicines sold in India are not essential medicines by the Government's own definition. Of the 300 top selling brands in the ORG Nielsen list of October 2003, only 36 brands (12%) were price controlled [8].

b) *Selection of disposable medical supplies:* For this study, we have tried to obtain pricing data for as many commonly used disposable medical supplies as possible. Some of them are syringes, needles, gloves, blood transfusion sets, face mask, etc.

Having identified the categories of drugs the next step was to obtain as much data as possible and classify it in those categories. We obtained the bonus scheme data and MRPs through 3 stockists and 5 websites of the various stockist & companies (final number that you used to get the average value shown in tables). Only on-going schemes were considered for the study. We obtained the data for profit margin offered by surgical companies to retailers through 2 wholesalers.

To enquire about hospital policy for drugs and surgical supplies, we contacted authorities at the popular private hospitals in Mumbai regarding the policy followed by them for the sale of drugs and disposable surgical supplies. We found out that most of the big private hospitals in Mumbai make it mandatory for admitted patients to purchase prescribed drugs and disposable surgical supplies from their own hospitals. No medical supplies from outside pharmacies are permitted.

The next step involved analyzing the data. For this purpose, we have defined the following terms:

1. *% Mark-up in price due to schemes:* This is defined as the ratio of free quantity obtained by retailer on purchase of the drug under scheme and the quantity of the same drug to be purchased for getting the scheme.

$$\% \text{ Mark - up in price due to scheme} = \frac{\text{Free quantity Received}}{\text{Quantity to be purchased for getting the scheme}} \times 100$$

2. *Scheme Adjusted Price (SAP):* This is given by the following formula

$$\text{Scheme Adjusted Price, SAP} = \frac{\text{MRP}}{\left(1 + \frac{\% \text{ Mark-up}}{100}\right)}$$

3. *Average price of the medicine:*

i. *Average price of the medicine (MRP):* This is the average of MRP of the brands considered for the analysis.

ii. *Average price of the medicine (SAP):* This is the average of SAP of the brands considered for the analysis.

The above mentioned terms have been used in the analysis.

TNMSC Prices: Tamil Nadu state government instituted the centralized drug purchase organization, the Tamil Nadu Medical Services Corporation Limited (TNMSC) first of its kind in the country on 1st July 1994. TNMSC was incorporated with the objective of looking after

all the activities related to the procurement of medicines for the entire government hospitals and public health set ups in the state [9]. Over the years, TNMSC has achieved very low procurement prices for the essential medicines. Wherever possible we have included TNMSC procurement prices for comparison. The entire list of procurement prices can be obtained from the TNMSC website [10].

We have analysed and discussed the implications on customers of the bonus schemes offered by the pharmaceutical companies and the profit margin offered by the surgical companies in section 5. After that, the suggestions to government policy makers have been listed in section 6.

3. Drugs

The 3 categories of drugs described in section 2 have been discussed here.

3.1 Drugs under DPCO

Considering that drugs are essential for health of the society, drugs have been declared as essential and accordingly put under the Essential Commodities Act. The Drugs Prices Control Order, 1995 is an order issued by the Government of India under Sec. 3 of Essential Commodities Act, 1955 to regulate the prices of drugs. As per the Modifications in Drug Policy, 1986 announced in September, 1994, one of the main objectives of the Drug Policy is to ensure abundant availability, at reasonable prices of essential and life saving and prophylactic medicines of good quality. 74 out of about 500 commonly used bulk drugs are kept under statutory price control. All formulations containing these bulk drugs either in a single or combination form fall under price controlled category [11].

For scheduled (controlled) drugs the margin is fixed at 16% as per para 19 of the DPCO, 1995 which is reproduced below:

"A Manufacturer, distributor or wholesaler shall sell a formulation to a retailer, unless otherwise permitted under the provisions of this order or any order made there under, at a price equal to the retail price, as specified by an order or notified by the Government, (excluding excise duty, if any) minus sixteen per cent thereof in the case of Scheduled drugs" [11].

Of the 74 drugs that are currently under DPCO we have chosen 3 antibacterials because we saw remarkable schemes in these 3 drugs. Ceftriaxone, Norfloxacin and Ciprofloxacin, which come under the purview of DPCO, are also in the National List of Essential Medicines released by the Directorate General of Health Services, Ministry of Health & Family Welfare, Government of India. Owing to this their prices should be under regulation by the National Pharmaceutical Pricing Authority (NPPA) which was established as an independent body to monitor the prices of drugs in India.

Ceftriaxone: Table 1 which has the data for Ceftriaxone 1000mg Vial shows markups of 100% and above for 7 companies. Comparing the MRPs of the top 8 companies in the table with those of the bottom 3 gives an interesting observation. The companies that are providing more schemes are also selling their brands at a higher MRP.

The average MRP of Ceftriaxone 1000 mg vials from all these 11 companies is INR 66.7 per vial. Without any schemes the average MRP for these 11 companies will be INR 35.6, a reduction in price of 47%. The companies whose prices and schemes have been quoted here are not the only ones giving such schemes. Many other companies provide schemes in the range of 20-50% which we have not taken up here.

Sr. No	Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
1	Medley	Cefxi-1gm Inj	Vial	10	12	76	120	34.54
2	Wockhardt	Powercef 1gm Inj	Vial	10	11	66.35	110	31.59
3	Lupin	Cefaxone 1gm Inj	Vial	2	2	79.76	100	39.88
4	Mankind Pharma	Mahacef-1000 Inj Hosp Pack	Vial	1	1	70	100	35
5	Ranbaxy	Oframax-1gm Inj	Vial	1	1	64.4	100	32.2
6	Biochem	Monotax-1gm Inj	Vial	1	1	64.98	100	32.49
7	Novartis	Zetri-1gm Inj	Vial	1	1	72	100	36
8	Flamingo	Trixone-1gm Inj	Vial	10	7	72	70	42.35
9	Mankind Pharma	Mahacef-1000 Inj	Vial	5	3	65	60	40.62
10	Torrent	Torocef-1000	Vial	5	3	52	60	32.5
11	IPCA	Keftra-1gm Inj	10ML Vial	2	1	51.25	50	34.17

Even for Ceftriaxone 250 mg, shown in Table 2, the markups are as high as 140% and again from the same big brands. The average price of Ceftriaxone 250mg vial from the companies listed in Table 2 can be reduced by 42% if there were no schemes provided. TNMSC, on the other hand, buys the same Ceftriaxone 250 mg for INR 4.59 from Modern Laboratories and Ceftriaxone 1000 mg for INR 12.80 from Daffodils Pharmaceuticals Ltd. This indicates that a lot of price reduction in these drugs is possible even when these are already under DPCO.

Sr. No	Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
1	Novartis	Zetri - 250 Inj	Vial	5	7	33.25	140	13.85
2	Medley	Cefxi - 250 Inj	2 ML	4	3	33.75	75	19.28
3	Mankind Pharma	Mahacef - 250 Inj Hosp Pack	Vial	3	2	27.5	66.67	16.5
4	Alkem	Cefast - 250mg Inj	Vial	3	2	25.85	66.67	15.51
5	Aristo	Monocef - 250mg Inj	Vial	2	1	28.62	50	19.08
6	Mankind Pharma	Mahacef - 250 Inj	Vial	2	1	27.5	50	18.33

Another interesting thing to note here is that Mankind Pharma has 2 different packs for both the quantities of Ceftriaxone. The hospital pack of Ceftriaxone 1000mg (Row 4 Table 1), supplied to the hospitals only, is sold to customers at INR 70 per vial while the normal pack for chemists (Row 9 Table 1) has a MRP of INR 65 per vial. However this difference in price is not as extreme as the difference in schemes of these 2 packs. The hospital pack has 100% and 67% markups for 1000mg and 250mg Ceftriaxone vials respectively while the chemist pack has 60% and 50% markups for the same. Clearly the same drug is being sold at a higher price in hospitals and also they are obtaining them at lower prices.

Ciprofloxacin: Ciprofloxacin also has very high markups. Tables 3 and 4 show the schemes in Ciprofloxacin 250mg and Ciprofloxacin 500mg respectively. Renowned companies like Torrent, Cipla and Ranbaxy market their products a lot so that their products will be bought on preference due to the brand names provide as much as 50% schemes.

Cipla and Ranbaxy are in fact facing a lawsuit by NPPA over the issue of overpricing in Ciprofloxacin. According to the information available on the NPPA website, as on October 31, 2010, the total estimated overcharged amount, including interest, by various pharmaceutical companies since the inception of the NPPA in 1997 stood at a whopping Rs 2,208.35 crores [11].

If there were no schemes provided on these brands, the average cost of Ciprofloxacin 250mg for the brands shown could come down by 32%.

Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
Torrent	Quintor 250mg Tab	10's	2	1	31.9	50	21.26
Cipla	Ciplox 250mg Tab	10's	2	1	54	50	36
Ranbaxy	Cifran 250 Mg Tab	10's	2	1	59.8	50	39.87
ALKEM	Alcipro 250mg Tab	10's	7	3	32.8	42.85	22.96
Blue Cross	Cebran 250mg Tab	10's	7	3	32.4	42.85	22.68
Alembic	Ciprowin-250-tab	10's	5	2	31.9	40	22.77

The situation is worse in Ciprofloxacin 500 mg. The increase in price due to schemes in the brands shown is 37%. Alembic is providing 1 strip free on the purchase of 1 strip leading to 100% markup. Unfortunately for customers, amongst Ciprofloxacin 250mg and 500mg the latter is prescribed more due to its strength as has been told to us by retailers.

The average MRP of Ciprofloxacin 500mg from the selected companies is INR 7.1 per tablet and Scheme Adjusted Price is INR 4.5 per tablet. TNMSC buys Ciprofloxacin 500mg for INR 0.85 per tablet from Zim Laboratories Limited which is about 12% average MRP and 20% of the Scheme Adjusted Price. Once again there seems to be a high potential for cost reduction.

Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
Alembic	Ciprowin-500-tab	10's	1	1	61.87	100	30.93
Blue Cross	Cebran 500 Mg Tab	10's	3	2	57.65	66.67	34.59
Biochem	Biocip-500 Tab	10's	2	1	54	50	36
Ranbaxy	Cifran 500 Mg Tab	10's	2	1	98.6	50	65.73
Cipla	Ciplox 500mg Tab	10's	2	1	92	50	61.33
Torrent	Quintor 500mg Tab	10's	2	1	61.8	50	41.2

Norfloxacin: In the case of Norfloxacin (Table 5), the markups in price are slightly lesser than Ceftriaxone and Ciprofloxacin. But then again this being a drug under DPCO, it should be sold at the minimum possible price which isn't happening under the current laws. The average cost of 1 tablet of Norfloxacin 400mg for the chosen companies is INR 1 per tablet and the Scheme Adjusted Price comes out to INR 0.87 which is still considerably higher than TNMSC's buying price of INR 0.55 from Carewell Steuart Pharma Pvt. Ltd.

Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
Cipla	Norflox-400-tab	10's	4	1	48.5	25	38.8
Alembic	Norbid 400mg Tab	10's	9	1	10.4	11.11	9.34
IPCA	Normax Tab	10's	10	1	20.8	10	18.9
Dr. Reddy	Norilet 400mg Tab	10's	14	1	10.4	7.14	9.71
Dey's	Enteroflox-400mg Tab	6'S			6.23		10.4

3.2 Medicines under Essential List but not under DPCO

Several medicines come under the National List of Essential Medicines but are not under the DPCO. These medicines are very important in the Indian context owing to the kind of treatments generally sought here. There are 354 drugs under this list of which 74 are currently under the DPCO. However it is important that all of the drugs in the Essential medicines list are available at low prices to the consumer so that everyone can afford the treatment that he/she seeks.

3 examples have been taken here. Amikacin- an antibacterial, Ondansetron which is highly effective in treating post chemotherapy and radiotherapy nausea and vomiting [12] and Artesunate which is used to treat the deadliest form of Malaria.

Amikacin: We have chosen Amikacin as it is very regularly prescribed. Table 6 denotes schemes and prices for Amikacin 250mg vial. We can see markups as high as 150% due to schemes provided by Mankind Pharma. A drug that can be sold at INR 12 is being sold at INR 30. Another interesting thing to note in Amikacin schemes is that the MRP of the companies is pretty much the same even though the schemes are ranging from 20%-150%. The Scheme Adjusted Price is increasing progressively with decrease in % markup in price due to schemes. This is an anomaly when compared with other drugs where the Scheme Adjusted Price is almost the same for all companies.

Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
Mankind Pharma	Mikastar-250 Inj	2 ML	2	3	30	150	12
FDC	Ivimicin-250 Inj	2ML	9	11	36	122.22	16.2
LUPIN LTD (MAXTER)	AMIKEF 250mg	VIAL	1	1	37.84	100	18.92
Biochem Pharma	Amicin-250 Inj	2 ML	1	1	36	100	18

Aristo	Mikacin 250mg Inj	VIAL	11	9	37.5	81.81	20.62
ALKEM	Amitax 250mg Inj	VIAL	5	2	36	40	25.71
Chandra Bhagat	Amikas-250mg Inj	2ML	5	1	33	20	27.5

Ondansetron: A new report by Decision Resources, one of the world's leading research and advisory firms focusing on pharmaceutical and healthcare issues, finds that the esophageal cancer drug market in India will more than double by 2014 growing from \$16 million in 2009 to \$36 million in 2014[13]. The effectiveness of Ondansetron in treating post chemotherapy nausea and vomiting in patients with advanced esophageal cancer has been proven by a study in 1999[14] and hence we took Ondansetron as the next drug in this category. For Ondansetron (Table 7), IPCA provides schemes worth price markup of 60% on its brand. Other companies like Mankind Pharma, FDC and Cipla also provide markups of around 20-25%. With Chemotherapy costs being very high as it is, it would be best to provide related medicines to customers at cheaper prices. Average MRP of the companies shown in the table can be reduced by 23% if no schemes were provided.

Table 7 - Ondansetron 2mg/ml							
Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
IPCA	Periset-inj	2ML	5	3	21	60	13.12
Cipla	Emeset Inj 2ml	2ML	4	1	28.89	25	23.11
FDC	Vorast- 2ml Amp	2ML	4	1	10	25	8
Mankind Pharma	Vomikind- 2ml Inj	2ML	13	3	12.65	23.07	10.27
CFL	Ondace-2ml Amp	2ML	42	8	14.58	19.04	12.24

Artesunate: The Regional Office for South-East Asia, World Health Organization (WHO) gives the following data for the year 2009 in India:
Number of Lab confirmed malaria cases: 1.56 million
Number of deaths due to malaria: 1144

Plasmodium falciparum, the deadliest human malaria causing parasite [15], has developed resistance to the traditionally used anti malarial Chloroquine [16]. Owing to this, Artesunate has been recommended by the World Health Organization (WHO) for the treatment of severe malaria and has been used worldwide since many years. According to WHO intravenous Artesunate is the drug of choice for severe malaria in children, pregnant women and adults [17].

Thousands of lives could be saved if the Chinese drug were used to treat severe malaria instead of the other drugs in use against which most malarial parasites have developed resistance or drugs which have a lot of side-effects like Quinine [18]. There is a big push - funded by international donors - to make low-cost ACTs (Artemisinin-based combination therapies) available across malarial-endemic countries.

For a not so severe case of malaria the parenteral dosage of Artesunate to be given to an adult is 120mg on the first day followed by 60mg daily for the next four days [19]. From the Table 1 given below Average MRP of a 60mg vial is INR 186.75. This amounts to INR $186.75 \times 6 = \text{INR } 1120.5$ for a treatment. The Suresh Tendulkar Committee report which has been accepted by the Central Government says the poverty line in urban India is set at INR

578.80 and 37% of families in India are Below Poverty Line [20]. Clearly, a major chunk of Indian population which is mostly affected by malaria can't afford this treatment.

As can be seen from the table 8, IPCA and Lupin offer 1 vial free on buying 1 vial to the retailer. Clearly the price at which it is being currently sold to the consumers is double the price at which it could be sold if the schemes were not provided. Owing to this 100% markup in price, the cost for treatment of Malaria goes up drastically. As can be seen in the last column the Scheme Adjusted Price for 1 vial is around INR 100 for most 3 out of 5 companies. It is interesting to note that even though Cipla doesn't provide any schemes, the price of their brand is still about 70% more than INR 100.

Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
IPCA	Larinate Inj	60MG	1	1	193	100	96.5
LUPIN LTD (MAXTER)	PYRALFIN-A Inj	60MG	1	1	185	100	92.5
Zydus Cadila	Falcigo Inj	60MG	5	3	224.8	60	140.5
Flamingo Pharma	Versaquin Inj	60MG	2	1	160	50	106.67
Cipla	Ulteria Inj	60MG			171		171

If the schemes being provided by the manufacturers were revoked, the average price for the treatment can drop down by 35%. The average of the Scheme Adjusted Price of the 5 companies is INR 121.5 per vial and INR 728.5 for the entire treatment. Even these prices however are very high as TNMSC purchases the same 60 mg vial at INR 27.5 from Parenteral Drugs (India) Ltd. Obviously there are more places in the supply chain where there is a lot of markup in the prices for the companies shown here.

3.3 Medicines outside of the Essential List

There are many medicines which are not in the National List of Essential Medicines as they are not considered to be very important in the Indian context. Thus we have chosen 2 costly drugs in this section- Meropenem and Linezolid.

Meropenem: Meropenem is an antibiotic used to treat several bacterial infections. As seen from table 9, on a medicine with MRP as high as INR 2517 Orchid is giving schemes amounting to 50% markup in price. If the scheme is removed the MRP can drop down by INR 839 per vial which is more than the poverty line in India. The average price for 1 vial of these 4 companies can be reduced by 22% if the schemes were not given.

Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
Orchid	Meromer 1gm Inj	VIAL	2	1	2517	50	1678
Cipla	Merocrit 1gm Inj	1GM	4	1	2450	25	1960
Maxter	Merotrol 1gm Inj	VIAL	9	1	899	11.11	809.1
BioChem	Merovaz 1gm Inj	VIAL	10	1	1188	10	1080

Linezolid: Another antibiotic Linezolid's prices and schemes have been presented below in Table 10. The price for this is slightly less but the schemes are very high. Mankind Pharma provides 122% while Micro Eros and Integrace provide 100% markups. This is considerable considering that the price of the drug is already very high. The average MRP of the chosen brands INR 312.5 but the average Scheme Adjusted Price for the same brands comes out to INR 203.7 which is a reduction of 35%.

Company	Brand	Quantity	Buy	Free	MRP	% Markup in Price due to scheme	Scheme Adjusted Price
Mankind Pharma	Lizoforce-IV	300ML	9	11	199	122.22	89.55
Micro Eros	Linosept- IV	300ML	1	1	295	100	147.5
Integrace(Glenmark)	Lizolid-IV	300ML	1	1	346.8	100	173.37
Cipla	Linospans-IV	300ML	7	3	374.8	42.85	262.33
Unichem	Linnox-IV	300ML	5	1	329.6	20	274.67
Sandoz (Novartis)	Walibur-IV	300ML	5	1	330	20	275

4. Surgical Supplies

Today disposable medical supplies are an integral part of the patient's treatment. According to a study, Global demand for medical disposable products is forecasted to increase 5.5 % annually to \$169 billion in 2014 [21]. The study reports that developed countries combined will absorb more than 70% of this total, while demand in developing countries will expand faster as the availability and accessibility of basic health care services improve. India being a developing country, the demand here will rise at a rate more than the rest of the world and hence it is an important segment of medical supplies whose prices need to be regulated.

A very important point to note about surgical supplies is that they are of equal, if not more, importance compared to drugs for a patient undergoing treatment. However, not much is being done to ensure the availability of surgical items at lower prices. Every parenteral drug given to the patient requires a set of syringe & needle. Every patient undergoing surgery requires large quantities of masks, needles, gloves, etc. With most of these items bought at short notice from the doctors, the patients buy from the nearest medical shop which in most cases is the hospital pharmacy itself. With limited choice available the patient has to pay the price asked for by hospital pharmacy.

The wholesale price and MRP of various commonly used surgical supplies by some major companies is quoted in the table 11 given below. As seen from the table, margin for the retailers in surgical items is very high.

Sr. No.	Company	Product	Cost to wholesaler of 1 UNIT	MRP of 1 UNIT	% Markup in price
1	MRK Healthcare	Urine Bag (Make - NULIFE)	9.45	72	661.90
2	MRK Healthcare	Exam Glove Ste rile Latex - Pair Pack	5.2	32	515.38
3	MRK	Blood Transfusion Set	7.1	42	491.54

	Healthcare				
4	MRK Healthcare	Sterile Surgical Gloves (Tear Open)	8.25	48	481.81
5	MRK Healthcare	Surgeon Cap (Elastic) - Box Pack	1.6	9	462.5
6	MRK Healthcare	Urology Products Foley Balloon Catheter	30	160	433.33
7	MRK Healthcare	Exam Glove Non Sterile Latex	2.1	9.5	352.38
8	MRK Healthcare	Face Mask (Tie/loop} - Box Pack	1.6	7	337.5
9	Hicks	Crepe Bandage Regular Flexi Crepe- B.P.C - 2"	7.6	32.5	327.63
10	Hicks	U-10 . URINE Bag(URO - 10)	13.25	48	262.26
11	B Braun	DISPOSABLE NEEDLE STERICAN 16G XI 1/2"	1.53	5	226.79
12	Hicks	Medicated Adhesive Bandages Hicks BAND-GARD(Wash Proof)	62	200	222.58
13	Hicks	FACE MASK (2 PLY) -TIE/ELASTIC	1.75	5.5	214.28
14	B Braun	Disposable Syringes INJEKT 2 ML	1.64	5.1	210.97
15	Hicks	UNDER SHEET HICKS CARE (Bed Pads)	19.5	54	176.92
16	MRK Healthcare	NULIFE EXAMINATION GLOVES	1.55	4	158.06
17	Hicks	Hicks Paper Surgical Tape Paper Surgical Tape 1/2" x 06m (24 Rolls)	119.5	235	96.65
18	Hicks	HICKS· CARE ADULT DIAPER (LARGE)	143.5	275	91.63

Unlike drugs industry where the patient can at least ask for a particular brand prescribed by the doctor; in surgical industry patients have no choice but to buy what the retailer sells as generally there are no directions from the doctor about which brands to prefer. Generally in a competitive market, as the number of manufacturers increases the competition leads to lesser margins. With lesser margin at each level of the supply chain, the benefit to the end consumer increases [8]. The surgical industry, however, follows a different regime. Since, the retailer has complete power to promote a particular brand over the other; more margins are provided by company to the retailer so as to ensure more sales. Every manufacturer tries to lure the retailer to sell their product by providing more margin to the retailer. Just as pharmaceutical companies provide unethical incentives to doctors such as gifts, foreign trips; surgical supply companies promote their sales by offering very high margins to the retailers. With increase in competition the margins given to the retailers are increased and thus the patient ends up paying much more than the worth of the product.

According to WHO more than 50% of blood transfusions in India are voluntary; and more than 5 people per 1000 population in India donate blood annually. As can be seen in the table, more than 400% mark-up is observed in the blood transfusion sets (Refer: Entry 3 in Table 11) essential for blood transfusion. This, in a way, cheats the very motive of the

voluntary donors who wish to do some social service.

Crepe bandages (Refer: Entry 9 in Table 11) are a part of every first aid kit and they are sold at 327% higher price than the wholesale price at which most retailers buy them. Even most commonly used products such as disposable syringes & needles (Refer: Entries 11 and 14 in Table 11) are being sold with more than 200% mark-up at the end of supply chain.

Other surgical supplies which are commonly used during most surgeries are mentioned in the list and markups range from 90% to 660%. With surgeries already being exorbitantly costly due to the high fee charged by private hospitals, it is required that at least the cost of surgical supplies is monitored.

5. Implications on patients

During our data collection we found that most of the private hospitals in Mumbai don't allow patients to purchase drugs and disposable surgical supplies from outside pharmacies. We confirmed this by directly contacting the authorities in private hospitals. Any patient admitted in hospital has to buy the particular brand used by the hospital. Hospitals get these drugs & medicines at a discounted rate [known as Institutional Supply Rate] from the company or a wholesaler. Institutional rate is lower than the wholesale rate for medicines or surgical items. As pointed in section 2, for some medicines hospital packs are supplied with higher MRPs and more schemes. But the hospitals still sell these drugs at MRP.

As it is the customers are under heavy financial stress when they go to a hospital for treatment. On top of that rather than giving this benefit of markups directly to the customers by selling a hospital pack with lesser MRP companies provide them at lower prices to hospitals leaving scope for higher profits and thus more sales. It has been generally observed that 20% is the average margin that a retailer gets on selling drugs. Hence, the margin for hospitals is almost always more than 20%. In some cases hospitals get more than 300% margin on disposable medical supplies. The private hospitals with profit motive would promote these brands which are more profitable to them and thus burden the customers more.

Currently DPCO monitors just the prices of drugs but schemes also have to be monitored. If an endemic like Malaria has to be completely eradicated from India, Artesunate, the drug that is the most effective for malarial treatment should be provided at lower prices to the patients. The examples we have taken for analysis were just a small sample. A lot of other drugs have similarly high markups due to schemes. We have provided a list of some very expensive drugs with high markups due to schemes in Appendix 2.

According to WHO statistics of 2005-06, estimated total number of births in India during 2005 was 27,264,000. 75% of these births occurred in rural areas. Where 41.8% of rural population lives below poverty line [20], very commonly used surgical supplies required for the carrying out the delivery operations are sold at more than 200% margin. Many families in rural India cannot afford this and end up having deliveries at home which leads to high Infant mortality rate which right now stands at 47.57 deaths/1000 live births.

According to WHO, India has the 3rd largest HIV/AIDS population in the world. There are more than 2 million HIV patients in India who have been tested positive. As is known early detection of HIV can allow the patient to take precautions and increase life expectancy. But the HIV test cards are being sold at more than 250% margin at the end of the supply chain

which makes it hard for many from the lower sections of the society to get themselves tested.

6. Recommendations to Government Policy Makers:

1. Bringing surgical supplies under Government Price Control: Government should prepare a price control strategy for most commonly used surgical supplies such as gloves, masks, syringes, needles, etc. just like the current list of price controlled drugs.
2. Upper Cap on selling margin that the hospitals get by selling drugs & disposable medical supplies: This can be fixed at say 20% which is a very generous margin as such.
3. Patients admitted in private hospitals should be allowed to buy medicines from pharmacies outside hospital. Patient might get some discount outside in a competitive market.
4. Banning Bonus schemes on drugs & upper cap on retailer's margin: Government should ban all the promotion schemes offered by pharmaceutical companies to retailers. The retailer's upper margin should be fixed. If this seems very drastic step, Government should at least ban schemes on the essential medicines and should put upper cap on the margin of the essential drugs.

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Appendix - 1

List of Price Controlled Drugs (DPCO 1995)

BULK DRUGS

1. SULPHAMETHOXAZOLE
2. PENICILLINS
3. TETRACYCLINE
4. RIFAMPICIN
5. STREPTOMYCIN
6. RANITIDINE
7. VITAMIN C
8. BETAMETHASONE
9. METRONIDAZOLE
10. CHLOROQUINE
11. INSULIN
12. ERYTHROMYCIN
13. VITAMIN A
14. OXYTETRACYCLINE
15. PREDNISOLONE
16. CEPHAZOLIN
17. METHYLDOPA
18. ASPIRIN
19. TRIMETHOPRIM
20. CLOXACILLIN
21. SULPHADIMIDINE
22. SALBUTAMOL
23. FAMOTIDINE
24. IBUPROFEN
25. METAMIZOL (ANALGIN)
26. DOXYCYCLINE
27. CIPROFLOXACIN
28. CEFOTAXIME
29. DEXAMETHASONE
30. EPHEDRINE
31. VITAMIN B1 (THIAMINE)
32. CARBAMAZEPINE
39. GRISEOFULVIN
40. GENTAMICIN
41. DEXTROPROPOXYPHENE
42. HALOGENATED
HYDROXYQUINOLINE
43. PENTAZOCINE
44. CAPTOPRIL
45. NAPROXEN
46. PYRENTAL
47. SULPHADOXINE
48. NORFLOXACIN
49. CEFADROXYL
50. PANTHONATES & PANTHENOLS
51. FURAZOLIDONE
52. PYRITHIOXINE
53. SULPHADIAZINE
54. FRAMYCETIN
55. VERAPAMIL
56. GLIPIZIDE
57. SPIRONOLACTONE
58. PENTOXIFYLLINE
59. AMODIAQUIN
60. SULPHAMOXYLE
61. FRUSEMIDE
62. PHENIRAMINE MALEATE
63. CHLOROXYLENOLS
64. BECAMPICILLIN
65. LINCOMYCIN
66. CHLORPROPAMIDE
67. MEBHYDROLINE
68. CHLORPROMAZINE
69. METHENDIENONE

33. VITAMIN B2 (RIBOFLAVIN)
 34. THEOPHYLLINE
 35. LEVODOPA
 36. TOLNAFTATE
 37. VITAMIN E

70. PHENYL BUTAZONE
 71. LYNESTRANOL
 72. SALAZOSULPHAPYRINE
 73. DIOSMINE
 74. TRIMIPRAMINE

38. NALIDIXIC ACID

Appendix – 2

Company	Brand Name	Content	Class of the medicine	packing	Scheme	MRP
Cipla	Vc-15 Serum	vitamin C at a concentration of 15%.	Vitamins	15ML	2 + 1	1500
Wockhardt (MCC)	Biovac- A- 0.5ml	vaccine, hepatitis a	Vaccines, Antisera & Immunologicals	0.5ML	10 + 1	1170
Glaxo	Havrix-720. {paed.}	vaccine, hepatitis a	Vaccines, Antisera & Immunologicals	0.5 ML	4 + 1	1099
Cadila HC	Agraban Infusion - 5mg	tirofiban	Anticoagulants, Antiplatelets & Fibrinolytics (Thrombolytics)	100ML	1 + 1	4167
Lupin (Pinnacle)	Tirofuse-iv 5mg	tirofiban	Anticoagulants, Antiplatelets & Fibrinolytics (Thrombolytics)	100ML	3 + 1	3447.4
TETGLOB	Tetglob-250-inj	tetanus immunoglobulin	Vaccines, Antisera & Immunologicals	VIAL	7 + 1	1200
Cadila (Oncocare)]	Stpase-15 Lakh Vial	Streptokinase	Anticoagulants, Antiplatelets & Fibrinolytics (Thrombolytics)	VIAL	5 + 1	2864.59
Lupin	Lupiflo-15 Inj	Streptokinase	Anticoagulants, Antiplatelets & Fibrinolytics (Thrombolytics)	VIAL	1 + 1	2819.39
Aurobindo	Lintaz-4.5gm Inj	piperacillin + tazobactam	Penicillins	VIAL	2 + 1	375
Am. Biocare	Pipzo-4.5gm-inj	piperacillin + tazobactam	Penicillins	VIAL	2 + 1	354.35

Sanify (Sanative)	Tazolin- 4.5gm Inj	piperacillin + tazobactam	Penicillins	VIAL	5 + 3	353.6
Alkem (Ulticare)	Revotaz-4.5gm	piperacillin + tazobactam	Penicillins	VAIL	5 + 4, 10 + 9	352
Aristo	Durataz - 4.5gm Inj	piperacillin + tazobactam	Penicillins	VIAL	2 + 1, 3 + 2	351.48
Lupin	Merotrol 0.5gm	meropenem	Beta-Lactams	VIAL	9 + 1	1299.07
Ranbaxy	Veбалone-3ml Inj	ibandronic acid	Agents Affecting Bone Metabolism	3 ML	5 + 1	2000
Torrent	Thrombiflo 60mg Inj	fenofibrate	Dyslipidaemic Agents	1'S	1 + 1	533.19
Torrent	Thrombiflo 40mg Inj	fenofibrate	Dyslipidaemic Agents	0.4ML	1 + 1	446
Emcure (Shweiz)]	Epofer-4000 Pfs	erythropoietin	Haematopoietic Agents	VIAL	5 + 1	1190
Syndicate	Zycloz Liquid	chlorzoxazone	Muscle Relaxants	500ML	11 + 1	1231
Orchid (Critical Care)]	Meromer-1gm Inj	meropenem	Beta-Lactams	VIAL	2 + 1	2517
Cipla	Merocrit 1gm Inj	meropenem	Beta-Lactams	1GM	4 + 1	2450