CENTRE FOR NORTH EAST STUDIES AND POLICY RESEARCH

HEALTH LOGISTICS: Prevailing System in Boat Clinics and Scope for Improvement

SUKHREET BAJWA
3/23/2012

ACKNOWLEDGEMENTS

Health Care Logistics is an area which is very important in the field of Disaster Management and very dear to me as well. I extend my gratitude to Managing Trustee, Mr. Sanjoy Hazarika, who approved my internship with C-NES. Working with C-NES allowed me to explore my area of interest. I thank CEO, Dr. Dipankar Das under whose guidance I completed this report.

I take this opportunity to thank Mr. Amrit Bora, DPO Dibrugarh, who coordinated my field trips, Mr. Dulu, DPO Dhemaji, who left no stone unturned to make my stay comfortable in Dhemaji. I thank RVC who helped me with accommodation in Dhemaji. I am grateful to pharamicsts and doctors to patiently provide me with data. I thank NRHM Programme manager of Dibrugarh and Dhemaji to share their knowledge with me. I thank Dr. Tulika Goswami who helped me understand UNICEF's role in Dibrugarh. I thank Dr. Talukdar to accompany me to the interiors of the village and translate my questions to the community as well. I thank nurses and family planning counselor of Dhemaji who made me feel at home during my stay.

Above all, I thank the community members for accepting me and providing me with data during their busy working hours. I thank my family and friends who supported me emotionally throughout the six weeks of my internship in Assam. I thank Sunny, Anukshya, Arhat, Rinky, Kamal, Swapnil who helped me with my own logistics of stay and travel.

ABSTRACT

Health Care Logistics includes all the activities required to be done to make health care reach the people on time and in an efficient way. This paper focuses on documenting the various dimensions which affect logistics- Governance, Human Resource, Information, Finance and Materials with more specified focus on Material Management.

The data has been collected from field trips to camps in Dhemaji and Dibrugarh and interviews with district NRHM project coordinators and media managers and UNICEF project coordinator. The stock data analysis shows gaps in demand assessment and lack of scientific method for demand forecasting. There is no re-order point fixed. The graphical assessment shows huge gap between demand and supply. The mode coefficient of variation for the data is more than 1 which shows huge irregularity.

The study concludes that the existing logistics system in boat clinics needs to be improved by including effective data management and imparting training to the pharmacists on drugs management. A socio-economic profile of the district can be prepared to dig deep into the cause of the health problems and tilt the health approach from clinical mode to social model. A sample profile is suggested in the paper. The system of reverse logistics needs to be in place for better utilization of drugs having short life and disposing of medical waste.

One of the strengths of boat clinics is its wide acceptance among the community which can be used effectively to initiate many other programmes. Also, boat clinics can become a useful asset in the domain of disaster management as well. The paper leaves scope for the study and data to be taken up further in other districts to assess the logistics situation, do a comparative study and base the future strategy on it.

TABLE OF CONTENTS

List of Figures

List of Tables

Annexure

Tables of data collected on Drugs issued, supplied and balancing stock of Dhemaji and Dibrugarh

1. INTRODUCTION

1.1 HUMANITARIAN LOGISTICS:

Logistics includes all the operations which are required to meet the end needs of the beneficiaries. The concept of logistics was born in military during the Second World War when it was required to provide soldiers who were on the field with essential supplies to keep them going. Logistics has slowly found its place in commercial world and is now also known as Supply Chain Management. In the commercial world, the importance of supply chain management is to reach the customers well on time and make the right product available at the right time. While in a commercial scenario, the motive is to increase profits by lowering the logistics cost or by cashing in the unexplored market before competitors arrive. However, while the basic concept of logistics remains the same, in the field of humanitarian assistance, the motive is to make the right product available at the right time and the motive is to save more lives in less time. Humanitarian organizations have now realized the importance of logistics e.g. during emergencies, 80% of the response depends on logistics. While logistics cover all the operations required to meet the survival needs of people during emergencies, this paper is focused on Health Logistics.

1.2 HEALTH LOGISTICS:

Health needs are the most basic for human survival.. Livelihoods, incomes, status of livings, everything depends on the health of a person. Health care is not delivered equitably in our country and there is a dire need to focus on basic health care needs.

Hospital logistics is well developed in India. In the case of posh hospitals where money buys treatment for the riches and health care logistics at primary level remains deprived. In this paper, the current state of health logistics will be explored through a case study on Center for North East Studies and Policy Research(C-NES).

1.3CENTER FOR NORTH EAST STUDIES AND POLICY RESEARCH:

Center for North East Studies and policy Researchs is a pioneer non- profit institute working on delivering basic health care needs to isolated people living on islands of Brahmaputra. C-NES operates boat clinics to reach the islands. The existing system on boat clinics is very unique in the domain of public health care delivery. Boat clinics were started in 2004 when Mr. Sanjoy

Hazarika, managing trustee of C-NES, visualized the concept. Initially, there was just one boat called Akha – A ship of hope which operated in Dibrugarh district. Later on a memorandum was signed with Department of Health, Govt. of Assam to work in coordination with NRHM to provide for health needs.

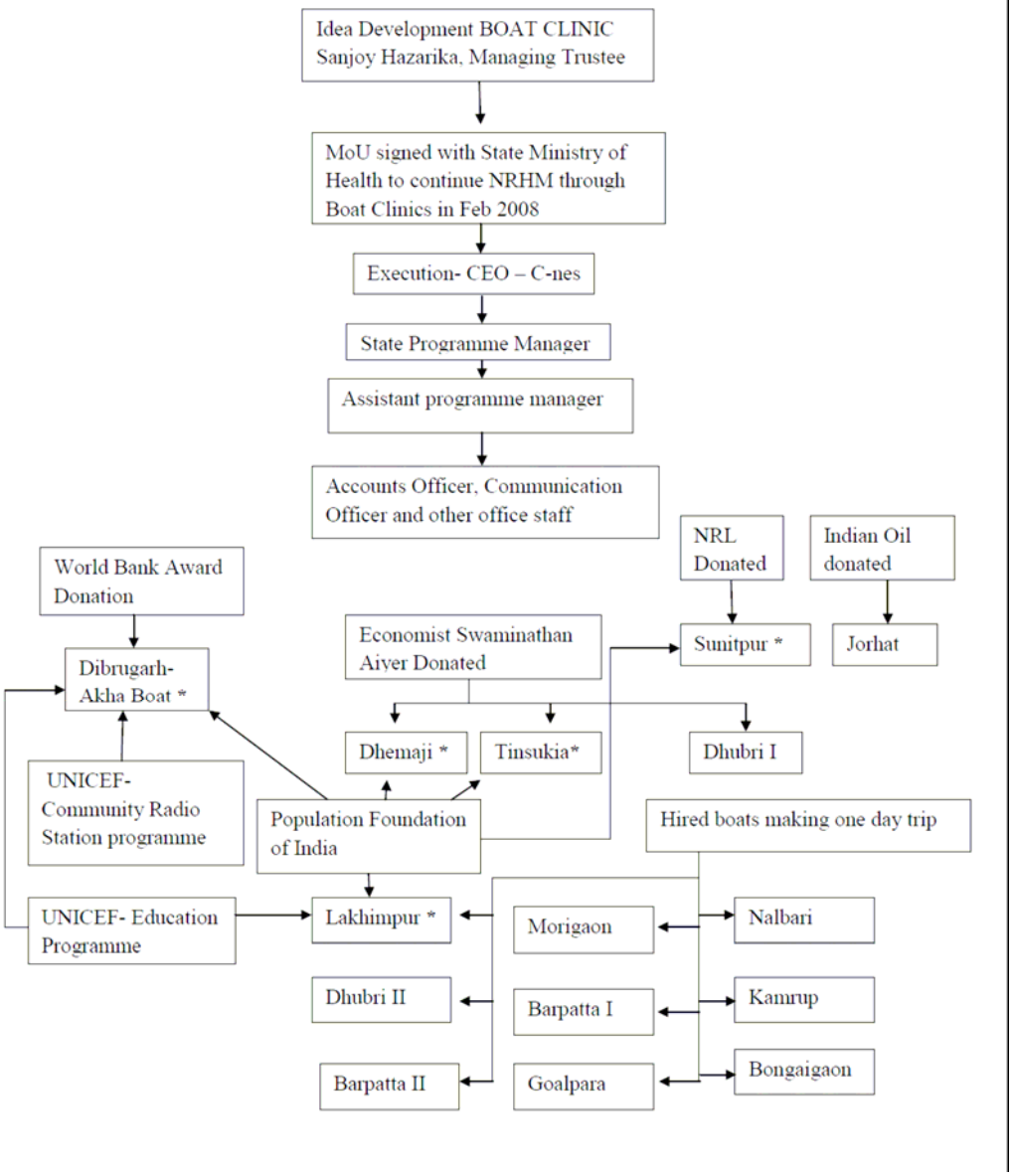
1.4 GOVERNANCE FRAMEWORK:

There are three organizations involved in the governance structure with UNICEF (Not after April 2012) funding the Dibrugarh boat, the education project and a Community Rradio Station project; Population Foundation of India funding the family planning project and NRHM funding the health care delivery project. C-NES was started in the year 2000 as a trust under Sec.80G/Income Tax Act 1961. In the year 2004, the idea of BOAT CLINICS won award at World Bank and Akha was started. After that, in February 2008, a MoU was signed with State Department of Health (NRHM) to carry out operations of boat clinic under NRHM. The governance structure with respect to boat clinics can be described as follows:

Six districts have boats donated by different people and organizations. These boats have a facility of housing a laboratory, medical equipments, drugs, vaccines, kitchen, washroom and lodging for staff members. Other seven districts operate on hired boats making one day trips to the islands. NRHM supports all the health related functions. UNICEF is supporting education programme in two districts- Lakhimpur and Dibrugarh. A new project of Community Radio Station is also supported by UNICEF in Dibrugarh district. Population Foundation of India has appointed family Planning counselors in five districts – Lakhimpur, Dhemaji, Dibrugarh, Sunitpur and Tinsukia.

1. There are 15 BCs in 13 districts: Dhubri has 2 BCs and so does Barpeta.
2. State Government have departments, centre has Ministries: A subtle but specific difference.

3. Figure 1.1 Governance Structure



2. LOGISTICS ASSESSMENT:

The logistics assessment is a complete review of all the available resources and services, means and conditions which are necessary for flow of information and goods throughout the supply

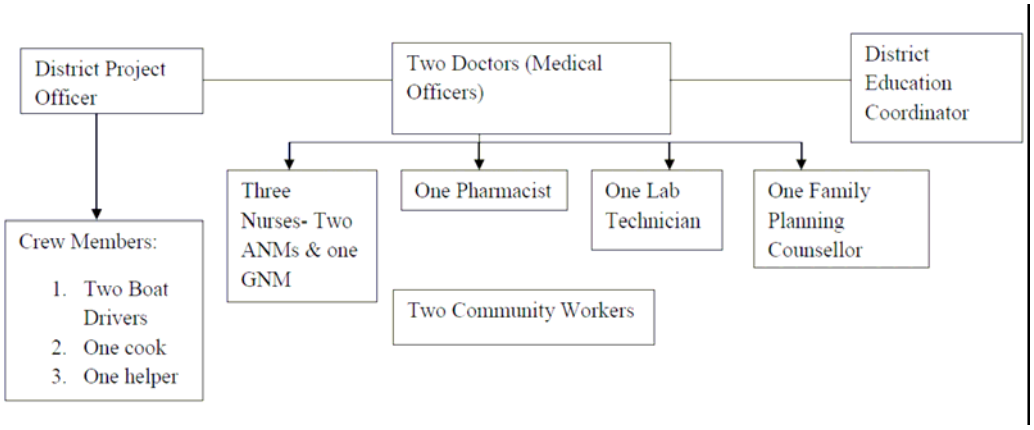
network. Logistics are an important part of executing the operations on field. Hence, a logistical assessment of the boat clinics will be beneficial to improve efficiency.

2.1 HUMAN RESOURCE MANAGEMENT:

The staff is recruited by C-NES. Funds for staff come from three different projects: UNICEF, NRHM and PFI.

The staff works in close coordination with DPO as he is responsible to carry out operations in the field and also look after every staff member. The atmosphere in the boat is more of an informal and family like where everyone helps each other. To maintain a healthy atmosphere is important as the boat has to stay for three days on camp and not sharing a cordial relations with colleagues can hamper the performance of staff.

Figure 2.1 Human Resource Structure



The following diagram shows informal hierarchy in the staff structure. The district education coordinator is funded by UNICEF, family planning counselor is funded by PFI, rest of the staff is funded by NRHM. The community workers act as a major asset in developing relations and gaining acceptance with the community

2.2 INFORMATION FLOW:

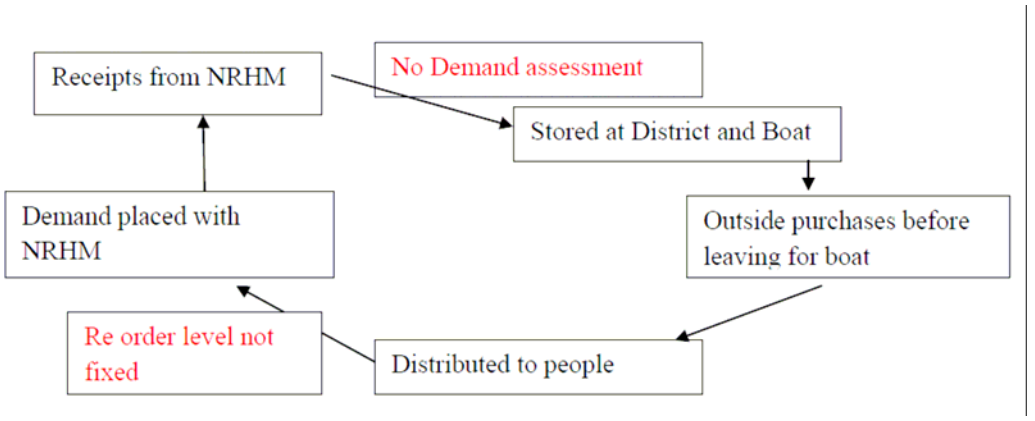
Information flow happens vertically only. Information flow takes place both top to bottom and bottom to up. The information flow happens in a hierarchy. The strategic and major decisions are taken by CEO and executed by district project manager which are coordinated by state project manager. Information channel is not by passed and follows the hierarchy. The state coordinators are free to implement the projects in their own creative and efficient way. They are required to direct the district project officers on execution of the projects.

2.3 FINANCE FLOW:

Funds flow is just uni-directional. For different programmes, different organizations provide funding. The drugs and medical equipments are provided free of cost by NRHM to the boat clinics. The salary of health staff is provided by NRHM as well. PFI funds the family planning counselor's salary and State Coordinator and UNICEF funds district education coordinator's salary.

2.4 MATERIAL FLOW:

An assessment of material flow determines the strategy adopted and people involved in handling the material. An analysis of material flow is required to assess the gaps and strengthen the weak areas in the chain. Also, material is the core of supply chain. Right material to right people at right time determines the success of supply chain strategy. **Figure 2.2 Material Flow**



The drugs cycle shows a gap at demand assessment point. There is no scientific basis for deciding future order for demand. The re-order point is not calculated. The graphical analyses shows a gap between demand and supply. The mode coefficient of variation of demand is more

than one in both the districts. Also, in some cases, the coefficient of variation goes up to more than three. Although there is no fixed percentage of balance stock with respect to issued stock, it varies from 0% to 100%.

2.5 SUPPLY CHAIN STRATEGY:

The current supply chain strategy is more of *push* based where drugs received are distributed to people without assessment of demand from the community. Also, the supply chain is more tilted towards being *responsive* rather than efficient. The fire fighting mentality of the staff keeps them from preparedness and calculating the right amount of buffer stock required to be kept. There is no coherence of demand either between two districts or seasons. The data analysis does not show any trend of one drug being used more in one particular season or area. Drugs are just received from NRHM and distributed even if they are not required. This is depicted through data analysis of drugs issued from the year 2010 to present. In many cases, drugs are received even when there is enough stock available while in other cases, drugs are not received even at zero balance. The attachments in the annexure show the variation in the drugs issued as well receipts.

3. RECOMMENDATIONS:

3.1 SUPPLY CHAIN SOLUTION:

Building of any strategy requires actual data from the field. Analysing, the past data, few drugs can be eliminated from the process of ordering further. Constant check on supplies made by the pharmacist can put things in place. Also, if the data regarding supplies and issued drugs can be maintained in softcopy, then it will be easier to analyse and get quick results. Also, since, public health demand cannot be forecasted in an accurate way, IDSP data can be used to find trend of diseases with respect to seasons and geographical areas which can further be used to forecast the quantity and type of medicines required in a particular area in a particular time. (Excellent point, make it manadatory)

Also, an assessment of socio-economic profile of the community, one can identify the kind of diseases, the community will be prone to. The supply chain strategy should be focused on *managing the supplies in the chain*. The transport component of supply chain in this case is limited from city to boat and then the villages. Hence, the only way to gain efficiency is by focusing on supplies, eliminating the wastage and delivering the right product on time.

3.2 REVERSE LOGISTICS AND WASTE DISPOSAL:

Reverse Logistics happens but not in an effective way. The drugs are returned to district store manager only when they are expired. However, the demand must be assessed before hand and drugs be returned earlier so that they can be used at some other area. Besides drugs, the logistics of waste material is not being considered. The medical waste is left on the camp only. There is no provision of a dust bin in the boat and everything is thrown in the river. (This goes against my infrastructure and any ecological principles. Bio degradable waste is ok but not non biodegradable?)

3.3HEALTH CARE APPROACH:

The current approach of delivering health is a healthy mix of curative and preventive approach. While, doctors treat the patients, they also advise on healthy ways of living. Medicines are combined with supplements for faster recovery. Also, awareness camps are held from time to time to promote health. However, inclusion of a public health worker along with doctors can help catalyse the process of preventive approach to health. While doctors are busy treating patients, a public health worker can visit those who do not make it to the health camps for various reasons. One such example is children having pot belly which doctors diagnosed as

worm infestation. This was identified in village called *Balisapori*. However, since children do not complain of stomach ache, they do not come to doctors and hence remain devoid of deworming treatment. In this case, a public health worker can identify such more cases and also promote wearing slippers and avoid baring open wounds to mud. Promotion of such activities can be planned by public health worker. While a family counselor only suggests family planning and is more worried of achieving a target number of NSB, LS and CTs performed; a public health worker can prepare a socio-economic profile of the villages and identify social causes of health problems. Following is a socio economic profile of one sample village visited during camp visits.

Table 1.1 Socio-Economic Profile

Name of Village	Surangsriboro	Koilavali Burman island includes 7 villages	Badalpur Burman	Dusuti Balisapori
Number of houses	45	No information	No information	27 Houses
Female to male ratio	212/196	No information	No information	61/69
Livelihood status	Agricultural Farmers- Pig rearing and selling, Fishing, Vegetables and pulses grown	Agricultural Farmers and Pig rearing, Fishing, Vegetables and pulses grown	Agricultural Farmers	Agricultural Farmers, goat rearing, cattle
Access to market	Costs Rs. 75per one way trip to Dhemaji market. People visited market during fairs and festivals and to sell pigs. Agricultural produce was not	Private boats to sell vegetables and Pig.	Private boats as well as passenger ferry. People preferred to go to hospitals in city.	People had private boats to reach Dibrugarh market to sell agricultural produce.

	sold in market.			
Community/ Tribe	Assamese Hindu and Bodo people	Koch Rajbonshi-came from western Assam due to economic reasons	A mix of Bengali and Assamese. Hindu Religion. Migrated from Cooch Bihar & Goalpara as their land was swept away by river.	Migrants from Bihar and few Mishing tribe people.
Education status	One primary school 1-5 (not yet recognized by Govt.)	One middle level school	One Primary school (not yet recognized by Govt.) People paid Rs. 150 for admission and Rs. 30 per month as tuition fee. The school building was constructed through MLA's provision of funds	One primary school started under education programme of C-NES, supported by UNICEF
Provision of mid day meal	No	Yes	No	Does not apply.
Number of children enrolled	20	No information	95	Approx 20

Existence of PDS	No PDS, No rations cards allotted	Only 5-10 households had ration card. 4 households had BPL card. People had their names in voting list but still no ration cards.	Yes. In another village after crossing a river channel	Yes. In a nearby village
Colour of Ration card held	Does not apply	No information	No information	Ration card held by few people only.
NREGA	Village embankments and community toilets built under NREGA	Village interior pathways built by people under NREGA	No information	No information
Nearest Sub center	No Information			In mainland -
Status of village ASHA	One ASHA (No village health day celebrated) Conflict with village women, No HCH kit received	One ASHA for many villages. No village health day celebrated	One ASHA.	One ASHA.
Average Family Size	4 children per household	4-5 children per family	3 children per household	3 children per family
Average Age of women getting married	16 years	16 years	15 years	18 years

Cases of Domestic Violence	Three Households	Few cases but no concrete information	No information	Nil
Existence of Dowry	Nil	No information	Yes. Around Rs. 5000 and more paid as dowry	Yes.
Existence of quack or a para medic	Yes Quack	No information	Para medic who sells drugs	No information

Analysing the above socio-economic profile, we get to know about the status of women, education, livelihood status and reach of government programmes inside rural areas. One cause of anaemia in women can be early marriage which leads to early child bearing and then a cycle of weak child growing up as a weak adloescent adult begins. One cause of early marriage is eloping of girls at the initiation of puberty and then marrying. This requires awareness programmes and counselling on such issues to young girls which does not form part of family planning counselor's job.

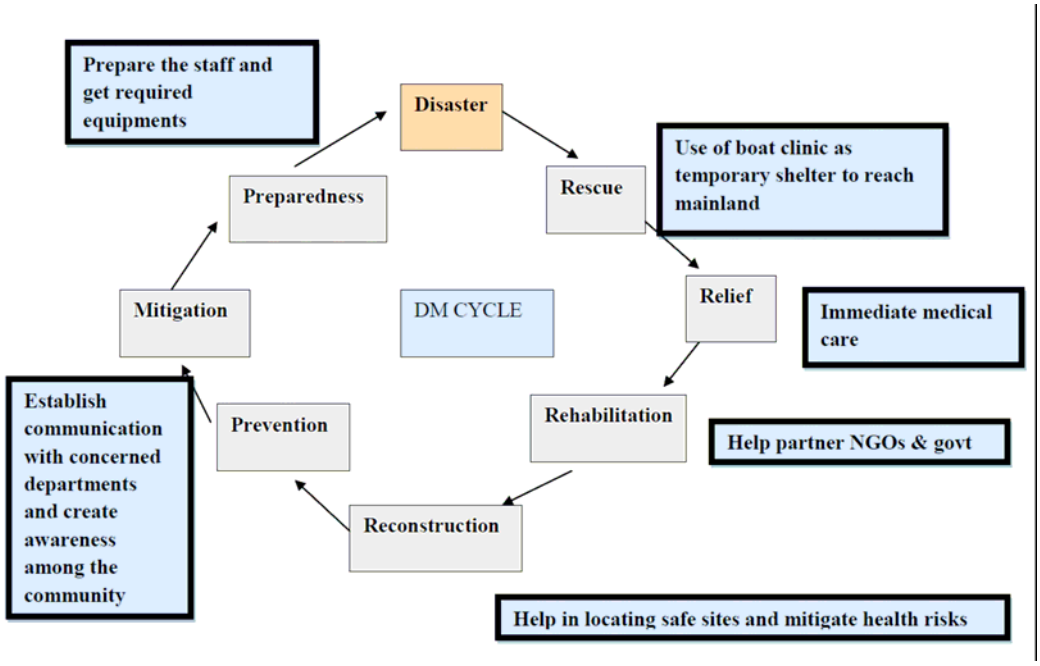
Hence, as part of the recommendations, either some of the existing staff, preferably DPO be trained on Public health approach rather than curative approach. This will bring in another angle to solve health problems from the grassroots. (Excellent then we do not need addational person)

3.4 USE OF BOAT CLINICS DURING DISASTERS:

Boat clinics are very useful in case of disasters. They are in fact the best way to reach people isolated by river waters and not only rescue them but also provide immediate medical attention. The Disaster management cycle includes four phases: In the preparedness phase, boat clinics can help build resilience of the community. The public reach of boat clinics can serve as an essential link of the community with the outside world as well government. With inclusion of a public health worker, many social issues can also be taken up along with providing medical care.

During rehabilitation and mitigation phase as well, boat clinics can strengthen the process by providing continuous medical support and transportation to reach the villages. Also, boat clinic enjoys good level of acceptance from the community which can be cashed in by many participating organizations working immediately after a disaster.

Figure 3.1 Boat Clinics in Disaster Management



4. CONCLUSIONS

The study concludes that the existing logistics system in boat clinics needs to be improved by including effective data management and imparting training to the pharmacists on drugs management. This report can be shared with DPOs and they can reflect on the current system of logistics management. The DPOs can be trained on accessing and analysing the drugs data and supervising the supply orders. A socio-economic profile of the district can be prepared to dig deep into the cause of the health problems. Further research can be taken up on this topic in other districts to assess the prevailing logistics system and future logistics strategy be based on data analysis. (Rational during use)

BIBLIOGRAPHY

1. Guire, G. M. (2011). Handbook of Humanitarian Health Care Logistics: Designing the Supply Network and Managing the flows of information and Health Care Goods in Humanitarian Assistance during Complex Political Emergencies.
2. Chopra, S. and Meindl, P.(2004) Supply Chain Management: Strategy, Planning and Operation. Pearson Prentice Hall