



URBAN MALARIA SCHEME AND OTHER VECTOR BORNE DISEASE CONTROL PROGRAMME

Proceedings of the Workshop Meeting

Held at Delhi

On 28-29th June 2012

**Directorate of NVBDCP
22 Sham Nath Marg,
Delhi 110054**

CONTENT

1. Executive summary
2. Background
3. Inauguration of the Meeting
4. Objective of the workshop
5. Technical session
 - ? Presentation of disease burden
 - ? Malaria
 - ? DHF
 - ? Chikungunya
 - ? JE< making in roads - Delhi
 - ? Filariasis
6. Experts presentation (both outside/NVBDCP)
7. Presentation by participants
 - ? High lights
8. Recommendation – group formation and TOR of each group.
9. Recommendation (All groups together)
 - ? For state/corporation
 - For NVBDCP

1. Executive Summary:

In urban areas malaria accounts for 10 to 12% of total cases in the country and has emerged as important paradigm. In addition, the incidence of other vector borne diseases viz. Dengue/Dengue Hemorrhagic Fever, Chikungunya, Japanese Encephalitis and Filariasis have emerged as equally important paradigms.

Keeping in this view the Directorate of NVBDCP planned a review meeting of Municipal Health Officers, Biologists / State Entomologists of major Mega Urban Corporations / State Govts. and Experts to review the Urban Malaria Scheme (UMS) to recommend ways and means to improve the working of the UMS. Brief of recommendations covered the following thematic areas.

? Manpower, Health Infrastructure – Augmentation

All units of Urban Malaria Scheme should assess main power requirement for strengthening of entomological surveillance keeping in view the large scale developments and increasing limits of towns and population growth.

Logistics support, equipments and mobility of entomological teams under the supervision of Entomologist/ Biologist or Assistant Entomologist be actively considered for entomological and parasitological surveillance.

Regular basic and reorientation training courses for insect collectors, laboratory technicians at various levels, involving Dte. of NVBDCP may also be actively considered. Crosschecking of various activities under Urban Malaria Scheme has become more essential in view of high potential breeding sources of malaria and dengue vectors in Urban and Peri-Urban areas.

? Integrated Vector Management

The Urban Malaria Scheme implementing states should develop IVM implementation plan including M&E component with legislation wherever applicable.

Strengthening of entomological capacity is essential for implementation of IVM. Dte. of NVBDCP would be the nodal agency and coordinate for training programmes for entomologists and vector control personnel at town Municipal Corporation levels.

Urban Malaria Scheme implementing states should establish a mechanism for inter-sectoral collaboration and communication to high risk areas for implementation of effective IVM. The Dte. of NVBDCP for promotion of implementation of IVM and sharing of expertise will provide support for strengthening capacity building.

Public private partnership and community involvement should be encouraged for vector control activities for successful IVM implementation.

? Civil and building construction bye-laws

For control of breeding of malaria and dengue vector, effective civil and building bye-laws are essential in urban areas particularly in metro cities keeping in view large scale developmental activities, immigration of and conglomeration of labour force. These situations create high breeding potentials of vector breeding of vectors require more concentrated effort for control through legislation.

? **Inter-sectoral coordination**

For effective implementation of vector control strategies in urban situations an effective Inter-sectoral coordination is required for sustainable achievements. The local Municipal bodies under Urban Malaria Scheme should develop a mechanism for effective coordination of various sectors for control of vector borne diseases.

? **Need for health impact assessment – selection of eco-friendly design prototype of desalination plants and rain water harvesting devices.**

Metro cities and towns have been developing fast in terms of population and construction. Most of the towns and metro cities face acute shortage of potable water essential for day-to-day human activities. In view of shortage of water being encountered by Municipal bodies, rain water harvesting is being advised and National Capital Territory of Delhi has recently passed an order for installation of rain water harvesting devices in buildings. These need health impact assessment and eco-friendly design under a prototype assessed by National Vector Borne Disease Control Programme and local municipal bodies.

2. Background:

The National Vector Borne Disease Control Programme (NVBDCP) is an umbrella programme for prevention and control of vector borne diseases (VBD), viz., Malaria, Lymphatic Filariasis, Kala-azar, Dengue, Chikungunya and Japanese Encephalitis (JE). These diseases pose major public health problems and hamper socio-economic development. Generally the rural, tribal and urban slum areas are inhabited mostly people belonging to low socio economic groups which are more prone to VBDs and are considered as high risk groups.

The Urban Malaria Scheme (UMS) was launched in 1971 with the objective to control malaria by reducing the vector population in the urban areas through source reduction and recurrent anti-larval measures, case detection and complete treatment of malaria cases through the existing health services. Population migration to urban and peri-urban areas is increasing leading to unplanned urbanization, large scale urban conglomerations prone to VBDs and mega construction activities with vertical growth of cities.

The Urban Malaria Scheme (UMS) was approved during 1971 as 100% centrally sponsored scheme. From 1979-80 it was changed to 50:50 sharing basis between centre and state governments. The UMS scheme was scaled up in phased manner by including 23 towns in 1971-72; 5 in 1972-73; 87 in 1977-78; 38 in 1978-79; 12 in 1979-80 and 17 in 1980-81 making total towns of 182. Since states have the responsibility of providing human resources and infrastructure, the scheme could be implemented only in 131 towns for which Govt. of India is supplying anti-larval insecticides. The drugs are made available through states. At present Urban Malaria Scheme is protecting about 116 million populations from malaria and other mosquito borne diseases in 131 towns. Following the outbreaks of dengue and chikungunya, UMS was also entrusted with additional responsibility for control of other vector borne diseases in urban areas.

Current Disease Burden of Malaria in urban areas:

Increase in contribution of urban malaria to country's caseload from 7.79% (1996) to 10.87 % (2011) has been recorded in the country. In 2011, 142502 cases have been recorded in the urban areas out of 1.31 million cases recorded in the country. The year wise morbidity and mortality data in the urban areas is given in table 1:

Table 1: Population, malaria cases and deaths in urban areas (2004-2011)

Year	Population	Total cases	P.f. cases	Deaths
2004	95814228	150917	19659	62
2005	102423064	135249	14905	96
2006	105782505	129531	17278	145
2007	112448027	102829	18038	125
2008	113334073	113810	18963	102
2009	114699850	166065	31134	213
2010	116136978	206498	32665	146
2011	130316971	142502	13910	147

Malaria incidence reported in 2011 in 19 states under UMS is given under table 2:

Table 2: Malaria incidence in 19 states under UMS in 2011

States/UTs	Population	B.S.C. & E.*	Positive Cases			SPR	SFR	Pf %	Deaths
			P.v.	*P.f.	Total				
Andhra Pradesh	8413357	586654	5379	93	5472	0.93	0.02	1.70	0
Jharkhand	934152	24653	1216	294	1510	6.13	1.19	19.47	0
Gujarat	10913351	1296599	14322	4370	18692	1.44	0.34	23.38	78
Haryana	7181263	353014	2899	213	3112	0.88	0.06	6.84	0
Jammu	650000	3077	60	6	66	2.14	0.19	9.09	0
Karnataka	1890684	43583	103	9	112	0.26	0.02	8.04	0
MadhyaPradesh	4988496	785964	1935	110	2045	0.26	0.01	5.38	0
Maharashtra	23262058	2256824	36975	3432	40407	1.79	0.15	8.49	69
Nagaland	187660	1777	52	178	230	12.94	10.02	77.39	0
Manipur	326000	0	0	0	0	0.00	0.00	0.00	0
Orissa	807244	18703	68	459	527	2.82	2.45	87.10	0
Punjab	5079339	195920	148	12	160	0.08	0.01	7.50	0
Rajasthan	19423402	128974	340	16	356	0.28	0.01	4.49	0
Tamil Nadu	7715813	434721	25410	445	25855	5.95	0.10	1.72	0
Uttar Pradesh	16481137	72136	1436	65	1501	2.08	0.09	4.33	0
West Bengal	5330664	237458	37442	4200	41642	17.54	1.77	10.09	0
Tripura	167351	451	0	0	0	0.00	0.00	0.00	0
Chandigarh	1090000	70344	395	7	402	0.57	0.01	1.74	0
Delhi	15475000	374090	412	1	413	0.11	0.00	0.24	0
Total	130316971	6884942	128592	13910	142502	2.07	0.20	9.76	147

* Blood slide collected and examined ** *Plasmodium vivax* ****Plasmodium falciparum* (SPR) Slide Positivity rate (SfR) Slide falciparum rate (Pf%) *P.falciparum* percentage

The epidemiological situation for the year 2011 Table-3 revealed that the urban towns covered under the scheme contributed 10.9 % population of total cases of malaria in the country, but contributed 19.52 % to malaria deaths 10.87% of total cases of malaria and 2.10 % of *P. falciparum* cases in the country.

Table-3: Population of urban towns in relation to total population, case load, Pf cases and deaths.

Country level	Population (in millions)	Total cases	Pf. Cases	Deaths
Country total	1194.9	1310367	665068	753
Total cases in urban towns (131)	130.3 (10.9 %)	142502 (10.87 %)	13910 (2.10%)	147 (19.52 %)

The analysis of the contribution of major metro cities like Chennai and Mumbai in the state population and malaria morbidity /mortality is included in Table-4. It is apparent that 67.3% cases of malaria in Tamil Nadu are contributed by Chennai Corp. while it contributes only 6.4% to the State population. Similarly, Mumbai Corp. contributes 43.8 % to the case load and 61.7 % of deaths due to malaria in Maharashtra while it only contributes 12.2 % to the State's population as shown below:

Table-4: Population of 4 Metro in relation to total population, case load, Pf cases and deaths

State level	Population (in million)	Total cases	Pf. Cases	Deaths
Tamil Nadu	72.53	22171	925	2
Chennai Corp.	4.7 (6.4%)	14927 (67.32 %)	196 (21.20%)	0 (0.00%)
Maharashtra	111.65	82677	14995	94
Mumbai Corp.	13.6 (12.18%)	36230 (43.8%)	2764 (18.4%)	58 (61.7%)

In urban areas, large number of people avail Medicare services from the private sector. The reporting system from the private sector is practically nil. Therefore actual malaria disease burden is much more than the reported burden. The hospitals in the cities/towns also provide referral services to malaria cases including the severe and complicated forms of malaria from the catchments areas of the cities/ towns.

Considering the disease burden due to VBD's in urban areas and difficulties faced in the implementation of Urban Malaria Scheme, meeting was organized in the Directorate of NVBDCP, Delhi on 28th-29th June 2012 wherein the programme managers from different major urban towns and metros were invited to review the status of Urban Malaria and other Vector Borne Diseases Control Programme in Metros/ towns and to make recommendations for strengthening of Urban Malaria Scheme.

3. Inauguration of the Meeting:

The meeting was held under the chairmanship of Dr. G. Sharma, Dy. Director General of Health Services, GoI, New Delhi and in presence of Dr. L. S. Chauhan, Director, NCDC and Mr. Atin Ghosh, Member, Mayor in Council (Health & Slum Development), Kolkota Muni. Corporation (KMC).

Dr. A. C. Dhariwal, Director NVBDCP welcomed the participants. It was followed by a brief round of introduction of the participants. The list of the participants is given at the Annexure. Dr. Dhariwal desired the participants to share their experience regarding the implementation of the urban malaria scheme in their respective urban areas and come out with the suggestions for

improving the implementation of the same including the innovative methods and good practices which has helped them to achieve the VBD control objective in their towns

Dr. L. S. Chauhan, Director NCDC mentioned that in recent years the incidence of VBDs are increasing in urban areas and this is the right time to discuss the problem and find out the solutions for the same. He emphasized that there can be different strategies available for controlling the diseases but the ultimate goal is to control malaria and other VBD's.

Mr. Atin Ghosh, Member, Mayor in Council (H & Slum Development), Kolkota Muni. Corporation in his address said that involvement of political leaderships in such discussions helps the municipal authorities to facilitate the decision making and he congratulated the Director, NVBDCP for inviting him in this discussion. He briefly described the actions taken by the KMC for prevention and control of malaria and other VBDs and how it has helped in reducing the disease burden.

Dr. G. K. Sharma DDG, MOH&FW, GoI, also agreed that urban malaria is a problem and it is spreading to other areas. He wished that the deliberations will help the programme to come with practical solution to the problem.

4. Objective of the Review Meeting :

☞ To identify the problems in implementing Urban Malaria Scheme

- ? Review status of VBD morbidity and mortality
- ? Need for situation analysis for development of IVM strategies
- ? Review available alternative strategies

☞ To identify the strategic interventions for VBDs based on the analysis in relation to

- ? Diagnosis and treatment
- ? Vector Control
- ? Supportive interventions

☞ To finalize the recommendation for improving the implementation of UMS

5 & 6. Technical Session:

Dr. R.S.Sharma, Additional Director, NVBDCP briefly presented the current status of Urban Scheme and the status of VBDs in the major urban areas. He also discussed about the plan for implementation of UMS in the 12th Five Year Plan.

Dr. Kalra, Consultant WHO discussed about the need for Health Impact Assessment (HIA) at the planning and designing stage of small to large Development /Construction projects, so as to prevent the establishment of mosquitogenic conditions by adopting eco-friendly design and technology.

Dr. J Bhattacharjee Consultant (LF/JE) briefed the status of National Filaria Control Programme including the vacancies, weaknesses, under-utilization of their services and suggested various ways and means for its improvement.

Dr. K. S. Gill discussed about the integrated vector management, various available vector control measures and how to use them judiciously based on the local entomological situation and available resources. He also emphasized the importance of vector surveillance for deciding the local vector control measures with the help of entomological unit.

Dr. G. S. Sonal, Additional Director discussed about new initiatives introduced in the programme regarding diagnosis and treatment of malaria. He emphasized on increasing surveillance for early diagnosis with the help of Rapid Diagnostic Tests and microscopy. He briefed that now the programme is planning to introduce bivalent RDT which will help reducing the microscopy load in *Pv* predominant areas. He emphasized on quality microscopy services beginning from slide preparation to communication of final results. Regarding treatment he briefed that now all case of *Pf* is to be treated with Artemisinin-based Combination Therapy (ACT) for which different blister packs with different colour are made available in the programme.

Dr. Roop Kumari Jt. Director, NCDC and DR. B.N.Nagpal, Scientist E, NIMR discussed about the basics of entomological surveillance and how they can be helpful to take decisions on entomological surveillance and the vector control measures.

Dr. Asutosh Biswas, Prof. AIIMS, discussed about the features of dengue and its control measures including the treatment and management of such cases.

7. Presentation by States Representatives:

The presentations were made by the Officers from the major metros and urban towns as follows:

1. Kolkata Muni. Corporation
2. Mumbai Muni. Corporation
3. Delhi Muni. Corporation
4. Chennai Muni. Corporation
5. Ahmedabad Muni. Corporation
6. Vijaywada Muni. Corporation
7. Bhopal District Malaria Officer

The major constraints identified during the presentation are:

- ✍ **Increasing urbanization:** The proportion of urban population to the total population has increased in the last few decades which is mainly by migration of population from rural to urban areas for earning livelihood and also attraction for availing both Medicare and education opportunities etc.
- ✍ **Unplanned Urbanization:** Haphazard and unplanned growth of towns has resulted in creation of “urban slum” with poor housing and sanitary conditions promoting vector mosquito breeding potential for malaria, filaria and dengue fever/ Dengue haemorrhagic fever.
- ✍ **Supply of drinking water:** Deficient/restricted water supply has led to water storage practices in artificial containers which have generated breeding potential of *An.stephensi* vectors of urban malaria and *Aedes aegypti*, the vector of DF/DHF
- ✍ **Development project without Health Impact Assessment (HIA):** Development project activities without health impact assessment have resulted in malaria outbreaks in short terms and endemic malaria with foci of *P.falciparum* resistance strains in long term. The out breaks of malaria and DF/DHF are common occurrence. Increase in malaria cases in Mumbai are examples of this kind.
- ✍ **Inadequate health infrastructure:** With rapid growth of population in urban towns, existing staff strength has not corresponding strengthening and is therefore inadequate for service delivery.

- ? **Vertical growth of urban areas:** Vertical growth has led to new avenues of vector breeding including essential storage of water at ground and top level for fire fighting.
- ? **Poor management of solid waste disposal:** Has led to accumulation of rain water in tyres, canes, bottles etc. breeding both *An.stephensi* and *Ae. Aegypti*.
- ? **Drainage of storm water drains:** Storm water drains, if not de-silted become ideal breeding place of both *An.stephensi* and *Ae.aegypti*.
- ? **Sullage & sewage disposal:** Underground sewerage system has become “heaven” for breeding of *Culex quinquefasciatus* – vector of filariasis.

These constraints have resulted into: i) Non-implementation of scheme as per UMS norms in State / local bodies), ii) Increase in VBDs: Malaria (Mumbai, Chennai, Kolkata & Mangalore), iii) Increase in malaria mortality (Ahmedabad, Mumbai) and iv) Increase in Dengue, Chikungunya cases (Delhi, Ahmedabad, Bangalore & Gurgaon) resulting high mortality.

8. Group formation for formulation of Recommendation:

Three groups were formed to discuss the identified thematic areas and come out with the recommendations for respective areas as follows:

Group – A : Participants from Mumbai, Ahmedabad, Rajkot, Vadodara, Dahod, Bhopal and Ujjain

Chairman: Dr. Arun R. Bamne
Reporter : Dr. V.K. Kohli
Resource person: Dr. K.S.Gill, NVBDCP

Terms of Reference

1. Adequacy of health infrastructure – Need for Augmentation specified norms
2. Discussion on Vector surveillance: vector species *An.stephensi* and *An.culicifacies* new avenues of breeding due to horizontal and vertical expansion of urban areas.
3. Discussion on Vector control strategies: Integrated vector management approach based on situation analysis.

Group – B: Participants from Chennai, Salem, Ramanathapuram, Bangalore, Mangalore, Hyderabad and Vijayawada

Chairman : Dr. M. Satyanarayan Raju
Reporter : Dr. Lokesh MN
Resource persons: Dr. N.L.Kalra, Dr. Sher Singh

Terms of Reference

1. Modification of civil and building bye laws- examine adequacy of Bombay Act
2. Inter-sectoral coordination
3. Health impact assessment of small to large developmental projects in urban areas – need for selecting eco-friendly design and technology to promote environmental and engineering methods of control.
4. Drainage of storm water drains(s)
5. Solid waste disposal
6. Adequacy of sullage & sewage system
7. Evaporation coolers – adoption of eco-friendly design
8. Need for eco-friendly design of desalination plant, rain water harvesting

**Group C : Participants from Kolkata, Chaibasa, Daltonganj, Bokaro, Hazaribagh,
Sambalpur, Dimapur, Delhi, and Chandigarh**

Chairman- Dr. N.K. Yadav

Reporter – Dr. Devesh Patel

Resource Person: Mr. J.Nandi, NVBDCP

Terms of Reference

1. Discuss challenges in the implementation of new treatment policy - early detection and complete treatment - challenges and solution.
2. IEC – BCC campaigns particularly school children and public at large.

9. Recommendations:

Based on the discussions and presentation, the groups recommended following actions for each thematic areas:

Manpower health infrastructure

- ? Entomological strengthening
- ? Human resource
 - ✍ Entomologist – one (Senior scale)
 - ✍ Assistant Entomologist – one (Junior scale)
 - ✍ Four insect collectors , one supervisor -per 10 wards (50 sq.kms)
 - ✍ Entomological laboratory technician- Two lab. Technicians for 5 million populated city
- ? Logistics – equipments and mobility
- ? Capacity building
- ? Insect collectors training, State, Central level basic, reorientation courses

[Action: -All Municipal Corporations / Local Bodies / State Govts.]

Integrated Vector Control Management

Building construction bye laws/

- ✍ Formulating Model Act for corporations for control of *An.stephensi*, *An.culicifacies* and *Ae.aegypti*.
- ✍ Amendment in act to suit VBD control,
- ✍ **Modification of Building Bye laws:**
 - ✍ Exterior structure design should not hold rain water. construction bye laws/
 - ✍ Water holding structure during construction should be dismantled before issue of completion certificate.

Situation analysis

Mix up of old (environmental, engineering and biological) and new chemical control

For example:

- ? Building Construction Sites-
- ? Basements, masonry, MS tanks-Larvivorous fishes
- ? Odd articles, scraps, pits-source reduction
- ? Provision of gradient in storm water drains.
- ? Curing tanks – Replace water curing by chemical curing, otherwise anti larval treatment regularly

[Action: - All Municipal Corporations / Local Bodies]

Norms for field worker for building constructions

- ? Duty hours: 7 hr per day
- ? Time for collection of equipments, logistics and time for to and fro from site: 2 hrs, lunch-half hr
- ? Available working hrs- 4 and half hrs.
- ? Average time by a worker to climb one floor and cover approx. 1000 sq mt area takes 15 minutes
- ? Average floors at one site- 5 (5000 sq mts.).
- ? $5 * 15 \text{ minutes} = 75 \text{ minutes}$
- ? $4 \text{ and half hrs.} = 270 \text{ minutes.}$
- ? Average nos. of buildings covered by one worker are $- 270/75 = \sim 4 \text{ building}$

Management of labor colonies- IRS, fever surveillance

Developers office- water storage, AC unit, drainage

Training- Site engineers, safety officers, and agencies under taking pest control activities.

Coordination – Builders organization, architects association, plumbers association etc.,

Building construction bye laws/ ACT- formulating act for corporations

Amendment in act to suit VBD control, Building construction controlling deptt (eg. Estate, Chief engineer) to coordinate and implement

[Action: - All Municipal Corporations / Local Bodies]

Civil and building bye laws:

To resolve the problem of Urban VBDs, model and uniform Civil and Building bye laws are to be framed for the entire country incorporating following additions or modification to the existing and effective Mumbai Municipal Corporation Building Byelaws:

1. In addition to MMC Building Byelaws, Sanitary/ Health Clearance Certificate shall be insisted from Health Department of Municipal Corporation before issuing Occupancy Certificate.
2. The owner or construction manager of building should take care of the health of the mason workers and provide facilities for early detection and complete treatment of malaria cases and to comply with all the instructions of Health Officer/ Biologist in this regard.
3. To take up the above work owner of building may be asked to deposit such an amount as prescribed by commissioner.

[Action: - All Municipal Corporations / Local Bodies / State Govts.]

Inter-sectoral coordination

- (i) All small to large development projects must be submitted to health department for health impact assessment at designing and planning stage that mitigating measures should be incorporated at designing stage.
- (ii) There should be a Inter-sectoral coordination committee (ISCC) in all the cities.
- (iii) The chairmanship of ISCC will be District Collector, Municipal Commissioner as the member Secretary and CMO/HO of Health Department will be the convener.

- (iv) The other members will include from sector of Agriculture, Irrigation, PWD, Water works, Fisheries, Pest control, Education and representative of RWAs and PRIs.
- (v) Every year there should meet before monsoon with check list for each deptt. and subsequent review meeting to know the progress in implementation of the action plan so that to fill up the gaps if any and to implement lesson learnt from this year experiences for the subsequent year.

[Action: - All Municipal Corporations / Local Bodies / State Govts.]

Health impact assessment of small to large developmental projects in urban areas – need for selecting eco -friendly design and technology to promote environmental and engineering methods of control.

1. The health section of corporation should conduct Health impact assessment of small to large developmental projects in urban areas at designing and planning stage so that mitigating measures should be incorporated at that stage.
2. Subsequent to this Health impact assessment the health section will suggest the necessary steps to be taken based on their observations.
3. The ISCC may sought suggestions from engineers for eco-friendly design and technology to promote environmental Health and engineering methods for control of VBDs.

[Action: - All Municipal Corporations / Local Bodies / State Govts./ NVBDCP, Delhi]

Early Detection and Complete Treatment-Implementation of New Treatment Policy:

- ✍ As there is no role of presumptive treatment, so treatment has to be started on confirmation of diagnosis
- ✍ First dose to be given by a health personnel as far as possible
- ✍ If relative comes instead of patient – relative should be motivated for observed treatment and later on a health worker can confirm.
- ✍ Ask for empty blister packs at end of treatment
- ✍ Intermittent supervision for primaquine to ensure compliance
- ✍ Worker explains that this is in concurrence with the prescription of doctor. Worker may show the prescription on demand.
- ✍ Printed guidelines to be made available and doctor to suggest the drug regimen to be followed.
- ✍ Motivation of people
- ✍ Re-orientation programme for Medical Officers
- ✍ Involvement of IMA members for Orientation
- ✍ Involvement of Medical College Teachers for orientation
- ✍ Updated drug policies to be conveyed regularly to Medical Colleges so that students are made aware of the same.
- ✍ Changes to be made in Textbook of Medicine/Preventive Medicine
- ✍ Display of National Drug Policy in Health Centres.
- ✍ To figure out if there is an availability of dispersible or liquid form of ACT for the use by Pediatricians.
- ✍ Training of Health workers
- ✍ Confirmation by Microscopy
- ✍ Reporting by Private laboratory to be made compulsory
- ✍ All Vector-Borne Diseases should be declared as a ‘Notifiable’ disease.

- ✍ Staffing pattern of Malaria clinic to be outlined in National Guidelines so that uniformity be maintained
- ✍ Qualification of LT's to be defined in National Guidelines:
 - ✍ Need to be have a diploma course for LT; Till then
 - ✍ LT may be derived from common field supervisory staff after training
 - ✍ Make use of Private labs by payment on basis of number of slides examined.
- ✍ Number of Malaria Clinics may be Increased based on needs
- ✍ Fever Cases / Population
- ✍ Create awareness among practitioners regarding Importance for peripheral smear examination
- ✍ To impart training to teachers of life-science or Biology
- ✍ Teachers should in turn disseminate information to the students

[Action: - All Municipal Corporations / Local Bodies / State Govts./ NVBDCP, Delhi]

Information, Education and Communication / Behaviour Change Communication:

- ✍ To introduce IEC in the School curriculum – Primary and Secondary schools
- ✍ Intensify IEC Activities in local language through:
- ✍ Awareness campaign/s by Celebrities
- ✍ Involvement of Local Councilors (Political)
- ✍ Involvement of Religious leaders
- ✍ National Policy for Provision of free or subsidized IEC slot/space:
- ✍ Electronic Media Theatres

[Action: - All Municipal Corporations / Local Bodies / State Govts.]

Recommendations for NFPC

After a discussion by the house following recommendations were adopted in relation to NFPC:

1. Govt. may formally withdraw NFPC and replace it with Elimination of Lymphatic Filariasis programme
2. All Filaria Survey Units and Filaria Control Units may be functionally integrated with district based VBD control activities.
3. All Filaria Clinics may be functionally integrated with Govt. hospitals.
4. Central budget of NFPC for vector control may be merged with IVM budget of NVBDCP.

[Action: - All Municipal Corporations / Local Bodies / State Govts./ NVBDCP, Delhi]

Annexure:**LIST OF PARTICIPANTS, FACULTIES & SUPPORTING STAFF FOR REVIEW MEETING ON
28TH & 29TH JUNE, 2012**

S.No.	NAME & designation	Contact No.
1	Dr. L.S.Chauhan, Director , NCDC	01123913148
2	Dr.G.K. Sharma DDG, MOH&FW, Govt. of India	
3	Dr. A.C.Dhariwal, Director , NVBDCP	01123918576
4	Dr. N.L. Kalra, Ex- CCO,NVBDCP Delhi	011-22509210,098734 13336
5	Mr. Atin Ghosh, Member, Mayor in Council (H & Slum Development), Kolkata Municipal Corporation	9830555111
6	Dr. T.K. Mukherjee, Dy. Chief Municipal Health Officer & Officer on Special Duty (Health), Kolkata Municipal Corporation	9830039970
7	Dr. Debasis Biswas, Sr. Vector Control Officer & Chief Entomologist, Kolkata Municipal Corporation	9830277664
8	Dr. Satyanarayana Raju, CMOH, Vijayawada Municipal Corporation	9866514149
9	Dr. Arun R. Bamne, Executive Health Officer, Municipal Corporation of Greater Mumbai	9920759858
10	Dr. Mangala Gomare, Assistant Health Officer (Surveillance) Municipal Corporation of Greater Mumbai	022-23083664
11	Mr. Upendranath Singh, Asst. Insecticide Officer, Municipal Corporation of Greater Mumbai	9869401137
12	Dr. Mahalakshmi. S, Director, Communicable Disease, Chennai Municipal Corporation	9444495327
13	Mrs. C. Kalaiamutha, Chief Vector Control Officer, Chennai Municipal Corporation	9176661716
14	Dr. N.K. Yadav, Municipal Health Officer, South Delhi Municipal Corporation, Delhi	9811052728,011-23226903
15	Dr. B.Hazarika, Additional Municipal Health Officer, South Delhi Municipal Corporation, Delhi	9811374099
16	Dr N.R. Tuli, Dy. Health Officer , South Delhi Municipal Corporation	9999185808
17	Dr. Lokesh M N, Health Officer, Bangalore City Corporation	94806831575
18	Mr. Mahendra Pal, Biologist, Hazaribagh, Jharkhand	9939633408
19	Mr. Baldeo Prasad Singh, Biologist, Daltonganj Jharkhand	9431339436
20	Mr. Vijay Kumar, Biologist, Chaibasa, Jharkhand	9931154787
21	Mr. Purushottam Prasad Agrawal, Biologist, Bokaro, Jharkhand	9431733990
22	Mr. V.N.B. Rao, State Entomologist, Odisha	9439996545
23	Dr. D. Shalini Devi, Chief Medical Officer, Greater Hyderabad Municipal Corporation	9849006074
24	Mr. T. Ratna Joseph, Chief Entomologist, Greater Hyderabad Municipal Corporation	7702304800
25	Dr. Devesh Patel, Medical Officer, Vadodara Municipal Corporation	9687606671
26	Mr. Gautam Gangera, Biologist, Vadodara Municipal Corporation	9825117904
27	Dr. Padmakar Tripathi, District Malaria Officer, Bhopal	9425012338
28	Dr. K.C. Parmar, District Malaria Officer , Ujjain	9425332394
29	Mrs. Vaishali Girdharvhai Rathod, Biologist, Rajkot, Gujarat	9624094671

30	Mr. Kikulul, Biologist, Dimapur, Nagaland	9856448243
31	Dr.V.K.Kohli, Assistant Entomologist, Ahmedabad Municipal Corporation	9376175338
32	Dr. Naresh Kumar, Assistant Director, Urban Malaria Scheme, Chandigarh	09417239421,0172-2740404
33	Dr. Aruna Jain, Additional Director, NVBDCP, Delhi	011-23967745
34	Dr. R.S.Sharma, Additional Director, NVBDCP, Delhi	9958678110,011-23962884
35	Dr. Avdhesh Kumar, Joint Director, NVBDCP, Delhi	23990002
36	Dr. G.S.Sonal, Additional Director, NVBDCP, Delhi	9999317129
37	Dr. K.S.Gill Joint. Director, NVBDCP, Delhi	9971407774
38	Dr. Kalpana Baruah, Joint Director, NVBDCP, Delhi	1123990017
39	Dr. Roopkumari, Joint Director, National Centre for Disease Control, Delhi	9818191494
40	Dr.Sher Singh, Assistant Director (PH), NVBDCP, Delhi	9968283266
41	Prof. (Dr.) Ashutosh Biswas, All India Institute of Medical Sciences, New Delhi	9968304243
42	Dr. B.N.Nagpal, Scientist-E, National Institute of Malaria Research, New Delhi	9810895280
43	Sh. J.Nandi, RO, NVBDCP, Delhi	9968103180
44	Dr. H.G.Thakor, Consultant (M&E), NVBDCP, Delhi	9433005789
45	Dr.M.Joshi Consultant (Training), NVBDCP, Delhi	9313412897
46	Dr.J.Bhattacharjee, Consultant (LF), NVBDCP, Delhi	9818552169