

WHICH DRUGS ARE BULLYING US FINANCIALLY? PRESCRIPTION COST ANALYSIS IN EX-SERVICEMAN POLYCLINIC DISPENSARY IN INDIA.

Medical Science

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ABSTRACT

Aims: To carry out prescription cost analysis in Ex-Serviceman Contributory Health Scheme (ECHS) Polyclinic dispensary in India

Study Design: Retrospective Prescription Cost Analysis

Place And Duration Of Study: ECHS Polyclinic Dispensary from 01 December 2019 to 31 December 2019 on all working days

Methodology: A total of 8295 prescriptions were received at ECHS dispensary in the month of December 2019 at an average of 346 prescriptions per day and a maximum of 445 per day and minimum of 242 per day. On each working day data were collected for previous day and segregated in pre-defined format as per National List of Essential Medicines (NLEM) 2015. The cost toward each group of drugs were calculated on prescribed quantity of medicines and added to calculate unit prescription cost at ECHS Dispensary.

Results: It is observed that the highest number of prescriptions 4599 (55.44%) were from General OPD. The total cost of prescribed medicines worked out to be INR 25,55,103.81 for the month of December 2019. Most of the cost was ascribed to amount of INR 13,03,489.31 (51.02%) by section 21 (Hormones, other endocrine medicines and contraceptives). The estimated unit cost of prescription was INR 308.03.

Conclusion: Implementing change in prescribing behaviors remains a major challenge for administrators and an inclusive approach with integrated with non-coercive educational approach should be utilized to change the behavior in prescriptions writing. Inculcating the culture of cost awareness amongst the health care providers pays good dividends in the long run. As far as cost containment in the healthcare facility is concerned, the first step forward can be cost awareness toward what and how much clinician are prescribing.

KEYWORDS

Unit Prescription Cost; ECHS Polyclinic; NLEM-2015

INTRODUCTION

A publicly funded health care system provides consultations at low cost and medicines free of charge to patients, however anecdotal and limited published evidence suggests availability of medicines is low. (Dixit et al., 2011; Maiti et al., 2015; Millard et al., 2018; Tripathi et al., 2016; Wendt et al., 2018) This leads to many patients purchasing their medicines out-of-pocket. (Shahrawat & Rao, 2012; Vasudevan et al., 2019) Indeed, the majority of private health spending in India (62.7% in 2018) is out-of-pocket (*Global Health Expenditure Database*, n.d.) Low availability of medicines in the public sector in India is potentially a major barrier to accessing medicines, particularly if private sector prices are unaffordable. Similarly rising trend of life style diseases has increased the demand for medicines, especially for chronic conditions such as diabetes, hypertension and arthritis.

Hospital administrators are required to provide health care services that the community needs at an acceptable level of quality and at the least possible cost. For execution of the same, they need information on the actual cost of the services they provide. Information about hospital costs is also needed to inform many types of policy decisions. For example, cost information can help health planners allocate resources to facilities and services (Green et al., 2001), assess the comparative efficiency of health care services across settings (Adam et al., 2003), and determine budgets to run health services. In low- and middle-income countries, cost information is important for determining reimbursement by social security systems. Nevertheless, very few detailed studies have been carried out on the economics of hospitals in low- and middle-income countries. Recognizing the need to make unit cost information available on a country-specific and hospital-level basis, WHO collated data on unit costs from countries and hospitals as part of its WHO-CHOICE project, which revealed a dearth of unit cost data for health care services, especially in low- and middle-income countries. (Adam & Evans, 2006)

In this study, we estimated unit costs of prescription in an Ex-Serviceman Contributory Health Scheme (ECHS) Polyclinic.

Prescription practices in any tertiary care hospital make interesting study for the hospital administrators. Prescriptions are the vehicles through which the basic service provision of drugs is provided to the out patients. They become the most important interface between the physicians who order the drugs as part of the therapeutic process and hospital administrators who procure and provide them. Costing studies help hospital administrators in planning the procurement of medical stores items and assist physicians in their professional review. Unit prescription cost in Government or free service setup is primarily relevant as a material management information, which is used for budgeting and procurement. It is also relevant for creating cost awareness amongst physicians. In ECHS Polyclinics, the doctors generally continue prescription of medicines prescribed by specialists, especially for chronic and high-end lifestyle diseases. It is least significant for patients, unless the medicines are not available and they have to buy them OOP. This OOP expenditure might make the patient aware of the importance of the services provided to them. Our study results can help hospital administrators understand their cost structures and run their facilities more efficiently, and we identify areas where improvements in efficiency might significantly lower unit costs.

The Ex-Servicemen Contributory Health Scheme (ECHS) was launched with effect from 01 Apr 2003. This scheme aims to provide comprehensive medical care (covering all possible diseases) not only in Service Hospitals, but also in those hospitals which are empanelled with the ECHS. This scheme covers all possible diseases in Ex-Serviceman, their dependents and widows. The scheme is wholly financed by Government of India from public funds according to the projection by the spending agency, past expenditure and availability of funds with only nominal contribution from retiring service pensioners.

METHODOLOGY

The study was conducted retrospectively in ECHS Polyclinic Dispensary in a metropolitan city in Western Maharashtra. Initially, a Pilot Study was carried out on first two days in the month of November 2019. The study was intended to short list the medicine that has been

provided to ECHS clientele. The list of medicine that emerged out from the data that was collected in these two days were categorized in to suitable categories based on National List of Essential Medicine 2015 (NLEM-2015) (*National List of Essential Medicines (NLEM) 2015*, n.d.) such as Analgesics and Anti-Pyretics, Hormones, Anti-Epileptics, etc. This pilot study helped to finalize a format for data collection from prescription of ECHS patients and to seek rate list of specific categories of medicines from procuring agencies.

The main study was carried out retrospectively for one month from 01 Dec 2019 to 31 Dec 2019. The study period was scheduled on each working day, which was 24 days in the month of Dec 2019. On each working day data were collected for previous day and segregated in pre-defined format as per National List of Essential Medicines (NLEM) 2015. The cost toward each group of drugs were calculated on prescribed quantity of medicines and added to calculate unit prescription cost at ECHS Dispensary.

RESULTS AND DISCUSSION

A total of 8295 prescriptions were received at ECHS dispensary in the month of December 2019 at an average of 346 prescriptions per day (considering 24 working days in month of Dec 2019) and a maximum of 445 per day and minimum of 242 per day. Daily distribution of various prescriptions is as shown in Figure 1.

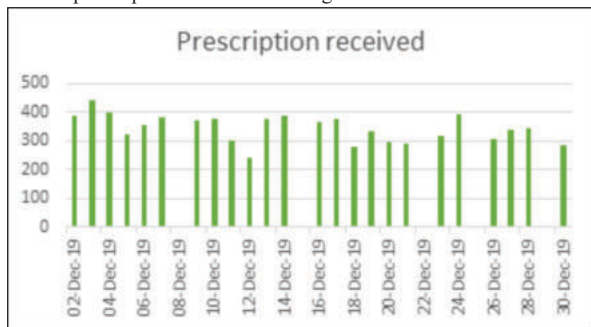


Figure 1. Number Of Prescriptions Received At Dispensary On Working Days

The ECHS Polyclinic had four Outpatient Departments (OPD) which are General, Dental, Medical and Obstetrics & Gynecology. The OPD services wise distribution of the sample prescriptions is shown in Figure 2.

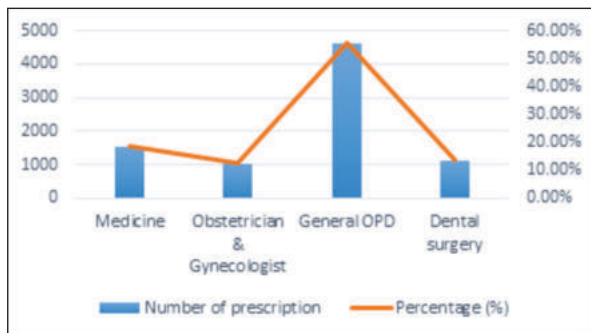


Figure 2. OPD Wise Prescriptions Received At Dispensary

It is observed that the highest number of prescriptions 4599 (55.44%) were from General OPD. The reason behind this could be that six Medical Officers (MO) were seeing the patients and they were the first contact for OPD patient for screening of patient and their further referral to medicine specialist and other speciality.

The prescribing pattern was analysed as per sections provided in NLEM-2015. It was revealed that out of 30 sections in NLEM-2015, prescribed medicines were found to be from 21 different sections as shown in Table 1. Table 1 also shows the percentage share of each section on the total expenditure.

Table 1. NLEM Section Wise Cost Distribution

Sr No	NLEM Section	Nomenclature	Total Cost (INR)	% of Total Cost
1	02	Analgesics, Anti-Pyretics, and NSAIDs	67475.77	2.64%
2	03	Anti-Allergic and medicines used in Anaphylaxis	28216.02	1.10%
3	05	Anti-Epileptics	66263.75	2.59%
4	06	Anti-Infective Medicines	100775.99	3.94%
5	07	Anti-Migraine Medicine	1974.34	0.08%
6	08	Anti-Neoplastic / Immunosuppressive	37789.57	1.48%
7	09	Anti-Parkinsonism Medicines	10832.08	0.42%
8	12	Cardiovascular Medicines	317549.12	12.43%
9	13	Medicine used in Dementia	4754.74	0.19%
10	14	Dermatological Medicine (Topical)	15710.51	0.61%
11	18	Diuretics	43919.85	1.72%
12	19	ENT Medicine (Ear & Nasal drops)	28470.35	1.11%
13	20	Gastrointestinal Medicines	221253.72	8.66%
14	21	Hormones, other Endocrine Medicines and Contraceptives	1303489.31	51.02%
15	22	Immunological (Vaccine / Immunoglobulin)	2859.75	0.11%
16	23	Muscle Relaxants and Cholinesterase Inhibitors	22485.47	0.88%
17	25	Ophthalmological Medicines (Eye Drops)	31886.77	1.25%
18	27	Psychotherapeutic Medicines	71670.37	2.80%
19	28	Medicines acting on the Respiratory Tract	74508.73	2.92%
20	29	Solutions (NS / DNS / RL / KCL / ORS)	350.10	0.01%
21	30	Vitamins and Minerals	102867.50	4.03%
Grand total			2555103.81	100%

The financial impact of individual drugs within different sections of NLEM-2015 is as shown in Table 2. Medicines from only 21 sections instead of 30 were due to specialist concerned for applicable rest of sections were not providing services to ECHS Polyclinic. The total cost of prescribed medicines worked out to be INR 25,55,103.81 for the month of December 2019. Most of the cost was ascribed to amount of INR 13,03,489.31 (51.02%) by section 21 (Hormones, other endocrine medicines and contraceptives), INR 317549.12 (12.43%) by section 12 (Cardiovascular medicines) and INR 221253.72 (8.66%) by section 20 (Gastrointestinal medicines). This is in contrast to other studies carried out in India wherein prescriptions containing antimicrobials were 83.6% (Sahoo et al., 2020). In a Base Hospital of South India, it was noticed that the most commonly prescribed groups of drugs were vitamins, analgesics, antibiotics, sulphonamides and anti-inflammatory agents and the mean (SD) cost per prescription was Rs 8.80. (*Prescription Patterns and Cost Analysis of Drugs in a Base Hospital in South India - PubMed*, n.d.) Higher percentage for endocrine and hormonal preparation is expected and anticancer drugs and targeted therapy (nibs and mabs) are conspicuous by their absence in high-cost medicines in a Polyclinic whose primary clients are aged ex-servicemen.

Table 2. NLEM Section Wise Financial Impact of Individual Drugs

Sl No	Section	Qty	Unit Cost (INR)	Total Cost (INR)	% of Total Cost	Sl No	Section	Qty	Unit Cost (INR)	Total Cost (INR)	% of Total Cost
1	Analgesics, Anti-Pyretics, and NSAIDs	1000	67.48	67475.77	2.64%	1	Analgesics, Anti-Pyretics, and NSAIDs	1000	67.48	67475.77	2.64%
2	Anti-Allergic and medicines used in Anaphylaxis	1000	28.22	28216.02	1.10%	2	Anti-Allergic and medicines used in Anaphylaxis	1000	28.22	28216.02	1.10%
3	Anti-Epileptics	1000	66.26	66263.75	2.59%	3	Anti-Epileptics	1000	66.26	66263.75	2.59%
4	Anti-Infective Medicines	1000	100.78	100775.99	3.94%	4	Anti-Infective Medicines	1000	100.78	100775.99	3.94%
5	Anti-Migraine Medicine	1000	1.97	1974.34	0.08%	5	Anti-Migraine Medicine	1000	1.97	1974.34	0.08%
6	Anti-Neoplastic / Immunosuppressive	1000	37.79	37789.57	1.48%	6	Anti-Neoplastic / Immunosuppressive	1000	37.79	37789.57	1.48%
7	Anti-Parkinsonism Medicines	1000	10.83	10832.08	0.42%	7	Anti-Parkinsonism Medicines	1000	10.83	10832.08	0.42%
8	Cardiovascular Medicines	1000	317.55	317549.12	12.43%	8	Cardiovascular Medicines	1000	317.55	317549.12	12.43%
9	Medicine used in Dementia	1000	4.75	4754.74	0.19%	9	Medicine used in Dementia	1000	4.75	4754.74	0.19%
10	Dermatological Medicine (Topical)	1000	15.71	15710.51	0.61%	10	Dermatological Medicine (Topical)	1000	15.71	15710.51	0.61%
11	Diuretics	1000	43.92	43919.85	1.72%	11	Diuretics	1000	43.92	43919.85	1.72%
12	ENT Medicine (Ear & Nasal drops)	1000	28.47	28470.35	1.11%	12	ENT Medicine (Ear & Nasal drops)	1000	28.47	28470.35	1.11%
13	Gastrointestinal Medicines	1000	221.25	221253.72	8.66%	13	Gastrointestinal Medicines	1000	221.25	221253.72	8.66%
14	Hormones, other Endocrine Medicines and Contraceptives	1000	1303.49	1303489.31	51.02%	14	Hormones, other Endocrine Medicines and Contraceptives	1000	1303.49	1303489.31	51.02%
15	Immunological (Vaccine / Immunoglobulin)	1000	2.86	2859.75	0.11%	15	Immunological (Vaccine / Immunoglobulin)	1000	2.86	2859.75	0.11%
16	Muscle Relaxants and Cholinesterase Inhibitors	1000	22.49	22485.47	0.88%	16	Muscle Relaxants and Cholinesterase Inhibitors	1000	22.49	22485.47	0.88%
17	Ophthalmological Medicines (Eye Drops)	1000	31.89	31886.77	1.25%	17	Ophthalmological Medicines (Eye Drops)	1000	31.89	31886.77	1.25%
18	Psychotherapeutic Medicines	1000	71.67	71670.37	2.80%	18	Psychotherapeutic Medicines	1000	71.67	71670.37	2.80%
19	Medicines acting on the Respiratory Tract	1000	74.51	74508.73	2.92%	19	Medicines acting on the Respiratory Tract	1000	74.51	74508.73	2.92%
20	Solutions (NS / DNS / RL / KCL / ORS)	1000	0.35	350.10	0.01%	20	Solutions (NS / DNS / RL / KCL / ORS)	1000	0.35	350.10	0.01%
21	Vitamins and Minerals	1000	102.87	102867.50	4.03%	21	Vitamins and Minerals	1000	102.87	102867.50	4.03%
Grand total				2555103.81	100%	Grand total				2555103.81	100%

Sl. No.	Drug Name	Quantity	Rate	Total Cost	Sl. No.	Drug Name	Quantity	Rate	Total Cost
1	Aspirin 75mg Tab	10000	1.10	11000.00	1	Aspirin 75mg Tab	10000	1.10	11000.00
2	Pantoprazole 40mg + Sucralfate 100mg Tab	1000	5.00	5000.00	2	Pantoprazole 40mg + Sucralfate 100mg Tab	1000	5.00	5000.00
3	Calcitriol 100mcg SR Tab	3000	1.10	3300.00	3	Calcitriol 100mcg SR Tab	3000	1.10	3300.00
4	Metformin 1000mg 500mg Tab	1000	1.10	1100.00	4	Metformin 1000mg 500mg Tab	1000	1.10	1100.00
5	Atorvastatin 20mg Tab	1000	1.10	1100.00	5	Atorvastatin 20mg Tab	1000	1.10	1100.00
6	Insulin Lispro 100IU/ml (2ml)	100	10.00	1000.00	6	Insulin Lispro 100IU/ml (2ml)	100	10.00	1000.00
7	Alfuzosin 10mg Tab	1000	1.10	1100.00	7	Alfuzosin 10mg Tab	1000	1.10	1100.00
8	Clonidine 0.1mg Tab	1000	1.10	1100.00	8	Clonidine 0.1mg Tab	1000	1.10	1100.00
9	Hydrochlorothiazide 50mg Tab	1000	1.10	1100.00	9	Hydrochlorothiazide 50mg Tab	1000	1.10	1100.00
10	Hydrochlorothiazide 25mg Tab	1000	1.10	1100.00	10	Hydrochlorothiazide 25mg Tab	1000	1.10	1100.00
11	Hydrochlorothiazide 12.5mg Tab	1000	1.10	1100.00	11	Hydrochlorothiazide 12.5mg Tab	1000	1.10	1100.00
12	Hydrochlorothiazide 6.25mg Tab	1000	1.10	1100.00	12	Hydrochlorothiazide 6.25mg Tab	1000	1.10	1100.00
13	Hydrochlorothiazide 3.125mg Tab	1000	1.10	1100.00	13	Hydrochlorothiazide 3.125mg Tab	1000	1.10	1100.00
14	Hydrochlorothiazide 1.5625mg Tab	1000	1.10	1100.00	14	Hydrochlorothiazide 1.5625mg Tab	1000	1.10	1100.00
15	Hydrochlorothiazide 0.78125mg Tab	1000	1.10	1100.00	15	Hydrochlorothiazide 0.78125mg Tab	1000	1.10	1100.00
16	Hydrochlorothiazide 0.390625mg Tab	1000	1.10	1100.00	16	Hydrochlorothiazide 0.390625mg Tab	1000	1.10	1100.00
17	Hydrochlorothiazide 0.1953125mg Tab	1000	1.10	1100.00	17	Hydrochlorothiazide 0.1953125mg Tab	1000	1.10	1100.00
18	Hydrochlorothiazide 0.09765625mg Tab	1000	1.10	1100.00	18	Hydrochlorothiazide 0.09765625mg Tab	1000	1.10	1100.00
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20	Hydrochlorothiazide 0.0244140625mg Tab	1000	1.10	1100.00	20	Hydrochlorothiazide 0.0244140625mg Tab	1000	1.10	1100.00
21	Hydrochlorothiazide 0.01220703125mg Tab	1000	1.10	1100.00	21	Hydrochlorothiazide 0.01220703125mg Tab	1000	1.10	1100.00
22	Hydrochlorothiazide 0.006103515625mg Tab	1000	1.10	1100.00	22	Hydrochlorothiazide 0.006103515625mg Tab	1000	1.10	1100.00
23	Hydrochlorothiazide 0.0030517578125mg Tab	1000	1.10	1100.00	23	Hydrochlorothiazide 0.0030517578125mg Tab	1000	1.10	1100.00
24	Hydrochlorothiazide 0.00152587890625mg Tab	1000	1.10	1100.00	24	Hydrochlorothiazide 0.00152587890625mg Tab	1000	1.10	1100.00
25	Hydrochlorothiazide 0.000762939453125mg Tab	1000	1.10	1100.00	25	Hydrochlorothiazide 0.000762939453125mg Tab	1000	1.10	1100.00
26	Hydrochlorothiazide 0.0003814697265625mg Tab	1000	1.10	1100.00	26	Hydrochlorothiazide 0.0003814697265625mg Tab	1000	1.10	1100.00
27	Hydrochlorothiazide 0.00019073486328125mg Tab	1000	1.10	1100.00	27	Hydrochlorothiazide 0.00019073486328125mg Tab	1000	1.10	1100.00
28	Hydrochlorothiazide 0.000095367431640625mg Tab	1000	1.10	1100.00	28	Hydrochlorothiazide 0.000095367431640625mg Tab	1000	1.10	1100.00
29	Hydrochlorothiazide 0.0000476837158203125mg Tab	1000	1.10	1100.00	29	Hydrochlorothiazide 0.0000476837158203125mg Tab	1000	1.10	1100.00
30	Hydrochlorothiazide 0.00002384185791015625mg Tab	1000	1.10	1100.00	30	Hydrochlorothiazide 0.00002384185791015625mg Tab	1000	1.10	1100.00
31	Hydrochlorothiazide 0.000011920928955078125mg Tab	1000	1.10	1100.00	31	Hydrochlorothiazide 0.000011920928955078125mg Tab	1000	1.10	1100.00
32	Hydrochlorothiazide 0.0000059604644775390625mg Tab	1000	1.10	1100.00	32	Hydrochlorothiazide 0.0000059604644775390625mg Tab	1000	1.10	1100.00
33	Hydrochlorothiazide 0.00000298023223876953125mg Tab	1000	1.10	1100.00	33	Hydrochlorothiazide 0.00000298023223876953125mg Tab	1000	1.10	1100.00
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64	Hydrochlorothiazide 0.000000000000001387778030547473509765625mg Tab	1000	1.10	1100.00	64	Hydrochlorothiazide 0.000000000000001387778030547473509765625mg Tab	1000	1.10	1100.00
65	Hydrochlorothiazide 0.00000000000000069388901523673693940625mg Tab	1000	1.10	1100.00	65	Hydrochlorothiazide 0.00000000000000069388901523673693940625mg Tab	1000	1.10	1100.00
66	Hydrochlorothiazide 0.0000000000000003469445076183684701953125mg Tab	1000	1.10	1100.00	66	Hydrochlorothiazide 0.0000000000000003469445076183684701953125mg Tab	1000	1.10	1100.00
67	Hydrochlorothiazide 0.00000000000000017347225380918183509765625mg Tab	1000	1.10	1100.00	67	Hydrochlorothiazide 0.00000000000000017347225380918183509765625mg Tab	1000	1.10	1100.00
68	Hydrochlorothiazide 0.00000000000000008673612690459091953125mg Tab	1000	1.10	1100.00	68	Hydrochlorothiazide 0.00000000000000008673612690459091953125mg Tab	1000	1.10	1100.00
69	Hydrochlorothiazide 0.000000000000000043368063452295459765625mg Tab	1000	1.10	1100.00	69	Hydrochlorothiazide 0.000000000000000043368063452295459765625mg Tab	1000	1.10	1100.00
70	Hydrochlorothiazide 0.00000000000000002168403172614772988125mg Tab	1000	1.10	1100.00	70	Hydrochlorothiazide 0.00000000000000002168403172614772988125mg Tab	1000	1.10	1100.00
71	Hydrochlorothiazide 0.000000000000000010842015863073864940625mg Tab	1000	1.10	1100.00	71	Hydrochlorothiazide 0.000000000000000010842015863073864940625mg Tab	1000	1.10	1100.00
72	Hydrochlorothiazide 0.0000000000000000054210079315369324703125mg Tab	1000	1.10	1100.00	72	Hydrochlorothiazide 0.0000000000000000054210079315369324703125mg Tab	1000	1.10	1100.00
73	Hydrochlorothiazide 0.00000000000000000271050396576846611916015625mg Tab	1000	1.10	1100.00	73	Hydrochlorothiazide 0.00000000000000000271050396576846611916015625			

5	20	Paracetamol 40mg Tab	50000	0.81	45472.00	1129221.54	44.59
6	21	Cyproterone & Ethinylestradiol 0.020mg Tab	175	254.47	45295.59	1154827.43	48.38
7	12	Indapamide 1.5mg SR Tab	39555	1.11	43951.85	1226809.25	45.05
8	15	Indapamide 1.5mg SR Tab	39555	1.11	43951.85	1272501.13	49.50
9	21	Metoprolol 50mg Tab	8000	7.24	43440.00	1215941.13	51.50
10	25	Inhaler Formoterol 5mg and Budesonide 400mcg	179	231.00	41249.00	1257290.10	53.12
11	5	Ampicillin 500mg + Cloxacillin Acid 125mg Tab	6525	6.15	40200.15	1297490.39	54.59
12	20	Supradol 100mg Solu	740	49.30	36525.00	1424415.39	55.14
13	12	Parindolol 4mg Tab	9203	3.97	36935.91	1470553.20	57.57
14	12	Roxatidine 20mg Tab	43780	0.83	36255.33	1507220.53	58.99
15	20	Cholecalciferol + Vitamin D3 Sachet	1994	4.25	34224.45	1541242.99	60.32
16	12	Metoprolol 30mg SR Tab	21270	1.57	33351.35	1574354.35	61.63
17	20	Sup Succinate	335	55.84	28735.04	1603269.39	62.75
18	20	Calcium + Vitamin D3 Tab	55000	0.33	25555.55	1631622.97	63.95
19	12	Formoterol 200mcg Tab	3057	5.97	27590.39	1659213.35	64.94
20	5	Sodium Nitroprusside 500mg Tab CR	4500	5.45	24510.00	1683523.35	65.90
21	19	Roxatidine + Fluclidone Nasal Spray	230	99.55	22925.40	1705749.75	66.50
22	5	Sodium Nitroprusside 500mg Tab	6370	3.45	22157.95	1726937.74	67.67
23	20	Lebiprel Husk	7020	2.91	20470.20	1749405.04	68.47
24	5	Apixan 5mg Tab	150	129.02	19353.00	1765751.04	69.22
25	21	Nifedipine 300mg Tab	3554	0.35	12555.35	1785049.39	69.95
26	20	Cap Omega 3 20mg	25000	0.49	12725.40	1805773.79	70.71
27	12	Ramipril 5mg Cap	47400	0.29	15455.00	1829251.79	71.44
28	25	Eye Drops Carbomethyl Cellulose 0.5% (10ml)	497	35.84	17812.45	1842074.27	72.13
29	5	Nifedipine 100mg Tab	395	29.74	17727.54	1860501.51	72.83
30	12	Metoprolol 25mg SR Tab	21535	0.75	16333.44	1877833.25	73.49
31	20	Rabeprazole 20mg Tab	24500	0.67	16555.50	1894300.55	74.14
32	20	Tamoxifen 0.4mg Cap	15450	1.00	15407.32	1910705.15	74.75
33	20	Vitamin B Complex Tab	34050	0.47	16055.20	1926715.35	75.41
34	20	Nasalamine 1200mg Tab	1570	10.15	15925.50	1942651.55	76.03
35	2	Nifedipine 10mg Tab	16700	0.94	15711.25	1958353.34	76.65
36	27	Ropivacaine 2mg Tab	550	17.42	14957.39	1973250.53	77.23
37	2	Pragalin 7.5mg Cap	10570	1.40	14925.00	1988255.53	77.82
38	21	Inj Insulin Midard 25.75 (2ml PPS)	200	72.45	14490.00	2002775.53	78.38
39	2	Paracetamol 500mg Tab	22555	0.43	13595.24	2016671.57	78.90
40	20	Prebiotic & Probiotic Cap	4901	2.83	13857.47	2030555.34	79.47
41	2	Analgesic Gels	1452	5.95	13275.00	2043544.34	79.99
42	-	Rest of the drugs	427755	-	511259.47	2555103.51	100.00

It was noticed that 26 drugs are costing 70% of the total financial impact amounting to INR 1806775.79. Most of these drugs are NLEM Section 21 and 20 and fall under “A” category of ABC Analysis. Control over these few drugs is easy and if done by a senior level personnel, will provide better control and accountability. It is noteworthy that almost 212 drugs amount to only 30% of the financial impact. The control of these drugs can be assigned to junior level personnel.

Section 21 of NLEM-2015 includes “Hormones, other endocrine medicines and contraceptives” which consists of anti-diabetics also, lead to huge cost involvement in our study. Insulin and newer Anti-Diabetics like Sitagliptin & Vildagliptin are costlier medicine as compare to other Anti-Diabetics. This could be the reason for sharing more than 50% of total prescription cost by section 21.

Most of the Ex-Servicemen are old in age and more prone to develop non-communicable diseases like Diabetes and Hypertension as compare to younger in age. 27% of urban India's population already has diabetes and another 46% are suffering from pre-diabetes with 10%–15% of conversion rate per annum from pre-diabetes to diabetes, there would be an ever-increasing proportion of population suffering from this chronic problem. The mean cost of anti-diabetes therapy increased from INR 5.44 to INR 7.25 per day in people with less than 5 years of diabetes, from INR 9.5 per day to INR 24.23 with the duration of diabetes between 5–10 years, from INR 12.69 to INR 52.12 with 10–15 years of duration of diabetes, and from INR 17.50 to INR 63.78 among people with more than 15 years of diabetes. This increased cost could be due to the complications, use of insulin and newer medicine. (Singla et al., 2019)

RECOMMENDATIONS

Prescriptions can be analyzed from the point of view of prescribing trends of physicians, the rationality of drugs prescribed in one prescription, and the total cost of various drugs prescribed. An irrational prescription by physician could increase the total out of pocket expenditure. Rational prescribing means prescribing the appropriate drug at the correct frequency of administration in the correct dosage of an appropriate formulation for the correct length of time prescribing and has its base in sound knowledge. This rational use of drugs discourages the unnecessary prescription leading to decrease in overall operational cost contributed by drugs and consumable. However, implementing change in prescribing behaviors remains a major challenge for administrators and an inclusive approach with integrated with non-coercive educational approach should be utilized to change the behavior in prescriptions writing. Inculcating the culture of cost awareness amongst the health care providers pays good dividends in the long run. Training of Healthcare Workers in Diabetes Treatment and investment in adoption of healthy life style can lead to reduction in unit prescription cost.

CONCLUSION

The estimated unit cost of prescription was INR 308.03. The total cost of prescribed medicines worked out to be INR 25,55,103.81 for the month of December 2019. Most of the cost was ascribed to amount of INR 13,03,489.31 (51.02%) by section 21 (Hormones, other endocrine medicines and contraceptives) and these drugs are financially bullying the ECHS Polyclinic. It is advised to get into cost reduction maneuvers like central bulk purchase like in case of Rate Contracts and Price Agreements for these drugs.

Irrational decision making while prescribing the drug may be due to the lack of supervision by top management or audit process. Since financial constraint will always be there and most of the doctors are unaware about the cost implication of prescribing drug, behavior modification of doctors is a necessity to avoid such issue. The audit should be done on periodic basis for the purpose of prescribing generic medicine, unnecessary prescription in relation to cost implication. The result of such audit should be dispersed among clinician, resident doctors and to the top management for cost awareness.

Costing is the effective tool to identify the cost element and ascertain the cost which can be utilized for cost awareness among the healthcare providers. The present study on unit prescription cost disseminates the cost data of unit prescription in the present scenario where increasing cost of care is a big obstacle in providing quality of care. As far as cost containment in the healthcare facility is concerned, the first step forward can be cost awareness toward what and how much clinician are prescribing.

ACKNOWLEDGEMENTS: None.

Competing Interests

Authors have no competing interests to declare.

CONSENT

No consent was required as the study was a costing study. However, all patient data were anonymized before analysis by the reviewer.

ETHICAL APPROVAL

Not required being a costing study without patient, human or animal involvement.

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