DISSERTATION TITLE

Drug Use at Subdivision and Referral Hospital of Bihar – A Comparative Study based on WHO first-level indicators

A Dissertation report for

Post graduate diploma in health & hospital management

By

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To WHOMSOEVER IT MAY CONCERN

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He is hard working and sincere toward his work. He has completed all the assignments tasks at the Referral Hospital, Nalanda (Bihar). I wish him all the very best endeavors.

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Certificate of Approval

The following dissertation titled **"Rational Use Of Drugs at Subdivision & Referral Hospital In Bihar"** is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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Abstract

Bihar is improving well in most of its health indicator in comparison to the conditions before the launch of NRHM in Bihar except the TFR, which is worst in the country. Government of Bihar launches many new programs under NRHM such as MUSKAAN for intensive focus on reduction of IMR and program like Adarsh Dampati Yojana, for control of TFR to improve the availability and accessibility of health services to all without any discrimination of cast and creed.

Health Indicators of Bihar

CBR- 22.3 CDR- 7.1 IMR- 47
MMR- 212 TFR- 3.7

Health department of Bihar is dedicated to improve the quality of life of people by providing better Health Services. We strive to help people improve their productivity and reduce risks of diseases and injury in a cost-effective way.

Rational use of the medicines is the very important concept about the utilization of medicine provided by the WHO in 1985. According to which the patient should receive right medicine, in right dose, for right duration of time and at right cost. Any deviation from such practice will lead to irrational practice of medicine which has many disadvantages to both system and as well community.

At present, 78% of the entire health expenditure in India is out-of-pocket (OOP). Purchasing drugs alone accounts for 72% of this OOP expenditure. Bihar is at the top in India in average medicine expenditure (Rs. 3268) for treatment during stay at Public Hospitals as inpatient during last 365 days per hospitalization case receiving treatment according to 60th round NSSO.

To decrease the OOP expenditure, the Government of Bihar has launched the policy of free drug distribution to all and had made some important amendment in the STG (specific treatment guidelines) for the doctors.

This study was undertaken to assess the rationality of the drug use in Bihar and the effect of steps taken by Government of Bihar to decrease the OOP expenditure. During the study we observed and analyzed following —

Prescribing Indicator

Number of drug prescribed to patient is determined by the doctor. Higher the number of drug prescribed is related to the patient incompliance towards therapy and it may also increase expenditure on drugs. The average number of drug prescribed in both the facilities of Bihar is quite high as compared to suggested by many organizations.

According to STGs none of doctors are allowed to prescribe branded drug but still the sufficient number of medicines/prescriptions had been found to be prescribed without generic name

The result also questioned the rational use of antibiotics in these two facilities. Analysis of prescription also shows that many of the medicines were not prescribed from the EDL which forces the patients to buy medicine from outside and add on to the OOP.

Patient care Indicator

The average consultation and average dispensing time is the important indicators for determining the rationality of drugs. It was found that both of these indicators were much below the desired standards because of which patients have inadequate knowledge about the diagnosis and the usage of medicines.

All the drugs dispensed to patients either in government or private pharmacy store were adequately labeled.

Knowledge of Patients

The patient's knowledge about the disease they had suffered from, about the frequency of doses and duration of therapy was very poor in both the facilities of Bihar.

Out of Pocket Expenditure

Because of the irrational prescribing pattern of doctors most of the patients have to buy at least one medicine from outside shop and such practice raises the OOP expenditure by patients for medicines.

ACKNOWLEDGEMENT

I have no adequate words to express my loyalty to God for showering his blessings over me and guiding me in my path and career.

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Archit Sinha

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Abbreviations

ANM	**Auxiliary Nurse Midwife**
ARSH	**Adolescent Reproductive & Sexual Health**
ASHA	**Accredited Social Health Activist**
CBR	**Crude Birth Rate**
CDR	**Crude Death Rate**
CHC	**Community Health Centre**
GH	**General Hospital**
HMIS	**Health Management Information System**
IBSY	**Indira Baal Swasthya Yojna**
IMR	**Infant Mortality Rate**
LHV	**Lady Health Visitor**
MMR	**Maternal Mortality Ratio**
MO	**Medical Officer**
MoHFW	**Ministry of Health & Family Welfare**
NRHM	**National Rural Health Mission**
OOP	**Out of Pocket**
PHC	**Primary Health Center**
RCH	**Reproductive Child Health**
SC	**Sub Center**
SHSB	**State Health Society Bihar**
STG	**Standard Treatment Guidelines**
TFR	**Total Fertility Rate**

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CHAPTER-1 INTRODUCTION

1.1 ORGANIZATIONAL PROFILE

National Rural Health Mission (NRHM) is an Indian health program for improving health care delivery across rural India. The mission, initially mooted for 7 years (2005-2012), is run by the Ministry of Health. The scheme proposes a number of new mechanisms for healthcare delivery including training local residents as Accredited Social Health Activists (ASHA), and the Janani Suraksha Yojana (motherhood protection program). It also aims at improving hygiene and sanitation infrastructure.

The Mission has a special focus on 18 states Arunachal Pradesh, Assam, Bihar, Chhattisgarh, HimachalPradesh, Jharkhand, Jammu and Kashmir, Manipur, Mizoram, Meghalaya, MadhyaPradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura , Uttarkhand and Uttar Pradesh. Under the Mission, health funding had increased from ₹27,700 crores in 2004-05 to ₹39,000 crores in 2005-06 (from 0.95% of GDP to 1.05%).This has further increased from ₹14,974 crores in 2007-08 to ₹34,488 crores in 2012-13. As of 2009, economists noted that "the mid-term appraisal of the NRHM has found that there has been a significant improvement in health indicators even in this short period". However, in many situations, the state level apparatus have not been able to deploy the additional funds, often owing to inadequacies in the Panchayati Raj functioning. Fund utilization in many states is around 70%.

National Rural Health Mission: Institutional Setup at State level

STATE HEALTH SOCIETY BIHAR

The State Health Society Bihar is situated at Sheikhpura, Patna. It has been established in order to guide its functionaries towards receiving, managing, and account for the funds received from the Ministry of Health & Family Welfare, Government of India.

SHSB manages NGO, PPP (Public Private Partnership), components of the NRHM in the State including execution of contracts, disbursement of funds and monitoring of performance. The Government of Bihar has decided that SHSB will function as a resource centre for the department of Health & Family Welfare in situational and policy development.

Basically SHSB strengthens the technical or management capacity of the Directorate of Medical and Health Services Patna as well as districts societies by various means like recruitment of individual from open market & mobilize financial or non-financial resources for supplementing the NRHM activities in the state. It will organize training, meeting, conferences, policy review studies / surveys, workshops and inter-state exchange visits etc. for deriving inputs for improving the implementation of NRHM in Bihar

State Health Mission and State Health Society

At the National level, the NRHM has a Mission Steering Group (MSG) headed by the Union Minister for Health & Family Welfare and an Empowered Programme Committee (EPC) headed by the Union Secretary for Health & FW. The EPC will implement the Mission under the overall guidance of the MSG.

At the State level, the Mission functions under the overall guidance of the State Health Mission headed by the Chief Minister of the State. The functions under the Mission are carried out through the State Health & Family Welfare Society. The structures of the Mission and Society and their linkages are mentioned in the following paragraphs.

State Health Mission

Composition

- Chairperson : Chief Minister
- Co-Chairperson : Minister of Health and Family Welfare, State Government
- Convener : Principal Secretary/Secretary (Family Welfare)

State Health Society

A. Governing Body

- Chairperson : Chief Secretary/Development Commissioner
- Co-Chair : Development Commissioner
- Vice-Chair : Principal/Secretary (Health & Family Welfare)
- Convener : Officer designated as Mission Director of State Health Mission

- Members:
  - Secretaries of the NRHM related Departments: Health & FW, Finance, AYUSH, Women and Child Development, Public Health Engineering, Water and Sanitation, Panchayati Raj, Rural Development, Tribal/SC Welfare, Urban Affairs and Planning and Programme Implementation.
  - DHS, Director AYUSH
  - GoI representative(s): MoHFW nominee.
  - Representatives of Development Partners supporting the NRHM in the State
  - Nominated non-official members: Four to six members (Public Health Professionals, MNGO representatives/ representatives of Medical Associations)
  - Regional Directors

B. Executive Committee

1. Chairperson: Principal Secretary/Secretary, FW
2. Co-Chair (s): Principal Secretary/Secretary, Health/FW (in case of separate secretaries in the State)
3. Vice Chair: Director, Health & FW
4. Convener : Executive Director/Mission Director (To be an IAS Officer Of JAG/Selection Grade)
4. Joint Secretaries: State Programme Managers/Project Directors of National Disease Control Programme

Members:

1. Director, AYUSH
2. Secretaries / technical officers from NRHM related sectors
3. Executive Secretary, State AIDS Control Society [for the States which decide not to merge it with State Health & FW Society].
4. MoHFW, GoI representative.
5. Regional Directors

NATIONAL RURAL HEALTH MISSION: INSTITUTIONAL SETUP AT THE DISTRICT LEVEL

Governance structure

B.1 District Health Mission

Chairperson: Chairman, Zilla Parishad

Co-Chair: District Collector/DM

Vice Chair: CEO Zila Parishad

Convener: Chief Medical Officer/CDMO/CMHO/Civil Surgeon

Members: MPs, MLAs, MLCs from the district, Chair-persons of the Standing Committees of the Zilla Parishad, Project Officer (DRDA), Chair-persons of the Panchayat Samitis and Hospital Management Societies, District Programme Managers for health, PHED, ICDS, AYUSH, education, social welfare, Panchayati Raj, State representative, representatives of MNGO/SNGO, etc.

B.2 District Health Society The overall governance structure of the Society may be as:-

Chairperson: District Collector/DM/CEO Zilla Parishad

Co-Char: DDC cum CEO Zilla Parishad

Chief Executive Officer: CMO/CDMO/Civil Surgeon

Member: Project Officer (DRDA)/ DPM for Health Water and Sanitation [under Total Sanitation Campaign (TSC)], DPMSU, PHED, ICDS, education, social welfare, Panchayati Raj, a State representative, Sub-Divisional Officer, CHC In-charge; representatives of Medical Association/MNGO/SNGO and Development Partners

EXECUTIVE COMMITTEE

Chairperson : DDC cum CEO Zilla Parishad (CMO in case no Post of DDC/CEO Zilla Parishad is notified in the District

Co-chair : CMO/CDMO/CMHO/CS

Chief Executive Officer and Convener: District Programme Manager/District RCH Officer

Members: Superintendent-District Hospital, All District Programme Managers for health, ICDS, PHED, Water and Sanitation, Education, Panchayati Raj etc.

1.2 INTRODUCTION OF PROJECT CARRIED OUT

Definition: Rational Use of Drugs is defined as the practice in which patients receive medicines appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community.

Various studies conducted in developed as well as in developing countries during past few years regarding the safe & effective use of drugs show that irrational drug use is a global phenomenon & only few prescriptions justify rational use of drugs.

Problem: The widely pervasive irrational practice of medicine is a matter of serious concern; not only in India but across the world. No section of provider is untouched by this malaise, though there is evidence that it is more in private sector relative to public, is prevalent among formally trained doctors somewhat greater amongst non-formally trained practitioners. It may take the form of irrational prescription of drugs or therapeutic procedures.

Irrational practice leads to:

- Unnecessary financial costs of medical care to the health service system.
- Unnecessary financial costs of medical care to patient.
- Neglect of essential treatment components while the unnecessary are taken under condition of resource constraints of patient.
- Exacerbation or prolongation of illness, distress and harm to the patient.

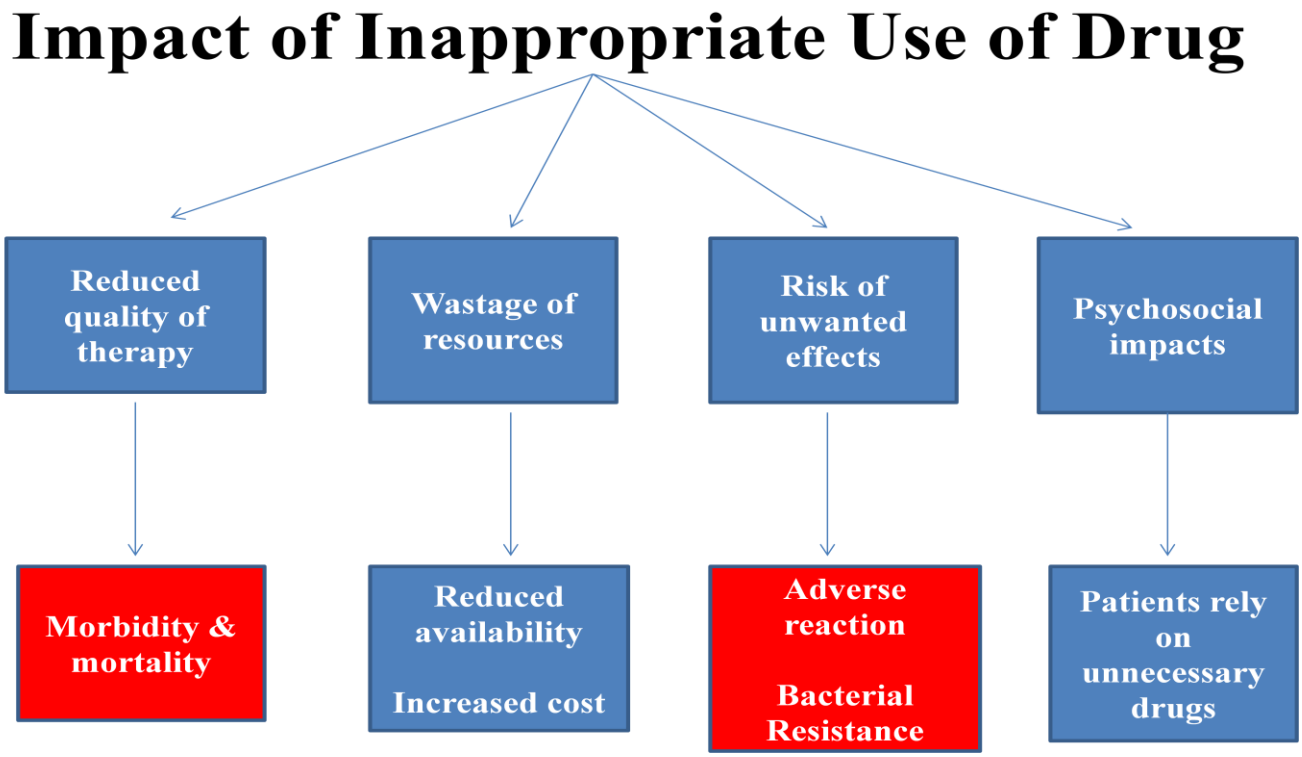


Fig 1 Impact of Irrational Practice of Drug

Irrational prescription of drugs is of common occurrence in clinical practice, important reasons being lack of knowledge about drugs, unethical drug promotions, poor communication between health professional & patient and irrational prescribing habits of clinicians. Monitoring of prescriptions and drug utilization studies can identify the problems and provide feedback to prescribers so as to create awareness about irrational use of drugs. The present study will be undertaken to identify inappropriate drug use in Bihar.

1.3 Review of Literature

1. **NSSO 60th Round 2004**

   Bihar is at the top in India in average medicine expenditure (Rs. 3268) for treatment during stay at Public Hospitals as inpatient during last 365 days per hospitalization case receiving treatment. (NSSO 60th round, 2004).

2. **Promoting Rational Drug Use- Need for an NRHM Sub mission**

   In rural areas the share of drugs in total outpatient treatment is 83%, and in urban area it is 77%.

3. **WHO convention in Nairobi in 1985**

   Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately, while 50% of patients fail to take them correctly.

4. **Antimicrobial resistance- WHO policy perspective on medicine No. 010 April 2005**

   Antimicrobial resistance (AMR) is one of the world's most serious public health problems resulting in prolonged illness and hospitalization, which are costly and the use of drugs other than first-line drugs may increase costs 100-fold (see Figure 2) making them unaffordable for many governments and patients, especially in developingcountries. Illustratively, cost of treatment of malaria is Rs. 10, and raises to Rs. 210 with quinine and to Rs. 972 for treatment with artesunate.

5. **Gaash B, "Irrational Practice of Medicine", Indian Journal for the Practicing Doctor, Vol. 5 No. 1 2008-03** Currently, antimicrobials are the most widely used of

drugs in the world, accounting for over one-quarter of hospital drug costs. Utilization studies and prescription audits in various states in India reveal very high use of antibiotics both in outdoor and indoor patients and that antibiotics (with analgesics and antihistamines) were the most commonly used drugs accounting for 50-90% of the drugs prescribed and that 20-50% of antibiotic use is questionable.

1.4 Objective

- To identify the gaps related to drug use based on prescribing indicators,(Prescribing Indicator, Patient care Indicator, Health Facility Indicator, Out Of Pocket Indicator)

- To assess the knowledge of patients about the medicine dispensed to them.

- Recommend interventions for improving the current situation based on literature review and discussions with stakeholders

- To assess the knowledge of physician about generic drug and design the suitable IEC material for the same.

CHAPTER-2 DATA AND METHODS

2.1 Methodology

The methodology used in the present study was retrospective, and the study was carried out for a period of three months this study was carried out in one district of Bihar namely Nalanda. Nalanda has been selected for this study as most of the health indicators were good in this district of Bihar as compared to the other Districts. So, in a way, the prevalence of irrational practice of drugs in this District, indirectly represent irrational use of drug in other Districts of Bihar also.

There were three Sub divisional hospitals in Nalanda. Two Sub divisional hospitals of the District have been chosen by simple random sampling. The hospital chosen is also by simple random sampling that was Sub division hospital Rajgir and Referral hospital Islampur in Nalanda respectively.

Total daily OPD at both of the hospitals is about 800. So the sample size calculated at 5% level of significance will be 260 by using software Epi Info. 130 patients were interviewed at both of the hospitals.

The patient had been selected by using the systematic sampling method, in which the first patient will be selected by lottery method and further determined by adding five to every number.

The patient had been interviewed by using the questionnaire based on the recommendations of the International Network of Rational Use of Drugs (INRUD) and the WHO and some additional indices including out-of pocket expenditure to patient.

2.2 Indictors of rational use of drug

2.21) Prescribing indicators

1.1 Average number of drugs consultation

1.2 Drugs prescribed by generic name (%)

1.3 Consultation resulting in an antibiotic prescription (%)

1.4 Consultation resulting in an injection prescription (%)

1.5 Drugs prescribed from Essential Drugs List (%)

2.22) Patient care indicators

2.1 Average consulting time

2.2 Average dispensing time

2.3 Drugs actually dispensed (%)

2.4 Drugs adequately labeled (%)

2.5 Patient's knowledge of correct dosage

2.23) Health facility indicators

3.1 Availability of Essential Drugs

3.2 Availability of key drugs

2.24) Out of Pocket Expenditure

4.1 Number of medicines buys from outside pharmacy

4.2 Average out of pocket expenditure

Chapter-3 Result and Findings

Total numbers of medicines prescribed by doctors in 260 prescriptions were 984. Out of these 546 were prescribed in Rajgir and 438 were in Islampur. In total average number of drugs prescribed per prescription were about 3.79 where in Rajgir & Islampur average number of drug prescribed was 4.2 & 3.37 respectively(Table 1).

Table 1:Details of prescription

Particulars	Rajgir	Islampur
Total number of prescriptions	130	130
Total number of drugs prescribed	546	438
Average number of drugs per prescription	4.2	3.37

Table 2 Prescribing Indicator

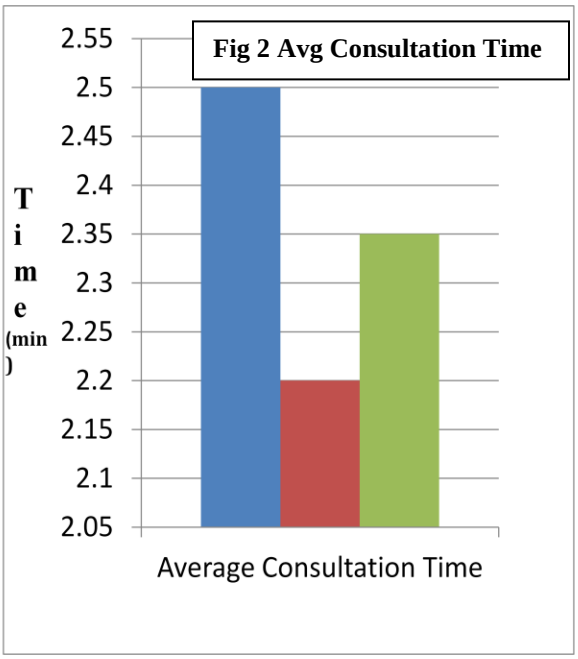
	Rajgir		Islampur	
Particulars	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Drugs not prescribed with Generic Name	152	27.83%	179	39.04%
Prescription with at least 1 drug without Generic Name	102	78.46%	105	80.76%
Prescription prescribed with an antibiotic	95	73.1%	108	83.07%
Medicine not from EML	134	24.54%	163	37.2%
Prescription with at least 1 drug not from EML	98	75.38%	97	74.61%

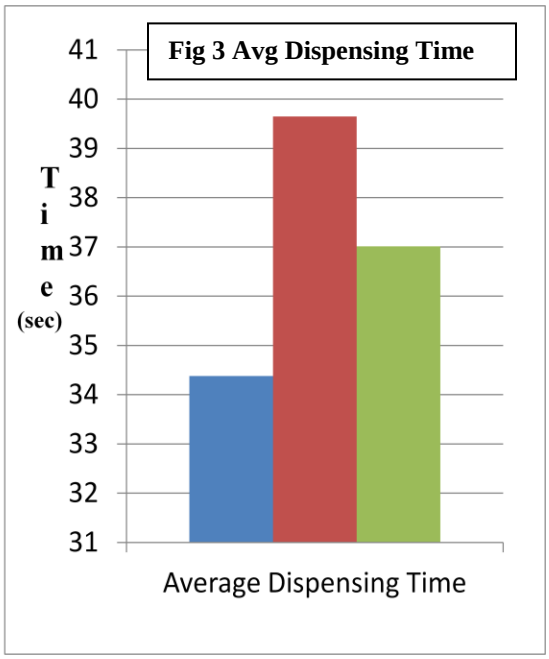
3.5.1 Prescribing Indicator

In Rajgir 27.83 %(152) medicines were not prescribed with generic name while in Islampur about 39.04% (179) drugs were not prescribed with generic name. On an average 33.44% (331) of medicines were not prescribed with generic name in these two hospitals of Rajgir & Islampur.
Also 78.46% (102) & 80.76% (105) prescriptions had at least one medicine without generic name respectively (Table 1).
As shown in Table 1, in Rajgir73.1 %(95) of prescriptions were prescribed with antibiotic and in Islampur it was about 83.07 %(108). In Islampur, out of all the prescriptions prescribed with antibiotic, 28.70 %(31) were prescribed with cefixime, a high generation antibiotic.
Out of all the medicines prescribed in Rajgir, about 24.54 %(134) were not from the Essential Medicine List while in Islampur it was raised to 37.2 %(163) as provided in table 1.

3.5.2 Patient care Indicator

As shown in fig 2, Average consultation time provided by doctors to their patient in Rajgir was 2.5 minutes (2min 30sec) and in Islampur was only 2.2 minutes (2min 12sec). Average consultation time in both the facilities was 2.35 minutes.
Average dispensing time was also very less in both the facilities. It was only about 34 seconds in Rajgir and 39 seconds in Islampur. The average dispensing time in both the area was only 37 seconds as given in fig 3.
All the medicines dispensed to patient were adequately labeled.





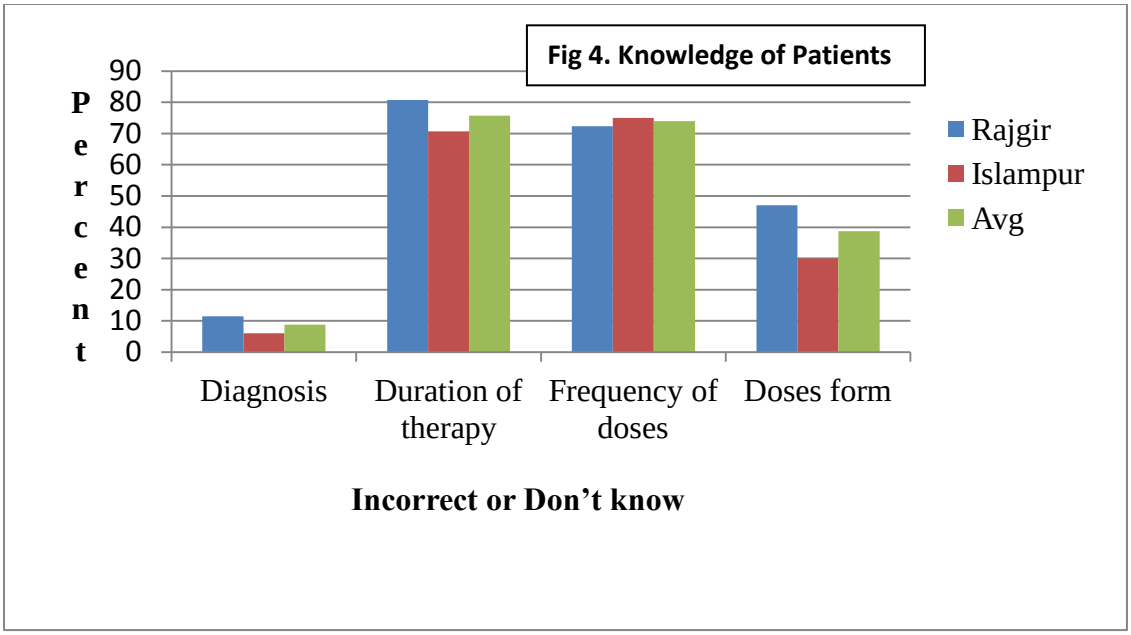
3.5.3 Knowledge of Patients

As shown in fig 4, 8.76% patient either was found to be completely unaware or mentioned incorrect diagnosis for himself/herself after consulting the doctor. The findings in Rajgir were more of concern than Islampur i.e. 11.53% in Rajgir and 6% in Islampur.

The duration of therapy was incorrect or they don't know in 80.76% cases in Rajgir and 70.73% in Islampur. On an average about 75.75% patient do not know or they were incorrect about duration of treatment in both facilities.

In two of the facilities' 73.95% patient had incorrect or they don't know about the frequency of doses as given in fig 4.

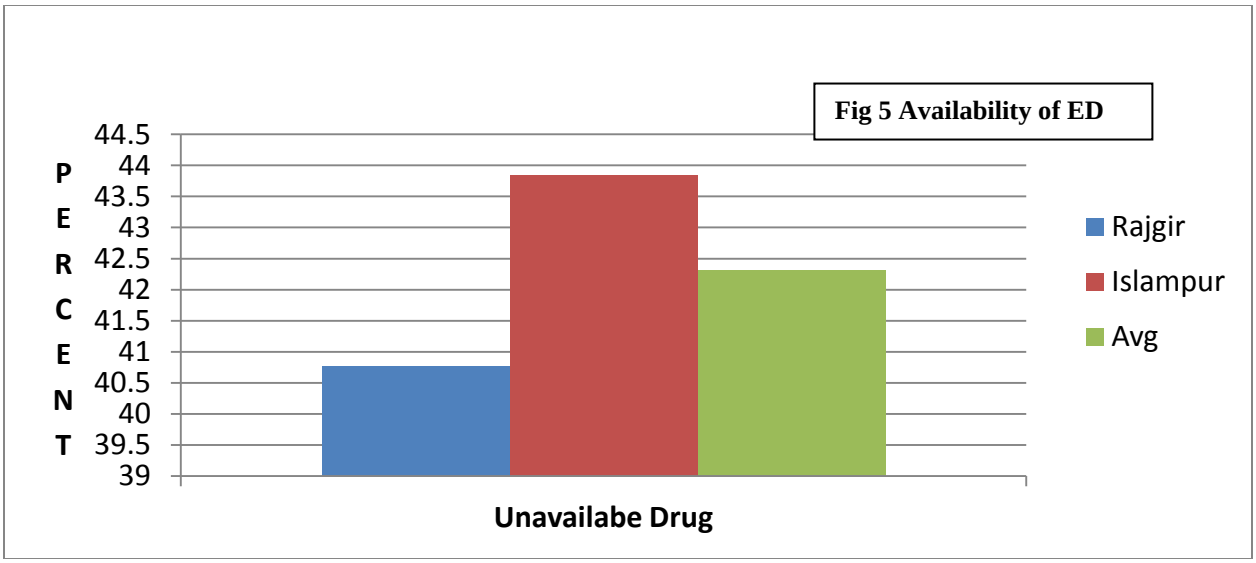
Also 38.7% of patients have incorrect information or they don't know about the dosage form or how to take medicines.



3.5.4 Availability of Essential Drugs

These are the list of drugs determined by the government at every public health facilities which must be present at respective health facilities.

In Rajgir at Sub-division from this list about 40.76% of drugs were not available while in Islampur at Referral the percentage of unavailable drug was raised to about 43.84% as shown in fig 5.

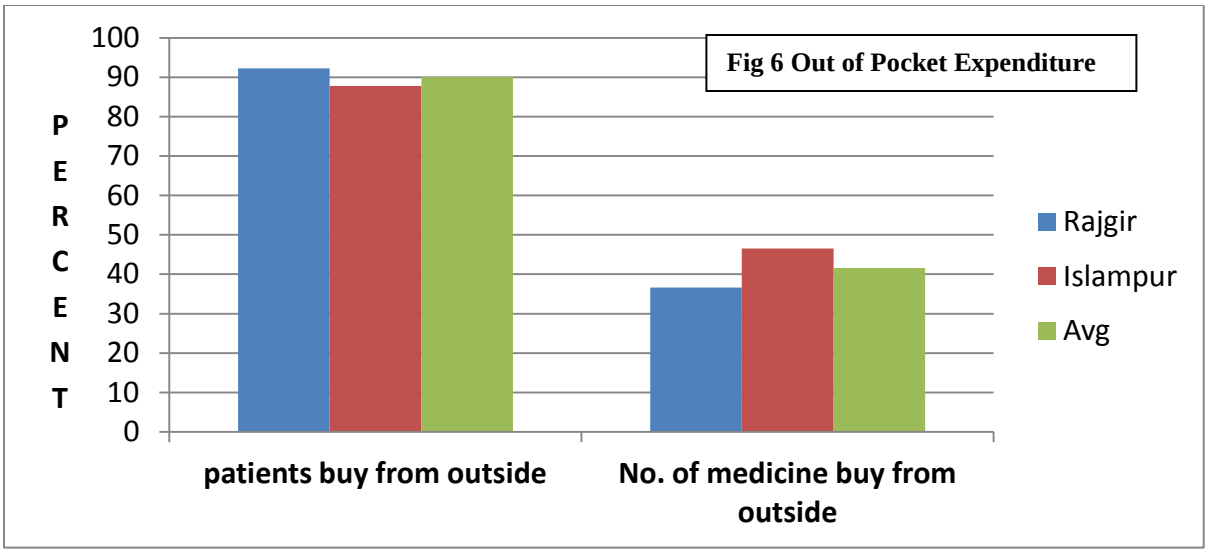


3.5.5 Out-of Pocket Expenditure

Government of Bihar had announced the free distribution of drug to all. Out-of-pocket expenditure was determined to find how much the patient still has to spend on medicine from his pocket despite government scheme of free drugs.

As shown in Figure 6, it was found that about 90.05% of patient had to buy at least one medicine prescribed to them from private pharmacy store, in which 92.3% were in Rajgir and 87.8 in Islampur.

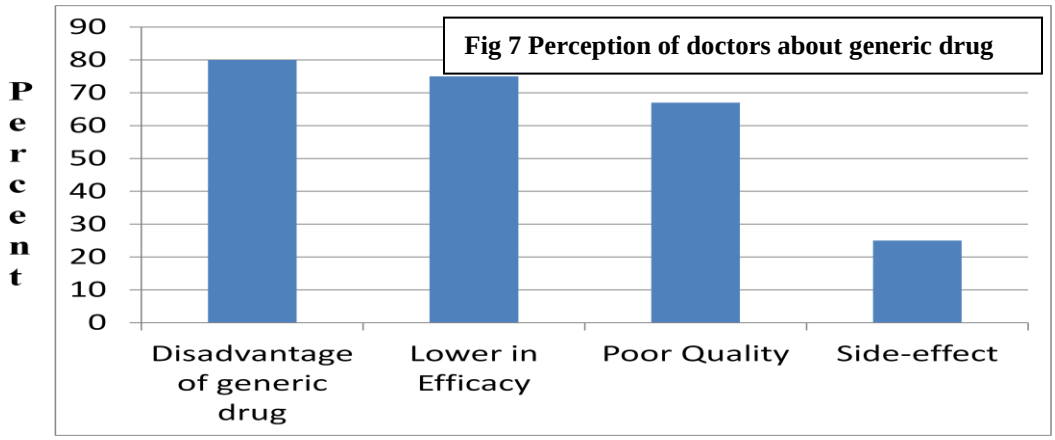
Again, of all the medicine prescribed to patient, 41.6% of them were required to buy from private pharmacy shop due to non availability of medicine, which includes 36.63% in Rajgir & 46.57% in Islampur as given in fig 6.



3.5.6 Perception about Generic Drug among Doctors

This was done to understand the perception of doctors about generic drugs in Rajgir and Islampur at hospitals a separate questionnaire was prepared to assess their perception about generic drug. An interview of 15 doctors was taken at HOSPITAL Sub-division and Referral of Rajgir & Islampur respectively.

As shown in Figure 7, 80 %(12) of the doctors had the perception that there is a disadvantage of using generic drug. Out of which 75 %(9) had a belief that they lower in efficacy as compared to their branded counterpart & 25 %(3) even had a thought that using of generic drug may cause side-effects.



Chapter-4 Observation

Observations were made during visit to facilities in Rajgir and Islampur, most important information which were found to be effecting drug use directly or indirectly are mentioned below;

- **Lack of coordination:** At Sub-division hospital in Rajgir lack of coordination between doctors and pharmacist was found to be the reason. Pharmacist were not informing about the availability of drugs to doctors, so that doctors can modify their prescription accordingly and can opt for their available alternative (eg: nimuselide for PCM). As a result of this doctors continuously prescribed such medicine which were not available at government facility and which forces the patient to buy medicine from outside.

- **Unavailability of drugs at facility** There were 75 & 65 different medicines which patients have to buy from outside in Rajgir and Islampur respectively due to non availability of medicines at public facilities.

- **Significant difference between no. of OPD patient registered and the no. of patient registered at pharmacy (addition of allopathic, homeopathic & ayurvedic):** Ideally the number of patient registered at OPD registration counter should be equal to the number of patients to whom the drug were dispensed at all the pharmacy counter (allopathic, homeopathic, ayurvedic). But the significant difference was found at both of hospital in Rajgir as well Islampur. There was an average difference of about 25.68% (table 3). It means there were a significant number of patients who buy medicine directly from outside without enquiring about it at government pharmacy and these were those who are not included in this study.

- **Table 3: Difference between patients registered at OPD and Pharmacy**

Hospital	Difference (%)
Sub-division (Rajgir)	17%
Referral (Islampur)	34.36%
Average	25.68%

It shows either these patients already knew about the non availability of these medicines at public facility or they were advised by doctors to buy medicine from outside.

Chapter-5 Recommendations

1) **Drug Management Information System (DMIS):** Computers and internet can be used in all aspects of the drug management cycle, from selection to use. They are capable of manipulating text and numbers and practicing newsletters, forms, reports, tables, graphs and charts. Using communication devices, users can exchange or share this information with other computers at the same site via local area network (LAN) or with computers anywhere in the world.

   By using such system in drug management it greatly helps to maintain the availability of drug at every public facility. As the main reason for which the patient buys medicine from outside was the non availability of medicine at public pharmacy store. DMIS can update the daily record of medicine dispensed to patient and the medicine which required in nearby future.

2) **Generic Aushadhalaya:** This study was just restricted to Sub division and block where the market of branded medicine is negligible but in reality there is a huge market share of branded drugs in the open market which causes a huge expenditure of money on medicine by common people. So to combat with this curse, Generic Aushadhalaya in open market can help to a great extent in reducing the expenditure on medicine.

3) **Regular in service training (online):** Doctors need to be updated about the drugs and medicine. Often Continuing In-service Medical Education (CME) activities are heavily dependent on the support of pharmaceutical companies, as public funds are insufficient. This type of CME may not be unbiased**.** Governments should therefore support efforts by university departments and national professional associations to give independent CME.There is a problem of funds for such training, so it can be implement through online which will be cost effective and equally efficient as long training session organized by the huge expenditure of resources.

4) **Increase awareness about Generic Drug:** It is found in this study that many doctors have misconception about the generic drugs. They consider it less effective and of poor quality as compared to branded drugs. It is essential for to educate the healthcare service providers as well as the patients about the benefits of generic drugs and promote its use.. So it is very essential for the doctors to have faith on generic medicine available at government facility. For this purpose there is a need to develop some IEC (Information Education & Communication) material which can create awareness and develop the faith of doctors on the efficacy of generic drugs about the generic drugs,.

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Annexure

Questionnaire for Patients

CONFIDENTIAL, for research purpose only

State Health Society Bihar – Rational Use of Drug 2013
Prescribing Pattern & Patient Knowledge Assessment Form

Questionnaire Identification Number ☐☐☐	
State Name:	**District Name:**
Hospital name:	
Name of the Patient:	
Date of R_x:	Diagnosis:
Phone number of the House hold member :	
Respondent's name :	

INTRODUCTION

Namaste. My name is Archit Sinha and I am conducting a study about the rational use of drug in Bihar. We would very much appreciate your participation in this survey. Several different patient care indicators will be discussed including cost of medicine. This survey usually takes between 5 to 10 minutes to complete. Whatever information you provide will be kept strictly confidential and will not show to other persons.

Participation in this survey is voluntary and if you choose to participate, you may withdraw at any time. However we hope that you will take part in the survey since your participation is important.

May I begin the interview now?

Respondent agrees to be Interviewed …….1 Q1

Respondents does not agree to be interviewed...2 END

Interviewer Name: Signature:

Date:

S.No	Question	Response
1.	**Prescribing Indicator(to be filled by an interviewer through analyzing prescription)**	
1.1	Total number of medicines prescribed	
1.2	Number of medicines prescribed by generic name	
1.3	Do prescription prescribed with an antibiotic?	1.Yes 2.No
1.4	Do prescription prescribed with an injection?	1.Yes 2.No
1.5	Number of medicines prescribed from an Essential Medicine List (EML)	
2.	**Patient Care Indicator**	
2.1	What is the average consultation time?(in min)	
2.2	What is the average dispensing time?(in min)	
2.3	Number of drugs adequately labeled	
3.	**Knowledge of patient**	
3.1	Diagnosis	1.Correct

		2.Incorrect 99.Don't Know
3.2	Duration of therapy	1.Correct 2.Incorrect 99.Don't Know
3.3	Frequency of doses	1.Correct 2.Incorrect 99.Don't Know
3.4	Dosage form of medicine	1.Correct 2.Incorrect 99.Don't Know
4.	**Out of Pocket Expenditure**	
4.1	How many medicines dispensed from public facility?	
4.2	Have you purchased any medicine from private pharmacy?	1.Yes 2.No⟶If No end the interview
4.3	How many medicines you have purchased from private store?	
4.4	What is the cost of medicine purchased from private store (in Rs)?	
4.5	What is the reason to buy the medicine from private pharmacy shop?	1.Non availability of medicine at public facility 2.Long waiting time 3.Bad behavior of pharmacist/dispenser 4.They make clear understanding about usage of medicine 5.Lower efficacy of drugs provided by Government 5.Other:

Questionnaire for doctors

Confidential For Research Purpose Only

State Health Society, Bihar

Knowledge and Perception of Physician about Generic Drug Assessment Form

Questionnaire Identification Number	☐☐☐
State Name:	**District Name:**
Hospital name:	
Name of the Doctor:	

Hello sir/ma'am, my name is Archit Sinha and I am conducting a study about the rational use of drug in Bihar. We would very much appreciate your participation in this survey. It would contain few questions about the generic drug. This survey usually takes between 5 minutes to complete. Whatever information you provide will be kept strictly confidential and will not show to other persons.

The participation in this survey is totally voluntary.

May I begin the interview? 1. Yes

2. No

S.No.	Question	Response
1.	Do you know about Generic Drug?	1.Yes 2.No
2.	What do you understand by the term Generic Drug? (options need not to be given)	1.Bioequivalent to branded 2.Identical to their Branded form

		3.Drug with chemical name 4.Don't Know 4.Other
3.	Do you know about the term Bioequivalent?	1.Yes 2.No→If no, go to Q5
4.	Can you please define it?	
5.	What are the characteristics of Generic Drug? (options need not to be given)	1.Cheaper 2.Contain same active ingredient 3.Bioequivalent 4.Identical to their branded form 5.Equal in efficacy 6.Safe in use 7.Dont Know 8.Other
6.	Is there any regulatory body for Generic Drug	1.Yes 2.No } Go to Q7 3.Dont Know }
6.	What is the name of this body?	1.FDA 2.IPA 3.Need not to be approved 4.Dont know 5.Other
7.	Is there any disadvantage of using Generic Drug?	1.Yes 2.No } Go to Q9 3.Dont Know }
8.	What are these disadvantages?	1.Lower in efficacy 2.Causes side-effects 3.Will betage of money 4.Poor quality 5.Other
9.	Do you prescribe Generic Drug to your patient?	1.Yes→end the interview 2.No
10.	What are the reasons for not prescribing Generic Drug?	1.Demand of patients 2.Lack of knowledge 3.Lack of awareness 4.Non availability 5.Influence of pharma companies 6.Other
