

Evaluation of services provided for Malaria control in four high endemic PHCs of Jaipur, India

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ABSTRACT

Background: Malaria is an ancient disease having a huge social, economic, and health burden. Even after more than half a century of continuous efforts against it, it still remains a major public health problem.

Aim: To evaluate the services provided at PHC, Sub-centre and village level.

Methods: Four high endemic Primary Health Centres (Annual Parasite Incidence more than two) with their Sub-centres, one Accredited Social Health Activist (ASHA) and four patients from each Sub-centre area were selected from Jaipur district. Data on various activities and services provided were recorded in predesigned, pretested and modified schedule designed by Directorate of National Vector Borne Disease Control Program (NVBDCP).

Results: 26.66% of selected patients received treatment within 24 hours of slide collection and 61.66% received complete treatment. None of the concerned staff was trained for NVBDCP at selected PHCs and Sub-centers. Among the 15 selected ASHAs, none were found involved in malaria control activities.

Conclusion: Sustainable improvement in malaria control activities and services was not achieved and was not comparable with the program objectives.

Keywords: malaria, endemic, services, PHC, RDT, ACT, ASHA, hatcheries.

INTRODUCTION

Malaria is a major public health problem in Rajasthan.¹ Jaipur has turned into potential breeding site of mosquitoes due to increasing developmental projects which led to frequent outbreaks of malaria. There is an upsurge in recent past due to extension of canals and irrigation areas. Despite being the focused, total malaria cases have rather increased in last decade. There were 1527 cases in 2000 which rose to 1697 in 2011.² The study was intended to evaluate the services provided for malaria control in four high endemic PHCs of Jaipur district of Rajasthan; highlights the regional scenario, considering the programme performance in this context.

MATERIAL AND METHODS

A cross-sectional, descriptive, observational study was conducted in four high endemic PHCs of Jaipur district during Jan-Dec'2011. Out of the total 96 PHCs in the district, four high endemic (API >2; based on 2010 data³) PHCs were selected randomly. All Sub-centres of selected PHC's; one Accredited Social Health Activist (ASHA) from each Sub-centre village and 4 patients from each Sub-

centre area were randomly selected. Thus, 4 PHCs, 15 Sub-Centres, 15 ASHAs and 60 patients were included in the study. The indicators used were percentage of available staff and their training status, availability of facilities like anti malarial drugs, reporting formats, functional diagnostic facilities, stock register maintainence; percentage of malaria cases receiving prompt (treatment started within 24 hours of onset of symptoms) and complete treatment (completed 3 days Chloroquine and 14 days Primaquine in vivax and 3 days Artesunate Combination Therapy (ACT) and single dose of primaquin in case of falciparum malaria)⁴, percent change in morbidity and mortality due to malaria and hatcheries present and maintained in that area. Ethics Committee clearance was obtained. Schedule designed by Directorate of NVBDCP for evaluation of malaria control measures was pretested in the field and suitably modified according to the existing situation.⁵ Data were collected from different levels of study areas by personal visits and recorded in modified schedule of Directorate of NVBDCP. Data were classified and analyzed with SPSS software 20th version. Inferences were presented in the form of percentages and proportions.

RESULT

At PHC level, 81.25% of sanctioned staff was found working in position. None of the interviewed staff (Medical officer, Lab Tech, Sector Supervisor and Multi Purpose Worker (MPW), ANMs (Auxiliary Nurse Midwife) was trained for NVBDCP at any of the visited PHC's. All the 15 selected ASHAs neither involved in malaria control activities nor were trained for NVBDCP.

Chloroquin tablets were available at 44.12% of selected facilities. It was available at all the selected PHC's and 73.33 % of selected Sub-Centres. Primaquin (7.5 mg) tablets were available at only 20.58% of selected facilities. It was available at 75 % of selected PHC's and 26.26 % of selected Sub-Centres. Primaquin (2.5 mg) tablets were available at 8.82% of selected facilities, 25 % of selected PHC's and 13.33 % of selected Sub-Centres. ACT packs for adults and children were not available at any of the selected facilities. None of the selected ASHAs were having anti malarial drugs. None of the selected PHCs were having Rapid Diagnostic Test (RDT) kits for rapid diagnosis of malaria as per program guidelines. Stock register for anti malaria drugs was maintained at 75 % selected PHCs and 20% of selected Sub-Centres.

M1 format (report of surveillance) was available at 75% of selected PHC's and 60% of selected Sub-centres whereas none of the selected ASHAs were having M1 format. M2 reporting format (request for slide examination) was neither available at any of the selected Sub-centre nor with ASHA. M3 format (record of slide examination in PHC laboratory) was available at 75% of selected PHCs, whereas M4 format (fortnightly report of malaria cases) was available at 75% of selected PHC's. None of the selected Sub-centres were having M4 format. Seventy five percent of selected PHC laboratories were equipped with functional binocular microscopes, staining material (JSB stain- I and II) and tap water supply. Laboratory Standard Operating Procedure (SOP) was not available at any of the visited PHC. None of the selected PHCs were maintaining hatcheries. MPW bring fishes from district headquarters in a tin container to replace them in ponds.

Only 26.66% of selected patients received treatment within 24 hours of slide collection and a total 61.66% of selected patients received complete treatment in the selected PHCs (Table-1). Malaria indices did not show sustainable improvement during last three years, on the contrary there was 102% increase in malaria cases during 2010 in comparison to 2009 (Table-2).

Table -1. PHC wise distribution of selected malaria cases with prompt and complete treatment

Name of PHC	Total pts interviewed	Pts. received prompt treat (%)	Pts. received complete treat (%)
Banskhoh	20	6 (30.00)	12 (60.00)
Rojwadi	16	5 (31.25)	11 (68.75)
Sakhun	12	3 (25.00)	8 (66.66)
Gagardu	12	2 (16.66)	6 (50.00)
Total	60	16 (26.66)	37 (61.66)

Table -2. Year wise change in malaria morbidity

Year	Number of malaria cases				Total cases	Percent Change(+/-)
	Banskhoh	Rojwadi	Sakhun	Gagardu		
2008	37	146	42	5	230	
2009	14	103	46	12	175	-23.91
2010	87	152	76	39	354	+102.00

DISCUSSION

Malaria is endemic in India, with an estimated 70-100 million cases each year (1.6-1.8 million reported by NVBDCP); distributed throughout the country and an estimated >90% population (2001 population 1.13 billion) is at risk of the disease. Malaria surveillance is carried out at fortnightly intervals through a multi-purpose worker (MPWs) scheme at the village level, the active case detection (ACD). Blood film from fever cases are also collected at the Primary Health Centers (PHCs) and malaria clinics, called the passive case detection (PCD).

As per the guidelines of NVBDCP-2009, ASHA has the responsibility of collecting blood smear of all fever cases. This study observed that none of the selected ASHAs were involved in malaria control activities similar to an earlier study in 2009.⁶

As per the report of Joint Monitoring Mission National Vector-borne Disease Control Program of

India (2007) 67% of health facilities in India had a microscope. Present study found that 75% of selected PHCs were having functional microscopes. However, Prasad H (2009) reported that all the nine laboratories of the studied districts were found equipped with good quality microscopes and trained laboratory technicians.

As per the report of Joint Monitoring Mission by National Vector-borne Disease Control Program of India (2007)⁷, 41% of health facilities had RDTs in India. As per the Guidelines of NVBDCP (2009), RDT should be provided to CHCs/ PHCs for emergency use and at Sub-centres in remote, inaccessible areas and or with API > 2 and Pf % more than 30 %. In contrast, our study report that none of the selected PHCs were having RDT kits for rapid diagnosis of malaria.

As per the report of Joint Monitoring Mission National Vector-borne Disease Control Program of India (2007), The first-line antimalarial drugs i.e. chloroquine tablets and primaquine were available in 85% of health facilities in the four states surveyed. However this survey report that Chloroquin tablets were available at less than half of selected facilities and ACT combi-blister packs were not available at any of the selected facility. According to the Guidelines of NVBDCP (2009), hatcheries should be constructed and maintained at every PHC and fishes are to be replenished regularly in them. We found that none of the selected PHCs were maintaining hatcheries. The proportion of fever cases receiving timely treatment (29%; 2007)⁷ is nearly same in our study

(26.66%) to the selected patients.

NVBDCP needs to keep up-to-date with the existing deficiency as well as look up for new developments in malaria control. These are the strengthening small hospitals and developments in Integrated Vector Management.

CONCLUSION

Malaria has always been a major public health problem of the country. There are major deficiencies in programming and execution to combat the problem. Based on finding of our study the following actions may be initiated. a. strengthening malaria surveillance and laboratory services for reliable data collection; b. adopting intense measures for impact of the preventive methods; c. complete training of various categories of health staff; and ensuring timely procurement of supplies, distribution, monitoring and evaluation of drugs and other requirements.

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