TOWARDS A TEN POINT STRATEGY FOR MALARIA / DENGUE CONTROL IN MANGALORE

(Some points for Discussion)*

1. NOTIFICATION AWARENESS

On 13th March, 1988, the Government of Karnataka notified Malaria / JE / Dengue fever as notified infectious diseases under the Karnataka Public Health Act.

(a) Are doctors and health care providers aware of this notification?

(b) If so, how effective has the post-notification response been? Are we more aware of the magnitude of the problem?

(c) If not, how do we make more health care providers aware of this notification and their responsibilities?

(d) Are there other groups in society who should be made aware of this notification? If so, how?

2. MANGALORE CITY CORPORATION BYE-LAWS

Bye-laws have been prepared by the City Corporation and forwarded to the government for action

i) What has been the follow up action
ii) In everyone aware of the contents of the bye-laws
iii) The Mangalore bye-laws are different from the Bangalore bye-laws in some section. Is every one aware of the differences?
iv) Has the Corporation Health authorities geared up to enforce the bye laws? Can anything further be done in preparation?

3. STUDY OF VECTOR DYNAMICS

NMEP and MRC have constantly stressed the need for local assessment of specific vector dynamics so that local action can be focussed around specific local realities

i) Do we know enough about the local vector species to initiate action?

ii) Do we need further studies to understand the vector dynamics of all potential mosquito vectors in Mangalore?

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At KMC, Attavar on 6 - 7th April, 1999

iii) Have the MRC visiting teams studies helped to identify special situations / features?

iv) What further studies are needed on an ongoing basis to enhance local / focal integrated vector control?

4. GUIDELINES FOR INTEGRATED VECTOR CONTROL

Different types of mosquito breeding sites have been identified in Mangalore city and its environs. What guidelines can we evolve for vector control in each specific situation?

- Overhead tanks?
- Cemented tanks?
- Curing tanks?
- Fountains?
- Wells (used)?
- Wells (unused)?
- Any other collections of water?

5. RATIONAL TREATMENT AND CARE

Rational Malaria Care and management are an important component of, effective Malaria control. Rational, low-cost, effective and prompt treatment should be undertaken by all alert heath care providers.

i) What has been done so for to educate local health practitioners and providers in Rational Malaria treatment and management?

ii) What more can be done?

iii) How significant is the problem of 'resistance'?

iv) Can the IMA-NMEP Guideline be widely circulated? If so how?

v) Who all could be actively involved with CME's on Malaria in Mangalore? How and what could they do?

vi) What arrangements can be made to strengthen

- Laboratory Diagnosis of Malaria / Dengue
- Treatment of complicated cases?

6. INVOLVEMENT OF CIVIC SOCIETY

Community participation has been identified as a key component of successful control strategy.

i) Who are all the components of civil society in Mangalore, who could be made aware and involved in action against Malaria and Dengue?

- NGOs and voluntary agencies

- Environmental groups
- Trade unions
- Women's groups
- Peoples organisations
- Religious / social /cultural organisation
- Others?

ii) How can they be made aware of the problem? How can they be involved in action? In what way, can they participate in control efforts?

7. INVOLVEMENT OF EDUCATIONAL SYSTEM & HEALTH EDUCATION

Children and all those who are involved in the educational system should be made aware of the problem of Malaria and Dengue, In addition, community Health education is urgent.

i) How could schools and colleges be involved in the programme?

ii) What activities could they do? Who would facilitate this and how?

iii) Are there any educational modules available for malaria training in school / college curriculum

iv) How can the media be involved in health education?

v) What are the other modes of health awareness building that can be used in Mangalore? Who / How would facilitate this?

8. FORMATION OF WARD COMMITTEES AND ENHANCING LOCAL LEVEL COMMUNITY PARTICIPATION

i) What has been the experience of ward committees in the past? In the present?

ii) What could be the composition of such committees?

iii) What could be the functions of such committee?

iv) Are there other methods of involving the community at local level?

9. PROTECTION AND MANAGEMENT OF CONTRACT LABOUR AGGREGATIONS

Recently, the Goa Public Health Act has notified that contract labour must be under surveillance and given treatment when required. The onus is on the contracter.

i) Are we aware of the provisions of this Act?

ii) How can it be applied / evolved in Mangalore city?

iii) What would be the key components of such an initiative?

iv) How could it be introduced? Enforced?

10. INTER-SECTORAL ACTION

There is urgent need to tackle the problem of resurgence of Malaria /Dengue and other vector borne diseases through coordinated inter-sectoral action

i) What are all the sectors that contribute to the problem and hence should be involved with contribution to control / action

(a) Agriculture Department?
(b) City Corporation?
(c) Urban Development?
(d) Construction sector?
(e) Fisheries department?
(f) Local industries?
(g) Any other?

ii) How can these be involved in control / action

iii) What specific contribution could each make to the programme?

11. ANY OTHER POINTS?

Finally, the participants can suggest other areas of action initiative that have not been covered by the areas / questions listed above?

Are there other issues of concern?

Are there other strategies for action?

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ಮಲೇರಿಯ ನಿಯಂತ್ರಣ ಸಮುದಾಯದ ಮಾತಾಗಲಿ

(Let community talk Malaria)

ಮಲೇರಿಯದ ಬಗ್ಗೆ ಎಚ್ಚರಿಕೆ

ಮಲೇರಿಯ ಉಂಟಾಗುವುದು ಮತ್ತು ಹರಡುವುದು ಹೀಗೆ

ಮಲೇರಿಯವನ್ನು ಒಂದು ಅತಿಸಣ್ಣ ಕ್ರಿಮಿ (ಮಲೇರಿಯ ಪರೋಪಜೀವಿ) ಉಂಟುಮಾಡುತ್ತದೆ. ಈ ಕ್ರಿಮಿಯನ್ನು ಸೂಕ್ಷ್ಮದರ್ಶಕ ಯಂತ್ರದಿಂದ ಮಾತ್ರ ನೋಡಲು ಸಾಧ್ಯ. ಮಲೇರಿಯ ಪರೋಪಜೀವಿಯು ಅದರ ಜೀವನದ ಒಂದು ಭಾಗವನ್ನು ಮನುಷ್ಯನಲ್ಲಿಯೂ ಇನ್ನೊಂದು ಭಾಗವನ್ನು ಸೊಳ್ಳೆಯಲ್ಲಿಯೂ ಕಳೆಯುತ್ತದೆ. ಎಲ್ಲಾ ಸೊಳ್ಳೆಗಳೂ ಮಲೇರಿಯವನ್ನು ಹರಡುವುದಿಲ್ಲ. ಅದನ್ನು ಅನಾಫೆಲಿಸ್ ಎಂಬ ಮಲೇರಿಯ -ಒಯ್ಯುವ ಸೊಳ್ಳೆಗಳು ಹರಡುತ್ತವೆ. ಹೆಣ್ಣು ಅನಾಫೆಲಿಸ್ ಸೊಳ್ಳೆಗಳು ಮಾತ್ರ ಈ ಕೆಲಸವನ್ನು ಮಾಡುತ್ತವೆ.

ಮಲೇರಿಯ ಪರೋಪಜೀವಿಯನ್ನು ತನ್ನ ರಕ್ತದಲ್ಲಿ ಹೊಂದಿರುವ ರೋಗಿಯನ್ನು ಕಚ್ಚಿದ ಹೆಣ್ಣು ಅನಾಫೆಲಿಸ್ ಸೊಳ್ಳೆಯೊಳಗೆ ಮಲೇರಿಯ ಪರೋಪಜೀವಿ ಪ್ರವೇಶಿಸುತ್ತದೆ. ಈ ಮಲೇರಿಯ ಪರೋಪಜೀವಿಗಳು ಸೊಳ್ಳೆಯ ಹೊಟ್ಟೆಯೊಳಗೆ ಹೋಗುತ್ತವೆ ಮತ್ತು 10 ರಿಂದ 14 ದಿನಗಳೊಳಗೆ ಅದು ರೋಗವನ್ನು ಹರಡುವ ಸ್ಥಿತಿಗೆ ಬರುತ್ತದೆ. ಮಲೇರಿಯ ರೋಗಾಣುಗಳನ್ನು ಹೊಂದಿರುವ ಈ ಸೊಳ್ಳೆ ಆರೋಗ್ಯವಂತ ಮನುಷ್ಯನನ್ನು ಕಚ್ಚಿದಾಗ ಅದು ಮಲೇರಿಯ ಪರೋಪಜೀವಿಗಳನ್ನು ಮನುಷ್ಯನ ದೇಹದೊಳಕ್ಕೆ ಪ್ರವೇಶಿಸುತ್ತದೆ. 14ರಿಂದ 21 ದಿನಗಳೊಳಗೆ ಆ ಮನುಷ್ಯನಿಗೆ ಜ್ವರ ಪ್ರಾರಂಭವಾಗುತ್ತದೆ. ಇಂತಹ ಒಬ್ಬ ಮಲೇರಿಯ ರೋಗಿಯಿಂದಾಗಿ ಅನೇಕರಿಗೆ ಮಲೇರಿಯ ಹರಡುವ ಸಂಭವ ಇದೆ.

ಮಲೇರಿಯದ ಲಕ್ಷಣಗಳು

ಮಲೇರಿಯ ರೋಗಿಗೆ ಪ್ರತಿದಿನ ಅಥವಾ ದಿನ ಬಿಟ್ಟು ದಿನ ಬಹಳವಾದ ಜ್ವರ ಬರುತ್ತವೆ. ಅದಕ್ಕೆ ಮೂರು ಹಂತಗಳಿವೆ. - ಚಳಿಯ ಹಂತ, ಬಿಸಿಯ ಹಂತ ಮತ್ತು ಬೆವರುವ ಹಂತ.

ಚಳಿಯ ಹಂತ

ಜ್ವರವು ಇದ್ದಕ್ಕಿದ್ದಂತೆ ಬರುತ್ತದೆ- ಅದರೊಂದಿಗೆ ಅತ್ಯಂತ ಚಳಿಯಿರುವ ನಡುಕ ಮತ್ತು ಹಲ್ಲುಗಳ ಕಚ್ಚಿಕೊಳ್ಳುವಿಕೆ ಇರುತ್ತದೆ. ರೋಗಿಗೆ ತೀವ್ರವಾದ ಚಳಿಯಿಂದ ರಕ್ಷಿಸಿಕೊಳ್ಳುವುದಕ್ಕಾಗಿ ಹೊದಿಕೆಯ ಮೇಲೆ ಹೊದಿಕೆ ಹಾಕಿಕೊಳ್ಳಬೇಕೆಂದೆನಿಸುತ್ತದೆ. ಚಳಿಯ ಹಂತ ಸುಮಾರು ಒಂದು ಗಂಟೆ ಕಾಲ ಇರುತ್ತದೆ.

ಬಿಸಿಯ ಹಂತ

ಈ ಹಂತದಲ್ಲಿ ರೋಗಿಗೆ ತನ್ನ ದೇಹ ಬೆಂಕಿಯಂತೆ ಬಿಸಿ ಇರುವಂತೆ ತೋರುತ್ತದೆ. ಅವನು ತನ್ನ ಹೊದಿಕೆಗಳನ್ನೆಲ್ಲಾ ದೂರ ಹಾಕುತ್ತಾನೆ. ಅವನಿಗೆ ತೀಕ್ಷ್ಣವಾದ ತಲೆನೋವೂ ಕೂಡಾ ಇರುತ್ತದೆ.

ಬೆವರುವ ಹಂತ

ಬಹಳವಾದ ಬೆವರುವಿಕೆಯೊಂದಿಗೆ ಜ್ವರವು ಕಡಿಮೆಯಾಗುತ್ತದೆ ಮತ್ತು ರೋಗಿಗೆ ತುಂಬಾ ಬಳಲಿಕೆಯಾದಂತೆ ಅನಿಸುತ್ತದೆ.

ಮಲೇರಿಯವನ್ನು ನಿಯಂತ್ರಿಸುವುದು ಹೇಗೆ

ಮಲೇರಿಯವನ್ನು ಒಯ್ಯುವ ಸೊಳ್ಳೆಯನ್ನು ಕೊಲ್ಲುವುದರ ಮೂಲಕ ಅಥವಾ ರೋಗಿಯ ರಕ್ತದಲ್ಲಿರುವ ಮಲೇರಿಯ ಪರೋಪಜೀವಿಯನ್ನು ಕೊಲ್ಲುವುದರ ಮೂಲಕ ಮಲೇರಿಯ ಹರಡುವುದನ್ನು ನಿಯಂತ್ರಿಸಲು ಸಾಧ್ಯ.

ಸೊಳ್ಳೆಯನ್ನು ಕೊಲ್ಲುವಿಕೆ

ಮನುಷ್ಯರನ್ನು ಕಚ್ಚಿ ರಕ್ತವನ್ನು ಕುಡಿದ ಸೊಳ್ಳೆಗಳು ಆಲಸ್ಯ ಹೊಂದಿ ಗೋಡೆಗಳ ಮೇಲೆ ಅಥವಾ ಸೀಲಿಂಗ್‌ನಲ್ಲಿ ಕುಳಿತುಕೊಳ್ಳುತ್ತವೆ. ರತ್ತಲೆಯ ಸ್ಥಳಗಳೆಂದರೆ ಅವುಗಳಿಗೆ ಇಷ್ಟ. ಈ ಜಾಗಗಳಿಗೆಲ್ಲಾ ಕೀಟನಾಶಕವನ್ನು ಸಂಪಡಿಸಿದರೆ, ಅದನ್ನು ಸಾಕಷ್ಟು ಪ್ರಮಾಣದಲ್ಲಿ ತೆಗೆದಿರುವ ಸೊಳ್ಳೆ ಸತ್ತುಬಿಡುತ್ತದೆ.

ಆದುದರಿಂದ ಮಲೇರಿಯ ಹರಡುವುದನ್ನು ತಡೆಯಲು ಅತ್ಯುತ್ತಮವಾದ ಕ್ರಮವೆಂದರೆ ಎಲ್ಲಾ ಕೋಣೆಗಳಿಗೂ (ಪೂಜೆಯ ಕೋಣೆ, ದಾಸ್ತಾನು ಕೋಣೆ, ಅಡುಗೆ ಕೋಣೆ ಮತ್ತು ಜಾನುವಾರುಗಳ ಶೆಡ್ ಇತ್ಯಾದಿಗಳನ್ನೊಳಗೊಂಡು) ಕೀಟನಾಶಕವನ್ನು ಸಿಂಪಡಿಸುವುದು. ಇದರಿಂದ ಸೊಳ್ಳೆಗಳು ಮೊಟ್ಟೆಗಳನ್ನಿಡುವುದನ್ನೂ ಮಲೇರಿಯ ಪರೋಪಜೀವಿಗಳನ್ನು ಆರೋಗ್ಯವ್ಯಕ್ತಿಗೆ ಹರಡವುದನ್ನೂ ತಡೆಯುತ್ತದೆ.

ಮಲೇರಿಯವನ್ನು ಒಯ್ಯುವ ಸೊಳ್ಳೆ ಸಾಮಾನ್ಯವಾಗಿ ಸ್ವಚ್ಛವಾಗಿರುವಂತೆ ತೋರುವ ನಿಂತ ನೀರಿನಲ್ಲಿ ಸಂತಾನವೃದ್ಧಿ ಮಾಡಿಕೊಳ್ಳುತ್ತದೆ. ಬಿಸಾಡಿದ ಡಬ್ಬಗಳು, ತೆಂಗಿನಕಾಯಿಯ ಕರಟಗಳು, ಮನೆ ಮೇಲಿನ ನೀರಿನ ಟ್ಯಾಂಕ್‌ಗಳು, ಫ್ಲವರ್ ಪಾಟ್‌ಗಳು, ಹೂವಿನ ತೊಟ್ಟಿಗಳು ಇರುವ ನೀರು ನಿಲ್ಲುವ ಜಾಗಗಳು, ನೀರಿನ ತೊಟ್ಟಿಗಳು ಮುಂತಾದ ಸ್ಥಳಗಳಲ್ಲೆಲ್ಲಾ ಸೊಳ್ಳೆಗಳು ಸಂತಾನವೃದ್ಧಿ ಮಾಡಿಕೊಳ್ಳುತ್ತವೆ. ಸ್ವಲ್ಪ ನೀರಾದರೂ ಸಾಕು, ಸುಮಾರು ಒಂದು ವಾರ ಕಾಲ ನಿಂತರೆ ಅವುಗಳ ಸಂತಾನವೃದ್ಧಿ ಪ್ರಾರಂಭವಾಗುತ್ತದೆ. ಆದುದರಿಂದ ಎಲ್ಲಿಯೂ ನೀರು ನೆಲೆನಿಲ್ಲದಂತೆ ನೋಡಿಕೊಳ್ಳಬೇಕು.

ಪರೋಪಜೀವಿಯ ಕೊಲ್ಲುವಿಕೆ

ಮಲೇರಿಯ ರೋಗಿಗೆ ಮಲೇರಿಯದ ವಿರುದ್ಧದ ಔಷಧಗಳನ್ನು ನೀಡಿ ರೋಗಿಯ ರಕ್ತದಲ್ಲಿ ಪರಿಚಲನೆ ಮಾಡುವ ಮಲೇರಿಯ ಪರೋಪಜೀವಿಯನ್ನು ಕೊಲ್ಲಲಾಗುವುದು.

ಎರಡು ಬಗೆಯ ನಿಯಂತ್ರಣ

ಗ್ರಾಮೀಣ ಪ್ರದೇಶಗಳಲ್ಲಿ, ಮಲೇರಿಯ ಹರಡುವುದನ್ನು ತಡೆಯಲು ಹೆಚ್ಚಾಗಿ ಎರಡು ಕ್ರಮಗಳನ್ನು ಕೈಗೊಳ್ಳಲಾಗುತ್ತದೆ.

i) ಜಾನುವಾರುಗಳ ಶೆಡ್‌ಗಳನ್ನೊಳಗೊಂಡು ಮೇಲ್ಚಾವಣಿ ಇರುವ ಎಲ್ಲಾ ಸ್ಥಳಗಳಿಗೂ ಕೀಟನಾಶಕವನ್ನು ಸಿಂಪಡಿಸುವುದು.

ii) ನಿಗಾ ಇಡುವ (Surveillance) ಕಾರ್ಯಾಚರಣೆ. ಇದರ ಪ್ರಕಾರ, ನಿಗಾ ಇಡುವ ಉದ್ಯೋಗಿ ಎರಡು ವಾರಗಳಿಗೊಮ್ಮೆ ಪ್ರತಿ ಮನೆಗೆ ಭೇಟಿ ನೀಡಿ, ಯಾರಿಗಾದರೂ ಜ್ವರವಿದೆಯೇ ಎಂದು ವಿಚಾರಿಸುತ್ತಾರೆ. ಯಾರಿಗಾದರೂ ಜ್ವರವಿದೆಯೆಂದಾದರೆ, ಪರೀಕ್ಷೆಗಾಗಿ ಆ ವ್ಯಕ್ತಿಯ ರಕ್ತವನ್ನು ಸ್ವಲ್ಪ ತೆಗೆದುಕೊಂಡು ರೋಗಿಗೆ ಕ್ಲೋರೋಕ್ವಿನ್ ಮಾತ್ರೆಗಳನ್ನು ಕೊಡುತ್ತಾರೆ. ಅನಂತರ ಅವರು ಪ್ರಾಥಮಿತ ಆರೋಗ್ಯ ಕೇಂದ್ರ (P.H.C.) ದ ಲ್ಯಾಬೊರೇಟರಿಯಲ್ಲಿ ರಕ್ತಪರೀಕ್ಷೆ ನಡೆಸುತ್ತಾರೆ. ಮಲೇರಿಯವೆಂದು ಕಂಡು ಬಂದರೆ, ಗುಣಪಡಿಸುವುದಕ್ಕಾಗಿ ರೋಗಿಗೆ 5 ದಿನಗಳ ತೀವ್ರವಾದ ಚಿಕಿತ್ಸೆ ಮಾಡಬೇಕಾಗುತ್ತದೆ. ವೈದ್ಯಶಾಸ್ತ್ರದ ಪ್ರಕಾರ ರೋಗಿಯನ್ನು ಗುಣಪಡಿಸಲು ಕ್ಲೋರೋಕ್ವಿನ್ ಸಾಕಾದರೂ, ಹೆಚ್ಚಿನ ಸಂದರ್ಭಗಳಲ್ಲಿಯೂ ಮಲೇರಿಯ ಪರೋಪಜೀವಿಗಳು ಪಿತ್ತಜನಕಾಂಗದಲ್ಲಿ ಉಳಿದುಕೊಳ್ಳುವ ಸಾಧ್ಯತೆ ಇದೆ. ಏಕೆಂದರೆ, ಅಲ್ಲಿ ಕ್ಲೋರೋಕ್ವಿನ್ ಕೆಲಸಮಾಡುವುದಿಲ್ಲ. ಆದುದರಿಂದ 5 ದಿನಗಳ ಚಿಕಿತ್ಸೆ ನೀಡಲೇಬೇಕು. ಇಲ್ಲದಿದ್ದರೆ, ರೋಗ ಪುನಃ ಕಾಣಿಸಿಕೊಳ್ಳಬಹುದು.

ಅಪಾಯಕಾರಿ ಸಂದರ್ಭಗಳು

ಸೆರೆಬ್ರಲ್ (ಮಿದುಳಿನ) ಅಥವಾ ಮ್ಯಾಲಿಗ್ನಂಟ್ ಮಲೇರಿಯವನ್ನು ಬಿಟ್ಟರೆ ಉಳಿದ ಮಲೇರಿಯಗಳೆಲ್ಲ ಜೀವಕ್ಕೆ ಅಪಾಯಕಾರಿಗಳಲ್ಲ. ಈ ತರದ ಮಲೇರಿಯವನ್ನು ಪಿ. ಫಾಲ್ಸಿಪರಂ ಎಂಬ ವಿಶೇಷ ಜಾತಿಯ ಮಲೇರಿಯ ಪರೋಪಜೀವಿ ಉಂಟುಮಾಡುತ್ತದೆ. ಈ ತರದ ಮಲೇರಿಯ ಹೆಚ್ಚಾಗಿ ನಮ್ಮ ದೇಶದ ಈಶಾನ್ಯ ಮತ್ತು ಪೂರ್ವಭಾಗಗಳಲ್ಲಿ ಇರುತ್ತದೆ. (ಅಸ್ಸಾಂ, ಮೇಘಾಲಯ, ಮಿಜೋರಾಮ್, ಮಣಿಪುರ, ತ್ರಿಪುರ, ಅರುಣಾಚಲ್ ಪ್ರದೇಶ್, ನಾಗಾಲ್ಯಾಂಡ್ ಮತ್ತು ಪಶ್ಚಿಮ ಬಂಗಾಳ, ಬಿಹಾರ ಮತ್ತು ಒರಿಸ್ಸದ ಕೆಲವು ಭಾಗಗಳಲ್ಲಿ)

ಸೆರಬ್ರಲ್ ಮಲೇರಿಯದಲ್ಲಿ ಮಲೇರಿಯದ ಸಾಮಾನ್ಯ ಲಕ್ಷಣಗಳಲ್ಲದೆ, ಜ್ವರದೊಂದಿಗೆ ನಾನಾ ಮಟ್ಟಗಳ ಮಾನಸಿಕ ವಿಕಲ್ಪಗಳಿರುತ್ತವೆ. ಬುದ್ಧಿ ಭ್ರಮಣೆ ಮತ್ತು ಪ್ರಜ್ಞಾಹೀನತೆ ಕೂಡ ಇರುವ ಸಂಭವವಿದೆ. ಪ್ರಾರಂಭದ ಹಂತಗಳಲ್ಲಿ, ಕೆಲವು ಸಲ ಉದ್ರೇಕ ಮತ್ತು ಉನ್ಮಾದಗಳಂತಹ ಬುದ್ಧಿ ವಿಕಲ್ಪಗಳು ತೋರಬಹುದು. ಪಿರಿಯ ಸಂದರ್ಭಗಳಲ್ಲಿ, ತಕ್ಕ ಕಾಲದಲ್ಲಿ ಚಿಕಿತ್ಸೆ ನೀಡದಿದ್ದರೆ ಕುತ್ತಿಗೆಯ ಸೆಡೆತ ಬಂದು, ಆಘಾತವು ಮರಣದಲ್ಲಿ ಪರಿಣಸಮಿಸುವ ಸಂಭವವಿದೆ.

ಅಂತಹ ರೋಗಿಗಳನ್ನು ಕಂಡೊಡನೆ ವಿಳಂಬವಿಲ್ಲದೆ ರಕ್ತಪರೀಕ್ಷೆ ಮತ್ತು ಚಿಕಿತ್ಸೆಗಾಗಿ ಡಾಕ್ಟರರಿಗೆ ತಿಳಿಸುವುದರ ಮೂಲಕ ಅಥವಾ ಆಸ್ಪತ್ರೆ / ಪ್ರಾಥಮಿಕ ಆರೋಗ್ಯ ಕೇಂದ್ರಕ್ಕೆ ರೋಗಿಯನ್ನು ಕೊಂಡುಹೋಗುವುದರ ಮೂಲಕ ನೀವು ಜೀವವನ್ನು ರಕ್ಷಿಸಲು ಸಾಧ್ಯವಿದೆಯೆಂಬುದು ನೆನಪಿರಲಿ. ಆ ಪ್ರದೇಶಗಳಲ್ಲಿನ ಅಂತಹ ಜ್ವರ ಸೆರೆಬ್ರಲ್ ಮಲೇರಿಯವಾಗಿರುವ ಸಂಭವವಿದೆ. ಆದುದರಿಂದ ಅಂತಹ ಜ್ವರ ಬಂದೊಡನೆ ಕ್ಲೋರೋಕ್ವಿನ್ ಕೊಟ್ಟರೆ ವ್ಯಕ್ತಿಯನ್ನು ಮರಣದಿಂದ ರಕ್ಷಿಸಬಹುದು.

ಮಲೇರಿಯ ನಿಯಂತ್ರಣಕ್ಕೆ ನಿಮ್ಮ ಸಹಾಯ ಅಗತ್ಯ

- ಮಲೇರಿಯ ಉದ್ಯೋಗಿಗಳೊಡನೆ ಸಹಕರಿಸಿರಿ ಮತ್ತು ಪ್ರತಿಯೊಂದು ಜ್ವರದ ಸಂದರ್ಭದಲ್ಲಿಯೂ ಕೀಟನಾಶಕವನ್ನು ಸಿಂಪಡಿಸಿ ಮತ್ತು ರಕ್ತಪರೀಕ್ಷೆ ಮಾಡಲು ನಿಮ್ಮ ಸಹಾಯ ನೀಡಿರಿ.
- ಕೀಟನಾಶಕವನ್ನು ಸಿಂಪಡಿಸುವಂತೆ ಜನರಿಗೆ ಪ್ರೋತ್ಸಾಹ ನೀಡಿರಿ ಮತ್ತು ನಿಮಗೆ ಕಂಡು ಬಂದ ಪ್ರತಿಯೊಂದು ಜ್ವರದ ಸಂದರ್ಭವನ್ನು ಹೆಲ್ತ್ ಉದ್ಯೋಗಿಗಳಿಗೆ ತಿಳಿಸಿರಿ.
- ಮಲೇರಿಯದ ವಿರುದ್ಧ ಔಷಧಗಳು, ಆಸ್ಪತ್ರೆಗಳಲ್ಲಿ, ಡಿಸ್ಪೆನ್ಸರಿಗಳಲ್ಲಿ, ಪ್ರಾಥಮಿಕ ಆರೋಗ್ಯ ಕೇಂದ್ರಗಳಲ್ಲಿ, ಮಲೇರಿಯ ಉದ್ಯೋಗಿಗಳಲ್ಲಿ, ಸಮಾಜ ಆರೋಗ್ಯ ಸ್ವಯಂಸೇವಕರಲ್ಲಿ, ಔಷಧ ವಿಸ್ತರಣ ಕೇಂದ್ರಗಳಲ್ಲಿ, ಮತ್ತು ಜ್ವರ ಚಿಕಿತ್ಸೆ ಡಿಪೋಗಳಲ್ಲಿ ಉಚಿತವಾಗಿ ಸಿಕ್ಕುತ್ತವೆ. ಬೇಕಾದಾಗಲೆಲ್ಲ ಈ ಸೌಲಭ್ಯಗಳನ್ನು ಉಪಯೋಗಿಸಿಕೊಳ್ಳಿರಿ.
- ನಿಮ್ಮ ಸುತ್ತಮುತ್ತ ವಠಾರದಲ್ಲಿ ನೀರು ನಿಂತುಕೊಳ್ಳಲು ಬಿಡದೆಯೂ ಎಲ್ಲಾ ನೀರು ಸಂಗ್ರಹಣ ಟ್ಯಾಂಕ್‌ಗಳು, ತೊಟ್ಟಿಗಳು ಮುಂತಾದವುಗಳನ್ನು ವಾರಕ್ಕೊಮ್ಮೆ ಖಾಲಿ ಮಾಡಿಯೂ ಸೊಳ್ಳೆಗಳು ಸಂತಾನವೃದ್ಧಿ ಮಾಡುವುದನ್ನು ತಡೆಯಿರಿ.
- ಸಣ್ಣ ದೊಡ್ಡ ಗುಂಡಿಗಳನ್ನು ಮಣ್ಣು ಹಾಕಿ ಮುಚ್ಚಿರಿ.

ನಿಮ್ಮ ಸಹಾಯವು ಮಲೇರಿಯವನ್ನು ನಿಯಂತ್ರಣ ಮಾಡಲು ಮತ್ತು ಮಲೇರಿಯದಿಂದ ಸಂಭವಿಸುವ ಮರಣಗಳನ್ನು ತಡೆಯಲು ಮಲೇರಿಯ ಉದ್ಯೋಗಿಗಳ ಕೈಗಳನ್ನು ಬಲಪಡಿಸುವುದು.

ದ.ಕ. ಜಿಲ್ಲಾ ಪಂಚಾಯತು
ಕೇಂದ್ರ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಸಚಿವ ಖಾತೆಗಾಗಿ ಭಾರತ ಸರ್ಕಾರ ವಾರ್ತೆ ಮತ್ತು ಪ್ರಚಾರ ಸಚಿವ ಖಾತೆಯ
ಡೈರೆಕ್ಟೊರೇಟ್ ಆಫ್ ಅಡ್ವರ್ಟೈಸಿಂಗ್ ಅಂಡ್ ವಿಶುವಲ್ ಪಬ್ಲಿಸಿಟಿ ತಯಾರಿಸಿದ "Beware of Malaria" ಎಂಬ ಮೂಲ ಕರಪತ್ರದಿಂದ ಇದನ್ನು ತೆಗೆದುಕೊಳ್ಳಲಾಗಿದೆ.

ನಾಗರಿಕ ಸೇವಾ ಟ್ರಸ್ಟ್, ಗುರುವಾಯನಕೆರೆ
ಜಿಲ್ಲಾ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಅಧಿಕಾರಿ, ದ.ಕ., ಮಂಗಳೂರು
ತಾಲೂಕು ಆರೋಗ್ಯ ಅಧಿಕಾರಿ, ಬೆಳ್ತಂಗಡಿ

(ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣದ ಮಾಸಾಚರಣೆ ಅಂಗವಾಗಿ ಪ್ರಕಟಣೆ)

20-6-98

ಪರಿಸರ ಸಂರಕ್ಷಣೆಗಾಗಿ ನಾವೆಲ್ಲರೂ ಒಂದಾಗಿ ಹೋರಾಡೋಣ

ಪ್ರಿಯ ಬಾಂಧವರೇ,

ನಗರವು ಆರ್ಥಿಕವಾಗಿ ಅಭಿವೃದ್ಧಿಯಾದಂತೆ ಎಲ್ಲಾ ನಾಗರಿಕರು ಒಳ್ಳೆ ಪರಿಸರದಲ್ಲಿ ಬಾಳುವ ಹಕ್ಕನ್ನು ಕಳೆದು ಕೊಂಡಿದ್ದಾರೆ ಎಂದೆ ಹೇಳಬಹುದು. ಅಭಿವೃದ್ಧಿಯ ಜೊತೆ ಜೊತೆಗೆ ಪರಿಸರ ಮಾಲಿನ್ಯ ಅನಾರೋಗ್ಯ ಹಾಗೂ ವಿರೂಪತೆ ದಿನೇ ದಿನೇ ಹೆಚ್ಚುತ್ತಿದೆ. ಇದಕ್ಕೆ ಕಾರಣವೇನು?

ಆರೋಗ್ಯವಂತ ಸಮಾಜವು ಶುದ್ಧಗಾಳಿ, ಶುದ್ಧ ನೀರು, ಶುದ್ಧ ಆಹಾರ, ಇವುಗಳ ತಳಹದಿಯ ಮೇಲೆ ನಿಂತಿದೆ. ಒಳ್ಳೆಯ ಪರಿಸರವಿದ್ದರೆ ಮಾತ್ರ ಒಳ್ಳೆಯ ಜೀವನವು ಜನರಿಗೆ ಲಭಿಸುತ್ತದೆ. ಇತ್ತೀಚೆಗೆ ಎಲ್ಲಾ ಜನರು ಇದನ್ನು ಮರೆತು ಬಿಟ್ಟಂತಾಗಿದೆ. ಇದು ಯಾಕೆ ?

ನಮ್ಮ ಸುತ್ತಮುತ್ತಲಿನ ಪರಿಸರ ಮತ್ತು ನಗರವನ್ನು ಅವಲೋಕಿಸಿದರೆ ನಾಗರಿಕರಿಗೆ ಜೀವಿಸಲು ಬೇಕಾಗಿರುವ ಪ್ರಾಥಮಿಕ ಸವಲತ್ತುಗಳಲ್ಲಿ ಸಿಗುತ್ತಿರುವುದು ಬರೇ ಕೆಲವು ಮಾತ್ರ. ಆದರೆ ಆಗುತ್ತಿರುವ ಅವ್ಯವಸ್ಥೆಗಳು ಹಲವು, ಅದರಿಂದಾಗಿ ಅನೇಕ ಸಮಸ್ಯೆಗಳು ಜನರನ್ನು ಕಾಡುತ್ತಿವೆ. ಅದರಲ್ಲೂ ಕೆಳಗೆ ಕಾಣಿಸಿದ ತ್ರೊಂದರೆಗಳಿಂದ ಜನರು ಅಪಾರ ಹಾನಿಗೊಳಗಾಗಿದ್ದಾರೆ.

ಸೊಳ್ಳೆ ಉತ್ಪತ್ತಿಯಿಂದ ಮಾರಕ ರೋಗ

ಇತ್ತೀಚಿನ ದಿನಗಳಲ್ಲಿ ಜನರಿಗೆ ಶೇ. 75ರಷ್ಟು ರೋಗಗಳು ಸೊಳ್ಳೆಗಳಿಂದ ಹರಡುವಂತಹ ಮಾರಕ ರೋಗಗಳಾಗಿವೆ. ಉದಾ: ಮೈಲೇರಿಯಾ, ಮೆದುಳು ಜ್ವರ, ಈಗ ಎಲ್ಲೆಲ್ಲೂ ಜನರನ್ನು ಕಾಡುತ್ತಿರುವ ಮಲೇರಿಯಾ ಜ್ವರ ಹಾಗೂ ಇತ್ತೀಚೆಗೆ ಭಯ ಹುಟ್ಟಿಸುತ್ತಿರುವ ಡೆಂಗ್ಯೂ ಜ್ವರ.

ಸೊಳ್ಳೆಗಳ ವಂಶಾಭಿವೃದ್ಧಿಗೆ ನೀರು ಅತ್ಯವಶ್ಯಕ. ನೀರಿಲ್ಲದೆ ಸೊಳ್ಳೆಗಳು ತಮ್ಮ ವಂಶಾಭಿವೃದ್ಧಿಯನ್ನು ಮಾಡಲಾರವು. ಅಂತಹ ನೀರು ನಿಲ್ಲುವ ಸ್ಥಳಗಳು ನಮ್ಮ ನಗರದಲ್ಲಿ ಯಥೇಚ್ಛವಾಗಿವೆ.

- ಮನೆಗಳ, ಮಾರ್ಗದ, ಸುತ್ತಮುತ್ತ ಸಂಗ್ರಹವಾಗಿ ನಿಲ್ಲುವ ನೀರು.
- ಬಾಯಿ ಮುಚ್ಚದೇ ಇರುವ ನೀರಿನ ಟ್ಯಾಂಕುಗಳು ಹಾಗು ತೊಟ್ಟಿಗಳು.
- ಹೊಸದಾಗಿ ಕಟ್ಟುತ್ತಿರುವ ಬೃಹತ್ ಕಟ್ಟಡಗಳ ಸ್ಲಾಬ್‌ನ ಮೇಲೆ ಕಟ್ಟಿ ನಿಲ್ಲಿಸಿದ ನೀರು.
- ಉಪಯೋಗಿಸದ ಬಾವಿಗಳು
- ಟಯರು ಡಬ್ಬಿ, ಬಾಟ್ಲಿ ಮತ್ತು ಸೀಯಾಳದ ಚಿಪ್ಪುಗಳಲ್ಲಿ ಸಂಗ್ರಹವಾಗುವ ನೀರು.

ಇವೇ ಮುಂತಾದ ಸ್ಥಳಗಳಲ್ಲಿ ಸೊಳ್ಳೆಗಳು ಮೊಟ್ಟೆ ಇಟ್ಟು ಅವುಗಳ ವಂಶಾಭಿವೃದ್ಧಿಯಾಗಿ ಜನರಿಗೆ ಕಚ್ಚಿ ಜನರು ಮಾರಕ ರೋಗಗಳಿಗೆ ತುತ್ತಾಗುವುದಲ್ಲದೆ ಈ ರೋಗಗಳನ್ನು ಹರಡಿಸುವುದರಲ್ಲಿಯೂ ಪಾತ್ರರಾಗುತ್ತಾರೆ. ಅಲ್ಲದೆ ಪ್ರಾಣ ಹಾನಿಯ ಜೊತೆಗೆ ಧನ ಹಾನಿಯೂ ಹೆಚ್ಚುತ್ತಾ ಇದೆ.

ಪ್ಲಾಸ್ಟಿಕ್ ದುರುಪಯೋಗ :

ಪ್ಲಾಸ್ಟಿಕ್ ಮಾನವ ಜೀವನದಲ್ಲಿ ಮಹತ್ತರ ಪಾತ್ರವನ್ನು ವಹಿಸುತ್ತಾ ಇದೆ. ಆದರೆ ಪ್ಲಾಸ್ಟಿಕ್ ಉಪಯೋಗದಿಂದ ಹಾಗೂ ಪ್ಲಾಸ್ಟಿಕ್ ವಸ್ತು ಚೀಲಗಳನ್ನು ಸಿಕ್ಕಾಪಟ್ಟೆ ಎಲ್ಲೆಂದರಲ್ಲಿ ಎಸೆಯುವುದರಿಂದ ಮಾನವ ಜನಾಂಗಕ್ಕೆ, ಪ್ರಾಣಿಗಳಿಗೆ ಹಾಗೂ ಪ್ರಕೃತಿಗೆ ಭಯಂಕರ ಹಾನಿಯಾಗುತ್ತಿರುವುದು ಬೆಳಕಿಗೆ ಬಂದಿದೆ. ಮೇಲುನೋಟಕ್ಕೆ ಇದೊಂದು ತಮಾಷೆಯ ಮಾತಾಗಿ ಕಂಡು ಬಂದರೂ ಗಂಭೀರವಾಗಿ ಚಿಂತನೆ ಮಾಡಿದರೆ ಇದರಿಂದ ಕಂಡು ಬರುವ ಅಂಶಗಳು ಹಲವು.

- ಪ್ಲಾಸ್ಟಿಕ್ ನೂರಾರು ವರ್ಷಗಳಿದ್ದರೂ ಮಣ್ಣಿನಲ್ಲಿ ಜೈವಿಕವಾಗಿ ಕರಗಲಾರದ ವಸ್ತು.
- ಮಣ್ಣನೊಳಗೆ ಸೇರಿಕೊಂಡು ಮಣ್ಣಿನ ಫಲವತ್ತತೆಯನ್ನು ಕಡಿಮೆ ಮಾಡುವುದಲ್ಲದೆ ಗಿಡ, ಮರಗಳ ಬೇರುಗಳ ಬೆಳವಣಿಗೆಗೆ ಅಡ್ಡಿ ಮಾಡುತ್ತದೆ.
- ಆಹಾರದೊಂದಿಗೆ ಪ್ಲಾಸ್ಟಿಕ್ ಲಕೋಟೆಗಳನ್ನು ಪ್ರಾಣಿಗಳು ತಿನ್ನುವುದರಿಂದ ಅದು ಜೀರ್ಣವಾಗದೇ ಹೊಟ್ಟೆ ಉಬ್ಬರವಾಗಿ ಸಾಯುತ್ತಿರುವ ನಿದರ್ಶನಗಳು ನಮ್ಮ ಕಣ್ಣಾ ಮುಂದಿವೆ.
- ನೀರು ಹರಿಯುವ ಕಾಲುವೆ, ಚರಂಡಿಗಳಲ್ಲಿ ಪ್ಲಾಸ್ಟಿಕ್ ಚೀಲಗಳು ಅಡ್ಡವಾಗಿ ಸಿಕ್ಕಿಹಾಕಿಕೊಂಡು ನೀರು ಸರಾಗವಾಗಿ ಹರಿಯಲು ಅಡ್ಡಿಯಾಗುವುದು. ಎಲ್ಲೆಂದರಲ್ಲಿ ಎಸೆಯುವುದರಿಂದ ಪರಿಸರ ಮಾಲಿನ್ಯ ಉಂಟು ಮಾಡುವುದರಲ್ಲಿ ಪ್ರಥಮ ಸ್ಥಾನವನ್ನು ಪಡೆದುಕೊಂಡಿದೆ.

ವಾಯು ಮಾಲಿನ್ಯ, ಜಲಮಾಲಿನ್ಯ, ನೆಲಮಾಲಿನ್ಯ, ಇದು ಇಂದು ಎಲ್ಲ ಕಡೆಯಲ್ಲೂ ಕೇಳಿ ಬರುತ್ತಿರುವ ಮಾತು. ನಮ್ಮ ನಗರವನ್ನು ಸುಂದರ, ಆರೋಗ್ಯವಂತ, ಮಾಲಿನ್ಯರಹಿತವಾಗಿ ಇಡಬೇಕಾದರೆ ಬರೇ ಅಧಿಕಾರಿಗಳು ಹಾಗೂ ಚುನಾಯಿತ ಪ್ರತಿನಿಧಿಗಳು ಮಾಡಬೇಕು ಎಂದು ನಾಗರಿಕರಾದ ನಾವು ಕಾಯುವುದು ತಪ್ಪು. ಇದರಲ್ಲಿ ನಮ್ಮೆಲ್ಲರ ಪಾತ್ರವೂ ಇದೆ. ಈ ಪ್ರಚ್ಛೆಯನ್ನು ಮೂಡಿಸುವಲ್ಲಿ ಬೆಂದೂರ್‌ವೆಲ್ಲಿನಲ್ಲಿರುವ "ನಗರ ಪರಿಸರ ಚಿಂತನ ಸಮೂಹ" ಎಂಬ ತಂಡವೊಂದು ಈಗಾಗಲೇ ಕಾರ್ಯ ಪ್ರವೃತ್ತವಾಗಿದೆ.

ನಗರ ಪರಿಸರ ಚಿಂತನ ಸಮೂಹದ ಮುಖ್ಯ ಉದ್ದೇಶ, ಸಾಮಾನ್ಯ ಜನರಲ್ಲಿ ಪರಿಸರದ ಸ್ಥಿತಿಗತಿಗಳ ಬಗ್ಗೆ ಚಿಂತನ ಮಾಡುವಂತೆ ಅವರಲ್ಲಿ ಜಾಗೃತಿ ಮೂಡಿಸುವುದು, ಪರಿಸರದ ಬಗ್ಗೆ ಆಸಕ್ತಿಯನ್ನು ಬೆಳೆಸುವುದು ಹಾಗೂ ಜನಜೀವ ಸಂಬಂಧೀ ಪರಿಸರ ರಕ್ಷಣೆ ಮಾಡುವಂತೆ ಪ್ರೇರಣೆ ಕೊಟ್ಟು, ಜನರೊಂದಿಗೆ ಯೋಜನೆಯನ್ನು ರೂಪಿಸುವುದು.

ಇಂತಹ ಯೋಜನೆಯು ಯಶಸ್ವಿಯಾಗಿ ಕಾರ್ಯಗತವಾಗಬೇಕಾದರೆ ಸ್ಥಳೀಯ ಜನರು ಸಂಘಟಿತರಾಗಿ, ಭಾಗವಹಿಸುವುದು ಅಗತ್ಯ.

ನಮ್ಮ ನಗರವು ಆರೋಗ್ಯವಂತ, ಸ್ವಚ್ಛ, ಸುಂದರವಾದ ಪರಿಸರದಿಂದ ಶೋಭಿಸಲು ನಾವೆಲ್ಲರೂ ಒಂದಾಗಿ ದುಡಿಯೋಣ.

ಪ್ರಕಟನೆ : ನಗರ ಪರಿಸರ ಚಿಂತನ ಸಮೂಹ

ಸೈಂಟ್ ಜೋಸೆಪ್ ಹೈಲ್ಯಾಂಡ್ ಕಂಪೌಂಡು, ಬೆಂದೂರ್‌ವೆಲ್, ಮಂಗಳೂರು - 575 002.

MALARIA / DENGUE IN MANGALORE

Follow-up action

	What	Who	How
1. Notification Awareness	Handbill and through Media	MRC + CHC. and Malaria Dept.	Would be drafted and a copy sent to Malaria J.N. Samithi for its use by printing
2. Mangalore City Corporation Bye-Laws	Copy to be sent to the Jt. Director Malaria & Filaria	Health Officer MCC.	To be posted as early as possible and followed up at the Govt. level in Bangalore.
3. Study of Vector Dynamics			
4. Guidelines for Integrated Vector Control	Training programmes for field level workers – Govt and NGO.	MRC CAC KMC	
5. Rational Treatment and Care			
6. Involvement of Civic Society	Awareness raising education through appropriate information material and programmes.	Malaria J. Niganthrana Samithi Nagara Parisara Chintana Samuha	Hand bills ward meetings. Street plays in schools and public places. Songs, slogan display Home visits Involving Schools in Malaria awareness Programmes for locality.

...ked by courier 174 19/6/99

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	What	Who	How
7. Involvement of Educational System & Health Education			
8. Formation of Ward Committees and Enhancing Local level community participation	Promoting neighbourhood groups for Malaria awareness and control programmes.	Malaria Jaivika Niyanthrana Samithi	Motivating and involving groups of youth, women, other sanghas and significant individuals.
9. Protection & Management of Contract labour aggregrations	Identification card and periodic exam. ~~of labourers~~ of labourers	M.C.C. and Contractors	Rules to be framed and enforced.
10. Inter-Sectoral Action	Co-ordination meetings	Malaria Control Department	Joint meetings with Departments and NGO'S to plan comprehensive action & periodic evaluation.
11. Any other points	Supplying Guppy fish	Jt. Director Malaria Filaria through local office. Fisheries College. M C C.	Publicity to be given & fish supplied wherever necessary without red tape and with easy access. NGO'S MNJ S and NCPs are involved in the distribution

Sd/-
Suresh Shetty
(Purohit)

Sd/-
SYLVESTER D'Souza
(Samithi)

LET US CONTROL MALARIA

Introduction

Malaria is an infectious disease, which is ailing mankind since ancient time. It can definitely controlled by taking preventive measures, thereby operationalizing the well-known process "Prevention is better than cure". Keeping up with rising environmental awareness, the thrus weak be on control of malaria through bio-environmental methods for Mangalore city.

Educational Objectives

1) To impress on the fact that Malaria is a man-made problem and demonstrate that it is more of an environmental problem than an medical problem
2) To illustrate the ecological balance in the triad of man, mosquito and environment.
3) To suggest societal responsibility of every individual to control mosquitoes through community participation.
4) To communicate orally and in written format to the people in community the role of the Guppy fish can play in preventing malaria by reducing breeding of mosquitoes.
5) To reason out the preference for bio-environmental management over chemical use in controlling mosquitoes.
6) Understand the importance of prompt treatment of malaria cases.
7) To imbibe the essentials of scientific investigations.
8) To help boost self-confidence of a student.

Scientific Concepts

1) Life cycle of Malaria parasite.
2) Life cycle of mosquito
3) Bio-environmental control strategy
4) Physical characteristics of mosquito.

Previous knowledge assumed

1) That malaria is carried by mosquito
2) Mosquito breed in stagnant water.

Students Guide

Scenario: Mangalore city is specific and South Canara district of Karnataka in general is one of the most highly literate, well informed and resource for regions of our country. One of the reasons for the prosperity of the region was attributed to the good health enjoyed by the people of the region. Over period of last 7-8 years, malaria has made major inroads in the region. Numerous reasons are attributed i.e., construction, migration labourers, etc. The city will face serious problem if malaria is not brought under control immediately. School children have significant role in the process.

Your tasks:

1) Brainstorming of ideas over the issues.
2) With the help of zzoology teacher/ local malaria worker, get acquainted to identifying mosquito larva.
3) Go around in your area in group of two and try to identify various types of collection of water that could serve as potential breeding sources.
4) Look closely in water collection for the presence of larvae.
5) Mark '+ve' for the presence of larvae;
6) Mark '-ve' for absence of larvae.
7) Analyse the data with the teacher's guidance.
8) Devise an action strategy for each variety of breeding source, to control/prevent mosquito breeding.

Learning teaching materials

1) Bowl with handle
2) Rope
3) Bucket
4) Tray (white)
5) Guppy fishes
6) Work sheet.

{Worksheet for student is given next page in tabular form}

WORKSHEET FOR STUDENTS

Sl. No.	Big breeding sources	Small breeding sources	+ve	-ve	Action Strategy
	Wells				Release Guppy fishes
	Overhead tanks				Change the water in the tank once a week or can also introduce fishes
	Garden cemented tanks				
	Ditches and puddles on roadsides and gardens				Fill in the ditch/puddle with mud, with stone and mud
	Drains				Introduce fishes
	Water collection in construction sites like for curing purpose				Change the water once a week
		Water collection in base plate of indoor plants			Empty the base plates after watering
		Coolers			Change the water once a week
		Window shades			Drain out the water. Keep it dry.
		Discarded tyres			Remove the water by puncturing them or with cloth
		Discarded/broken pots, tins, bottles			Destroy and dispose
		Coconut shells			Destroy and dispose
		Tree holes			Fill it up with mud

TEACHER'S GUIDE

Suggested teaching strategy:

1) Brainstorm before sending children to the field on following aspects of malaria:
   a. Malaria – signs and symptoms
   b. Life cycle of ⟶ Malaria parasite
      Life cycle of ⟶ Mosquito.
   c. Different control strategies that could be adpoted to control mosquitoes/
   d. Why bio-environmental control with guppy fish.
2) How malaria is man made problem, disease, what kind of activities lead to water stagnation. Thus impressing on the children the relation between environmental sanitation and health. And thus malaria control is possible with basic health education and community participation.
3) Show that how each of the action strategy is based on the scientific concept, in other words, application of the conceptual science into action that can be related to societal problem.

   Eg:
   - ↘ Closing the ditch/puddle
   - ↘ Emptying the water out of base plate of flower pot
   - ↘ Drying the window shades
   - ↘ Drying the inside of tyres.

   } The science behind it being that mosquitoes need water to lay the eggs

4) Changing the water once a week would lead to interruption of life-cycle of mosquito as they need to be in water for atleast once a week for their maturation.
5) Pros and cons of all other ways of mosquito control strategy should be discussed on the base of feasibility, economic and environmental hazards.

   Eg:
   a. Pouring kerosene oil over water
   b. Spraying DDT

   } Environmental hazards

   c. EPS beads ⟶ economic reasons

Students Handouts

1) Students can carry with them simple diagrammatic, pictorial representation of life cycle of mosquitoes in the form of flip charts; while going out in the field to convince the residents of the reason for avoiding the potential breeding of mosquitoes in and around the houses.
2) Data table.

Assessment of objectives achieved

1) Comprehension
2) Feed-back from residents
3) Written test
4) Enthusiasm
5) Perseverence
6) Demonstration skills
   Communication skills
7) Co-relation of scientific concepts and activity
8) Decision making
9) Pre and post activity response of a child.

TRAINING OF DOCTORS IN GENERAL PRACTICE AND NGOs ON "EARLY DETECTION, TREATMENT AND MANAGEMENT OF COMPLICATION OF MALARIA.

PROBLEM IDENTIFIED.

The government of India has recognised that the central India and North East India are at high risk for Malarial fever and more and more resistant cases are reported from Orissa , M.P and North East India. Further more than 90% cases of fever are treated by the practioners of medicine in the general practice and NGOs. Very few NGOs have ever attempted to get involved in the control of Malaria in these high risk areas. No training programme or update educational programmes are available for medical practioners in Bihar, Orissa , M.P and North East India. Hence the CMAI having its network in these areas, being requested by the NMEP to help in control of Malaria , has taken up the responsibility of training medical practioners in private practice and NGOs areas mentioned above.

OVER ALL PURPOSE.

To decrease the morbidity and mortality among people due to Malaria in Orissa , M.P, Bihar & NEI.

Objective:

To train 100 doctors in states of Orissa , M.P, Bihar & NEI on early diagnosis of Malaria, its treatment and Management of complications in 4 update workshop.

Activities:

1. Developing working relationship with NMEP at the central government level, state and district levels in above mentioned regions by ,

* organising formal and informal meetings. Several formal meetings were held with the NMEP at Delhi in 1998 and at the state level with officers in charge of Malaria control programme at Berhampur (Orissa), Hazaribagh (Bihar), Dumka (Bihar), and Guwahati (Assam).

* informal meetings were held with teachers of medical colleges at Ranchi, Guwahati, Berhampur and school of tropical medicine Calcutta to mobilise resource people for the update workshop.

* informal meetings were held with members , hospitals, at Ranchi, Hazaribagh, Mohulpahari, Guwahati and Berhampur with the hosting institutions.

* informal and formal correspondence were done with CMAI's resource people at Bishamcuttack and Bhubaneswar.

2. Orientation of programme officers at Ranchi and Guwahati was done to assist at these workshops.

Achievements:

Kindly refer to the comprehensive report.

TOPICS

1. MALARIA OVERVIEW

2. EPIDEMIOLOGY & LIFE CYCLE

3. CLINICAL FEATURES & DIAGNOSIS

4. LABORATORY DIAGNOSIS

5. DIFFERENTIAL DIAGNOSIS OF COMPLICATED MALARIA

6. ANTI MALARIAL DRUGS

7. MANAGEMENT OF COMPLICATIONS

8. REFERRAL CENTRE & LINKAGAGERS

9. CASE STUDIES

10. OVERVIEW OF VECTORS

11. HUMAN BEHAVIOUR & MALARIA

12. CONTROL OF TRANSMISSION
    - Impregnated Mosquito net

12. ROLE OF NGOs/GPs

S/ No	Place & Date	Pre test	COVERAGE OF TOPICS												
			1	2	3	4	5	6	7	8	9	10	11	12	Post test
1	Berhamepur Orissa 23rd to 25th January	Poor performance	GOOD	GOOD	GOOD	FAIR	GOOD	GOOD	FAIR	FAIR	GOOD	GOOD	NOT DONE	GOOD	NOT DONE
2	Dumka Bihar 6th to 8th March	Poor Performance	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	NOT DONE	GOOD	NOT DONE
3	Hazaribagh Bihar 13th to 15th March	Poor Performance	GOOD	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	NOT DONE	GOOD	NOT DONE
4	Guwahati Assam 27th to 29th March	Poor Performance	FAIR	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	FAIR	GOOD	FAIR	NOT DONE	FAIR	NOT DONE

Comprehensive report on "Training of Doctors on Malaria (1998- 99)

Sl.No:	State,place, venue & dates	No partici-pated	Resource people			Remarks/feedback
			CMAI	GOVT	OTHERS	
1	Orissa, Berhamepur Radha Hotel, 23rd to 25th Januray 1999	42	Dr.Sukant Singh Dr. John Ooman Dr.Ravi D'Souza	Dr.S.N.Das Incharge Malaria Dr.Satyanand Das Asst.Medical Officer Malaria	From Berhamepur Medical College Dr. Bijayalaxmi Parija, Physician Dr.Sitaram Mohapatra - Pathologist Dr. Manoj K. Mohapatra-Physician Dr.H.N. Sahu - Principal Dr. N.M.Panigrahi - Rtd.Prof.G& O	1. Participants are not asking for DA,TA but would like if their stay & food can . be adequately covered by CMAI
2	Bihar, Dumka Bandarjodi Mission 6th to 8th March'99	27	Dr.Sukant Singh Dr.Ravi D'Souza Dr.Ujwal Hembrom	Dr.S.N.Jha, Physician Sadar Hospital, Dr.Manjhi Civil Surgeon Dumka	Dr.Amitabh Nandi , Director, School of Tropical Medicine, Calctutta	2. More sessions on case studies, diagnosis and treatment will be helpful.
3	Bihar, Hazaribagh St.Columba's Hospital, 13th to 15th March 1999	27	Dr.Sukant Singh Dr.Ravi D'Souza Dr.Pushpa Dass	Dr.R.N. Sahay Civil Surgeon Hazaribagh	Dr.Sushil Kachyap, Physician Ranchi Medical College Dr.Anugraha Paul ,Physician Ranchi Medical College	3. Refresher update programmes may be regularly held.
4	Assam, Guwahati CBCNEI conference centre, 27th to 29th March 1999	27	Dr.Sukant Singh	Dr.C.Hera Jt.Diretor (Malaria) Dr.Vasudev M.RC.Sonapur	Dr.U. Sharma, Prof. S.P.M. GMC Dr.Bhattacharya, Physician Guwahati Medical College Dr.A.Baishya Asso.Prof. S.P.M, GMC	

ROLL BACK MALARIA

BRIEFING DOCUMENT

INTRODUCTION

1. Governments and civil society in malaria affected countries will take the lead in rolling back malaria as a means to reduce poverty and mortality, and promote human development. Partners, in considering health sector issues, will agree to work together, at country level, towards common goals using agreed strategies and procedures. The national authorities of countries will direct the partnership.

2. WHO has established a **Cabinet Project** to help country Roll Back Malaria partnerships become fully effective. The project is implemented with the support of WHO's Clusters and Offices at Headquarters, Regions and Country, and other partners. It is spearheaded in Africa. It promotes effective investment in new medicines and other tools to reduce the burden of malaria through WHO/TDR, MIM and the public-private MMV (Medicines for Malaria Venture).

3. The project helps increase the level of international financial investment in the efforts of countries to Roll Back Malaria through international **advocacy** emphasising the current and potential investment outcomes and ensuring updated information on the global malaria situation.

4. To provide countries with the specialised technical support required to address the challenges of malaria, the project will establish a number of Resource Support Networks, comprising experts in appropriate fields, particularly from relevant regions; thus making implementation plans to reflect an evidence-based response to local needs and realities.

MISSION

5. The Roll Back Malaria Cabinet Project will address a priority health issue through contributions to strengthen national systems, provide effective and strategic interventions through partnerships with groups within and outside WHO, and act as a pathfinder in offering a new approach to the sustainable control of infectious diseases.

GOAL

6. The Roll Back Malaria project will significantly reduce the global burden of disease associated with malaria through interventions adapted to local needs and reinforcement of the health sector.

MAIN AREAS OF WORK

1. Strategy Development, Communication & Advocacy
2. Activating Progress at Country Level
3. Building and Sustaining the Global Partnership
4. Promoting Consistent Technical Guidance
5. Strategy Support for Research and Development
6. Monitoring Progress & Outcomes

OBJECTIVES

7. The objective of the Roll Back Malaria project during the preparatory phase, ending December 1999, is to maximise effectiveness of the Global Roll Back Malaria partnerships. Specifically, it will lead to:

7.1 The establishment and operation of national Roll Back Malaria **partnerships** in at least 20 countries in Africa

7.2 The establishment and acceptance of **WHO-wide strategy** to Roll Back Malaria, which results in coherent WHO operations to implement Roll Back Malaria in the context of health sector development

7.3 The establishment of up to **9 Technical Support Networks**, utilising indigenous expertise, where possible, to ensure that the best quality, science-based technical support is available to help participating countries Roll Back Malaria in the context of health sector development

7.4 The establishment and sustenance of a **global information system** to track the progress of the Roll Back Malaria Initiative at country, regional and global levels

7.5 The development and deployment of new tools for effective malaria control through partnership with the **research community** and **private sector**

7.6 **Advocacy** and resource mobilisation among members of the global partnership for Roll Back Malaria and other country action in the context of health sector development

STRATEGY DEVELOPMENT, COMMUNICATION & ADVOCACY

8. Roll Back Malaria will build on the current Global Malaria Control Strategy and current efforts, adapting them to achieve the highest levels of implementation. Technical and implementation strategies, through a consultative process and a continuous dialogue with countries, will be developed, based on epidemiological, regional, health systems needs and economic circumstances. Further, these strategies will focus strongly on the community level and will seek to strengthen existing implementation efforts and build on them.

ACTIVATING PROGRESS AT COUNTRY LEVEL

9. A country that commits itself to the Roll Back Malaria Initiative ("RBM" country) undertakes a needs assessment to develop national strategies for intensified action against malaria. Interventions for each country will be endorsed after reviewing information on treatment and prevention practices of malaria at the household and community levels, availability and quality of health care in public and private sectors and potential local partners. An "RBM" country will have the technical content of strategies being pursued by partners endorsed, technical and financial assistance for implementation brokered and progress with Rolling Back Malaria within the context of health sector development monitored.

10. A country which is not committed to Roll Back Malaria will continue to enjoy WHO`s ongoing technical support for malaria control activities.

BUILDING & SUSTAINING GLOBAL PARTNERSHIP

11. A partnership representing Member States, organisations of the United Nations system, development banks, bilateral development agencies, the private sector, the media and civil society will be established at the global level to support country level action. Partners will agree on the terms of their participation, approaches to international advocacy, means for mobilisation and flow of resources, the basis for monitoring progress, and an appropriate institutional framework to sustain the partnership; thus contributing to more effective action on their part at country level.

PROMOTING CONSISTENT TECHNICAL GUIDANCE

12. Technical support networks will be established to provide expertise that is required for the implementation of RBM by countries. These networks will:

- comprise experts (and institutions) in various disciplines with practical experience available in countries within the region
- provide direct support to control operations
- address specific technical issues that are critical for control policy
- address specific issues that can be more effectively dealt with in an inter-country and/or regional setting
- function in a "demand-responsive" manner with respect to the RBM needs of countries
- encourage collaboration between countries
- be the link with international expertise between research and academic institutions, and disease control operations in endemic countries
- be financed by various partners
- be a potent mechanism through which to build country and regional capacity

STRATEGIC SUPPORT FOR RESEARCH & DEVELOPMENT

13. International Research and Product Development activities that address key constraints to rolling back malaria will be incorporated into the global Roll Back Malaria partnership. This will result in intensified collaboration with the private sector to develop new and more cost effective tools for malaria control. The major institution for this component is the cosponsored Tropical Diseases Research Programme, managed by WHO. Another is the Medicines for Malaria Venture (MMV) which will operate as a commercial enterprise, using public funds to accelerate the development of effective new anti-malarial treatments and vaccines. A third is the Multilateral Initiative on Malaria, an independent consortium of research groups seeking scientific responses to the challenge of malaria in Africa. Roll Back Malaria will help these vital initiatives to agreed priorities to accelerate global efforts to reduce the malaria burden.

MONITORING PROGRESS & OUTCOMES

14. Support to monitoring and evaluation will be provided by RBM, and standardised methods and criteria for monitoring and evaluation of interventions at the district level will be developed. Further, a monitoring and evaluation system will be established within WHO to track the global progress of Roll Back Malaria implementation and its impact on the health sector.

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ಮಲೇರಿಯಾ ಜೈವಿಕ ನಿಯಂತ್ರಣ ಸಮಿತಿ

(ಪ್ರವರ್ತಕರು: ದ.ಕ. ಪರಿಸರಾಸಕ್ತ ಒಕ್ಕೂಟ, ದ.ಕ.ಪ. ಕೃಷಿಕರ ವೇದಿಕೆ, ನಾಗರಿಕ ಸೇವಾ ಟ್ರಸ್ಟ್)

ಕಛೇರಿ: ಸೈಂಟ್ ಜೋಸೆಫ್ಸ್ ಹೈಲ್ಯಾಂಡ್, ಲೋವರ್ ಬೆಂದೂರು, ಮಂಗಳೂರು - 575 002

ಫೋನ್: ಮಂಗಳೂರು ಕಛೇರಿ: 0824 - 437224 ಅಧ್ಯಕ್ಷ: 428016 ಕಾರ್ಯದರ್ಶಿ: 495498

08252 - 71201

78566

Ref: _____ Date: 23rd March 1999

Dear Dr. Murgendrappa,

In 1998, the Mangalore Nagara Parisarasaktha Okkoota and Nagarika Seva Trust have decided to take active interest in the problem of the resurgence of Malaria in Mangalore and its environs. With the active cooperation of the corporation Medical Officer's team, the KMC staff, local professional bodies and NGOs and the enthusiastic support of Malaria Research Centre-Bangalore and Community Health Cell-Bangalore, it organised a series of meetings at different levels, visits by MRC team to study the problem; a training programme for representatives of NGOs on bio-environmental control; a dialogue with the corporaters; and the distribution of handouts and some background materials. This led to the formation of the Malaria Jayvika Niyantrana Samithi (Biological Control of Malaria Committee). In the last few weeks, the same group of people have also explored the problem of Dengue, which re-emerged in Mulki and other areas and may spread to Mangalore as well.

We now feel that it would be a good idea to bring together all our resource persons and enthusiastic collaborators in a 1½ days workshop at Mangalore on 6-7th April, 1999 to

1. to present/share findings/experience of various visits and meetings held in connection with malaria initiatives both in Mangalore as well as in other parts of state and action taken;

2. chalk out a Malaria/Dengue Action Plan which identifies the challenges, the specific peculiarities of the situation in Mangalore and the responsibilities and roles of all the collaborating groups and especially the active contribution and participation of 'Civil Society' in the control programme in the months ahead.

The meeting will be chaired by Dr. Murugendrappa, Joint Director, Malaria and Filaria of the Directorate of Health Services, Karnataka, who is very

Contd.....

ಕೇಂದ್ರ ಕಛೇರಿ: ನಾಗರಿಕ ಸೇವಾ ಟ್ರಸ್ಟ್ (ರಿ.) ಅಂಚೆ: ಗುರುವಾಯನಕೆರೆ - 574 217

ಫೋನ್: 08256 - 22019, 22709, 22070; ಫ್ಯಾಕ್ಸ್: 22019

ಮಲೇರಿಯಾ ಜೈವಿಕ ನಿಯಂತ್ರಣ ಸಮಿತಿ

(ಪ್ರವರ್ತಕರು: ದ.ಕ. ಪರಿಸರಾಸಕ್ತ ಒಕ್ಕೂಟ, ದ.ಕ.ಪ. ಕೃಷಿಕರ ವೇದಿಕೆ, ನಾಗರಿಕ ಸೇವಾ ಟ್ರಸ್ಟ್)

ಕಛೇರಿ: ಸೈಂಟ್ ಜೋಸೆಫ್ಸ್ ಹೈಲ್ಯಾಂಡ್, ಲೋವರ್ ಬೆಂದೂರು, ಮಂಗಳೂರು - 575 002

ಫೋನ್: ಮಂಗಳೂರು ಕಛೇರಿ: 0824 - 437224 ಅಧ್ಯಕ್ಷ: 428016 ಕಾರ್ಯದರ್ಶಿ: 495498

Ref: _____ Date: _____

keen to enhance the collaboration between government, NGOs and others in the control programmes. Dr. K. P. Ganesan, Retired Principal, K.M.C, Mangalore has consented to be the facilitator for the entire workshop.

You have been an active participant/supporter of Malaria Action in Mangalore city and we invite you to join this dialogue and share your ideas and perceptions about the problem and help us to evolve a relevant action plan.

The VENUE of the workshop will be K.M.C, Attavar Time : 10 a.m. to 5 p.m. on 6th of April 1999, and 10 a.m. to 1 p.m. on 7th of April 1999. A tentative plan of the workshop is enclosed.

We look forward to your active participation in the initiative,

With best wishes,

Yours sincerely,

A. Suresh Shetty

ಮಲೇರಿಯಾ ಜೈವಿಕ ನಿಯಂತ್ರಣ ಸಮಿತಿ
ಕಛೇರಿ: ಸೈಂಟ್ ಜೋಸೆಫ್ಸ್ ಹೈಲ್ಯಾಂಡ್, ಲೋವರ್ ಬೆಂದೂರು
ಅಂಚೆ : ಮಂಗಳೂರು - 575 002
ಫೋನ್ : 0820-437224

TENTATIVE PROGRAMME

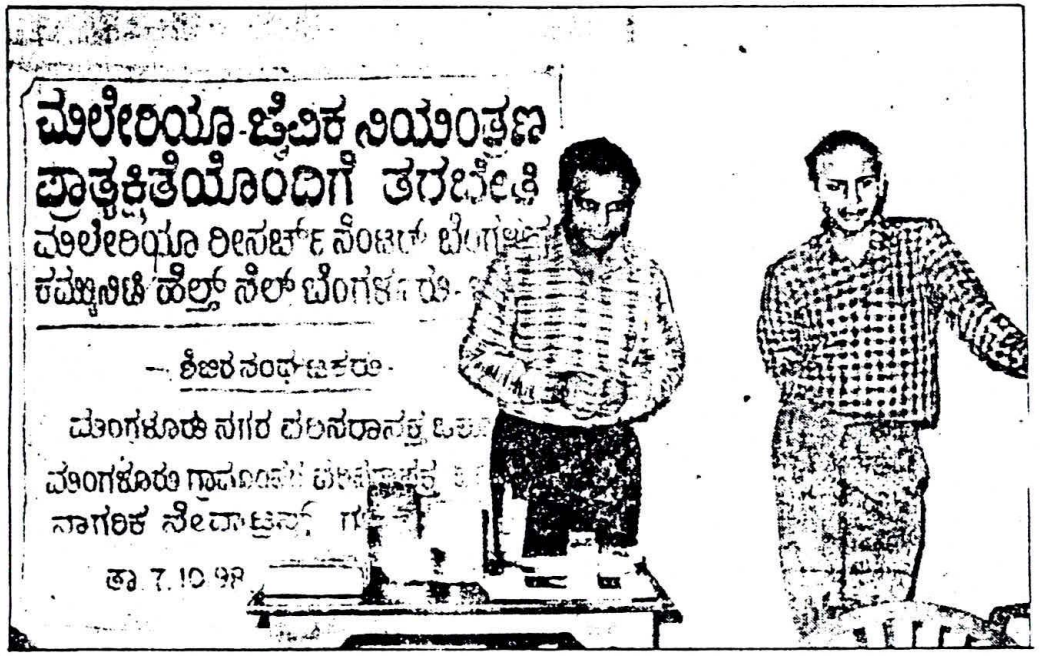
Workshop : Towards an appropriate Malaria/Dengue Action Plan for Mangalore City involving 'Civic Society'.

[The workshop will be an interactive, participatory workshop organised around group dynamic principles to enhance the active involvement of all participants].

6th April, 1999	**Tuesday**
10 a.m.	Inauguration by **Mr. E. V. Ramana Reddy, IAS** Deputy Commissioner, Dakshina Kannada.
10.15 – 11 a.m.	Introduction to Workshop Self introduction by participants (especially interest/involvement in Malaria action)
11 – 11.15	Tea / Coffee

11.15 – 1 p.m.	Understanding the situation in Mangalore - short presentation by, Dr. Parashiva Murthy, Dr. Ravi Kumar, Dr. Venugopalan, Dr. Praveen Kumar, Dr. S. K. Ghosh, CHC team and others; - Inputs by all participants in the discussion (Session will identify the salient features of the problem of Malaria/Dengue in Mangalore which need to be considered while evolving an Action Plan)
1 – 2 p.m.	Lunch
2 – 4 p.m.	Ideas for Action – Evolving a checklist – what has been done ? – what can be done ? (This session will take stock of all that has been done, all that is being planned and all other ideas for action that participants any suggest)
4 – 4.15 p.m.	Tea / Coffee
4.15 – 5.15 p.m.	Group Discussion I. Vector Control II. Rational Malaria Care III. Community participation IV. Intersectoral coordination
7th April, 1999	**Wednesday**
9.30 a.m.	Plenary : Towards an Appropriate Strategy for an Action Plan Reports of Group I, II, III and IV. Discussion
11.30 a.m.	Final session - Roles and Responsibilities of participating groups - A resources inventory – next steps

ಬುದ್ಧಿವಂತರ ಜಿಲ್ಲೆಗೆ ಮಲೇರಿಯಾದಲ್ಲೂ ಅಗ್ರಪಂಕ್ತಿ!



ರಕ್ಷಕರೇ ಭಕ್ಷಕರಾದಾಗ...

ಮಲೇರಿಯಾ ಜೈವಿಕ ನಿಯಂತ್ರಣ ಪ್ರಾತ್ಯಕ್ಷಿಕೆ ಮತ್ತು ತರಬೇತಿ ಶಿಬಿರದಲ್ಲಿ ಪಾಲ್ಗೊಂಡ ಜನಪ್ರತಿನಿಧಿಗಳಲ್ಲಿ ಮಲೇರಿಯ ಬಗೆಗೆ ಅವರಿಗೆ ತಿಳಿದಿರುವ ಮತ್ತು ತಿಳಿಯಲು ಆಸಕ್ತಿ ಇರುವ ವಿಷಯಗಳ ಬಗೆಗೆ ಬೆಂಗಳೂರಿನ ಮಲೇರಿಯಾ ಸಂಶೋಧನಾ ಕೇಂದ್ರ ಮತ್ತು ಸಮುದಾಯ ಆರೋಗ್ಯ ಕೇಂದ್ರದ ವೈದ್ಯರುಗಳು ಪ್ರಶ್ನಿಸಿದಾಗ ಓರ್ವ ಮಹಿಳೆ ಹೇಳಿದ ವಿಷಯ 'ರಕ್ಷಕರೇ ಭಕ್ಷಕರಾದಾಗ....' ಎಂಬ ಮಾತನ್ನು ಮತ್ತೆ ನೆನಪಿಸುವಂತೆ ಮಾಡಿತು.

ಆರೋಗ್ಯದ ಬಗೆಗೆ, ಶುಚಿತ್ವದ ಬಗೆಗೆ ಒತ್ತು ನೀಡಿ ಜನತೆಯನ್ನು ರಕ್ಷಿಸಬೇಕಾದ ಆಸ್ಪತ್ರೆಯೇ ಜನತೆಯ ಅನಾರೋಗ್ಯಕ್ಕೆ, ವಿವಿಧ ರೋಗ-ರುಜಿನಗಳಿಗೆ ನಾಂದಿ ಹಾಡುತ್ತಿದೆಯೇನೋ ಎಂದು ಕ್ಷಣ ಕಾಲ ಯೋಚಿಸುವಂತೆ ಮಾಡಿತು.

ಆತ್ಮಾವರದ ಮಹಿಳೆಯೋರ್ವರು ಹೇಳುವಂತೆ, ಪಕ್ಕದ ಆಸ್ಪತ್ರೆಯ ಡ್ರೈನೇಜ್ ತಮ್ಮ ಬಾವಿಗೆ ಬರುತ್ತಿರುವುದನ್ನು ಪ್ರಸ್ತಾಪಿಸುತ್ತಾರೆ. ಮಾತ್ರವಲ್ಲ, ಆಸ್ಪತ್ರೆಯ ಸುತ್ತಣ ಆವರಣವಿಡೀ ಕಸದ ತೊಟ್ಟಿಯಾಗಿರುವುದನ್ನು ನಮ್ಮ ಮುಂದಿಟ್ಟು ಪರಿಸರದ ದುಸ್ಥಿತಿಯ ಬಗೆಗೆ ಬೆಳಕು ಚೆಲ್ಲುತ್ತಾರೆ.

ನಮ್ಮ ಪ್ರತಿನಿಧಿ ವರದಿ

ಮಂಗಳೂರು :ಪ್ರಪಂಚದಾದ್ಯಂತ 50 ಕೋಟಿ ಜನರು ಮಲೇರಿಯದಿಂದ ಬಳಲುತ್ತಿದ್ದು ಅದರಲ್ಲಿ ಶೇಕಡಾ 80ರಷ್ಟು ಭಾಗ ಆಫ್ರಿಕಾವನ್ನು ಕಬಳಿಸಿದ್ದರೆ, ಉಳಿದ ಶೇಕಡಾ 20ರಷ್ಟು ಭಾಗ ಭಾರತವನ್ನು ಆಕ್ರಮಿಸಿಕೊಂಡಿದೆ. ಆದರಲ್ಲೂ ಕರ್ನಾಟಕಕ್ಕೇ ಅಗ್ರಸ್ಥಾನ. ರಾಜ್ಯದಲ್ಲೇ ಬುದ್ಧಿವಂತರು, ಸಾಹಸಿಗಳ, ಶ್ರಮಜೀವಿಗಳ ಜಿಲ್ಲೆಯೆನಿಸಿದ ದ.ಕ. ಮಲೇರಿಯಾ ರೋಗ ಹರಡುವಿಕೆಯಲ್ಲೂ ಬಳ್ಳಾರಿಯೊಂದಿಗೆ ತನ್ನ ಅಗ್ರಪಂಕ್ತಿಯನ್ನು ಉಳಿಸಿಕೊಂಡಿರುವುದು ದೊಡ್ಡ ದುರಂತವೇ ಸರಿ ಎಂದು ವಿಷಾದ ವ್ಯಕ್ತಪಡಿಸಿದರು.

ಅವರು ನಗರದ ಸಂತ ಎಲೋಶಿಯಸ್ ಕಾಲೇಜಿನ ನೂಡಿಯೋ ಸಭಾಂಗಣದಲ್ಲಿ ಬೆಂಗಳೂರು ಮಲೇರಿಯಾ ಸಂಶೋಧನಾ ಕೇಂದ್ರ ಮತ್ತು ಸಮುದಾಯ ಆರೋಗ್ಯ ಕೇಂದ್ರ, ಮಂಗಳೂರು ನಗರ ಮತ್ತು ಗ್ರಾಮಾಂತರ ಪರಿಸರಾಸಕ್ತ ಒಕ್ಕೂಟ ಮತ್ತು ಗುರುವಾಯನಕೆರೆ ನಾಗರಿಕ ಸೇವಾ ಟ್ರಸ್ಟ್ ಸಂಘಟಿಸಿದ ಮಲೇರಿಯಾ ಜೈವಿಕ ನಿಯಂತ್ರಣ ಪ್ರಾತ್ಯಕ್ಷಿಕೆ ಮತ್ತು ತರಬೇತಿ ಶಿಬಿರದಲ್ಲಿ ಮಾತನಾಡುತ್ತಿದ್ದರು.

ಮಲೇರಿಯಾ ಒಂದು ಮಾರಕ ರೋಗ, ಇದರಿಂದ ಸಾಯುವವರ ಸಂಖ್ಯೆ ಅಪಾರ ಎನ್ನುವ ಕಟು ವಾಸ್ತವತೆಯನ್ನು ನಾವು ಹಗುರವಾಗಿ ತೆಗೆದುಕೊಂಡ ಪರಿಣಾಮವಾಗಿ ಇಂದು ಅದು ಪಾರ್ಥೇನಿಯಂನಂತೆ ಹರಡಿ ಜನತೆಯನ್ನು ತತ್ತರಿಸುವಂತೆ ಮಾಡಿದೆ ಎಂದು ಮಲೇರಿಯಾ ರಿಸರ್ಚ್ ಸೆಂಟರಿನ ಮುಖ್ಯಸ್ಥ ಡಾ.ಎಸ್.ಕೆ.ಘೋಷ್ ಹೇಳಿದರು.

ಮಲೇರಿಯಾವನ್ನು ತಡೆಗಟ್ಟುಲು ಜನ ಜಾಗೃತಿ ಮೂಡಿಸುವ ನಿಟ್ಟಿನಲ್ಲಿ ಪರಿಸರಾಸಕ್ತ ಜನಪ್ರತಿನಿಧಿಗಳು, ಅಧಿಕಾರಿಗಳಿಂದ ಕೂಡಿದ ದಕ್ಷ ಸಮಿತಿ ರಚನೆಯಾಗಿ ಕಾರ್ಯಪ್ರವೃತ್ತವಾಗಬೇಕು ಎಂದು ಅವರು ಒತ್ತಿ ಹೇಳಿದರು. ಕಳ್ಳನನ್ನು ಬಂಧಿಸದೆ ಕಳ್ಳತನ ಅಡಗಿಸುವುದು ಹೇಗೆ ಅಸಾಧ್ಯವೋ, ಸೊಳ್ಳೆ ನಿಯಂತ್ರಣ ಮಾಡದೆ ಮಲೇರಿಯಾ ದಮನವೂ ಅಸಾಧ್ಯ ಎನ್ನುವ ಕಹಿ ಸತ್ಯವನ್ನು ಮನದಟ್ಟು ಮಾಡಿದರು.

ಪ್ರಪಂಚದಲ್ಲಿ ಸುಮಾರು 3000 ಜಾತಿಯ ಸೊಳ್ಳೆಗಳಿದ್ದು, ನಮ್ಮ ದೇಶದಲ್ಲೇ ಸುಮಾರು 300 ಜಾತಿಯ ಸೊಳ್ಳೆಗಳಿದ್ದು, ಅವುಗಳಲ್ಲಿ 58 ಜಾತಿಯ ಅನಾಫಿಲಿಸ್ ಸೊಳ್ಳೆಗಳಿದ್ದು 9 ಜಾತಿಯ ಅನಾಫಿಲಿಸ್ ಸೊಳ್ಳೆಗಳು ಮಲೇರಿಯಾ ಹರಡುತ್ತವೆ ಎಂದು ಪ್ರತಿನಿಧಿಗಳ ಎಲ್ಲ ಪ್ರಶ್ನೆಗಳಿಗೆ ಸಾದ್ಯಂತವಾಗಿ ಉತ್ತರಿಸಿದರು. ಜ್ವರ, ಚಳಿ, ಮೈನಡುಕ, ನಿತ್ರಾಣ ರೋಗದ ಲಕ್ಷಣವಾಗಿದ್ದು, ಸೂಕ್ತ ಚಿಕಿತ್ಸೆಗಾಗಿ ತಜ್ಞ ವೈದ್ಯರ ಸಲಹೆ ಪಡೆಯಬೇಕೇ ಹೊರತು, ಸ್ವತಃ ವೈದ್ಯರಾಗಿ ಹೋಗಬಾರದು ಎನ್ನುವ ಕಿವಿಮಾತನ್ನು ಹೇಳಿದರು.

ಮಲೇರಿಯಾ ರೋಗದ ಲಕ್ಷಣ, ಹರಡುವ ರೀತಿಯನ್ನು ವಿವರಿಸಿದ ಅವರು, ಬಳಸುವ ನೀರಿನ ಶುದ್ಧತೆ, ಪರಿಸರದ ಸ್ವಚ್ಛತೆ, ಕೆರೆ-ಬಾವಿಗಳಿಗೆ ಸೊಳ್ಳೆಗಳನ್ನು ನಾಶಪಡಿಸುವ ಗಪ್ಪಿ ಅಥವಾ ಗ್ಯಾಂಬುಸಿಯಾ ಮೀನುಗಳನ್ನು ಹಾಕಿ ಮಲೇರಿಯಾ ಬಾರದಂತೆ ತಡೆಗಟ್ಟುವ ಮುಂಜಾಗ್ರತಾ ಕ್ರಮವನ್ನು ವಿವರಿಸಿದರು.

ಬೆಂಗಳೂರು ಸಮುದಾಯ ಆರೋಗ್ಯ ಕೇಂದ್ರದ ಡಾ.ಶ್ರೀಧರ್ ಅತ್ಯಂತ ಆಕರ್ಷಕ ಶೈಲಿಯಲ್ಲಿ ಮಲೇರಿಯಾದಿಂದ ಆಗುವ ಅಪಾಯ ಮತ್ತು ತಡೆಗಟ್ಟುವ ವಿಧಾನವನ್ನು ವಿವರಿಸಿದರು. ಸಮುದಾಯ ಆರೋಗ್ಯ ಕೇಂದ್ರದ ಡಾ.ರಾಜನ್, ಬೆಂಗಳೂರು ಸಂಶೋಧನಾ ಕೇಂದ್ರದ ಡಾ. ಸತ್ಯನಾರಾಯಣ್ ಪ್ರಾತ್ಯಕ್ಷಿಕೆಯಲ್ಲಿ ಅಮೂಲ್ಯ ಮಾಹಿತಿಗಳನ್ನು ನೀಡಿ ಸಹಕರಿಸಿದರು.

ಮಲೇರಿಯಾ ಜೈವಿಕ ನಿಯಂತ್ರಣ ಮತ್ತು ತರಬೇತಿ ಶಿಬಿರವನ್ನು ಉದ್ಘಾಟಿಸಿದ ಆತ್ಮಾವರ ಕೆ.ಎಂ.ಸಿ.ಆಸ್ಪತ್ರೆಯ ಸೂಪರಿಂಟೆಂಡೆಂಟ್ ಡಾ.ವೇಣುಗೋಪಾಲ್ ಅವರು, ಮಲೇರಿಯಾವನ್ನು ತಡೆಗಟ್ಟುವುದು ಕೇವಲ ಸರ್ಕಾರ ಅಥವಾ ನಗರಪಾಲಿಕೆಯ ಕರ್ತವ್ಯವಲ್ಲ. ಅದು ಪ್ರತಿಯೊಬ್ಬನ ಕರ್ತವ್ಯವಾಗಬೇಕು ಎಂದು ಹೇಳಿ ಕಾರ್ಯಕ್ರಮಕ್ಕೆ ಶುಭ ಕೋರಿದರು.

ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಉಪಮೇಯರ್ ಜ್ಯುಡಿತ್ ಮಸ್ಕರೇನ್ಹಸ್, ಸೋಮನಾಥ್ ನಾಯಕ್, ಎಂ.ಪೀರೇರಾ, ರಘುರಾಮ್, ಸುರೇಶ್ ಶೆಟ್ಟಿ ಮೊದಲಾದವರು ಉಪಸ್ಥಿತರಿದ್ದರು.

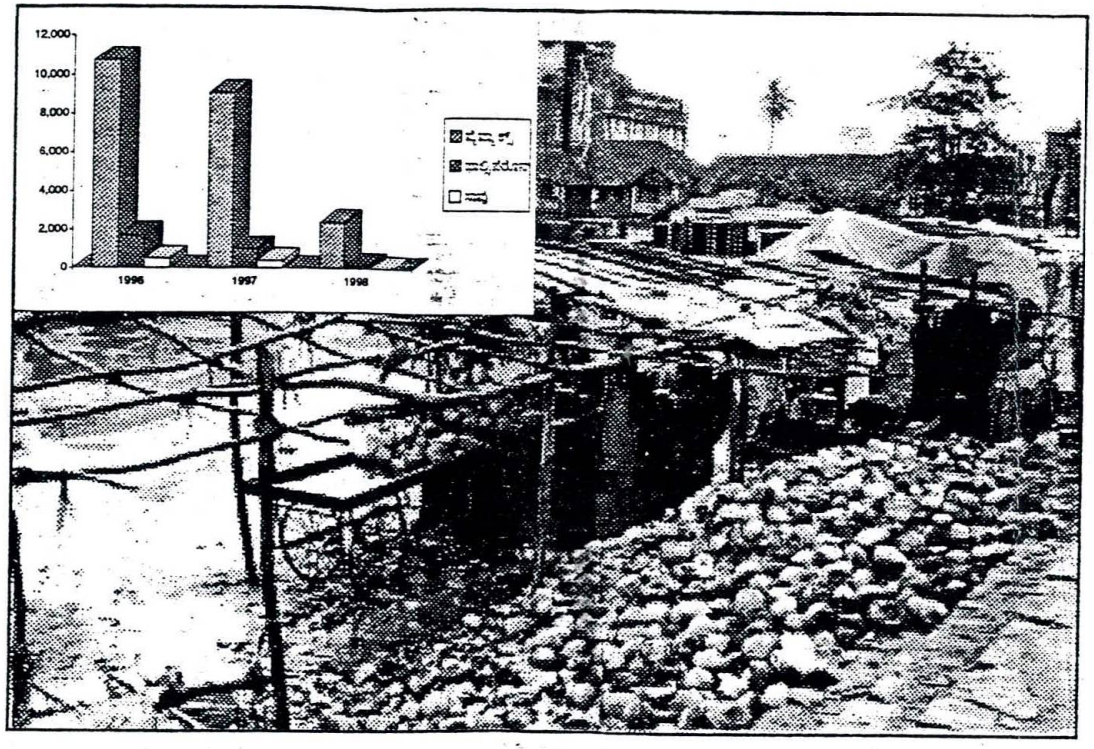
ಜಿಲ್ಲೆಯಲ್ಲಿ ಮಳೆಯೊಂದಿಗೆ ಆರಂಭವಾದ ಮಲೇರಿಯಾ ಭೀತಿ

ಬಿ. ರವೀಂದ್ರ ಶೆಟ್ಟಿ
ಮಂಗಳೂರು, ಜೂನ್17

ಜಿಲ್ಲೆಯಲ್ಲಿ ಮತ್ತೆ ಮಲೇರಿಯಾದ ಪಿಡುಗು ಪ್ರಾರಂಭವಾಗಿದೆ. ಮಳೆಗಾಲದ ಅನಿಶ್ಚಿತ ಮಳೆಯಿಂದ ನಗರದಲ್ಲಿ ಕೊಳಚೆ ಪ್ರದೇಶಗಳು ಉಂಟಾಗಿ ಸೊಳ್ಳೆಗಳು ದಿನದಿಂದ ದಿನಕ್ಕೆ ವೃದ್ಧಿಸುತ್ತಿವೆ.

ನಗರವು ವ್ಯವಸ್ಥಿತವಾಗಿ ಅಭಿವೃದ್ಧಿಯಾಗದ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ಸೂಕ್ತ ರೀತಿಯಲ್ಲಿ ನೀರು ಹರಿದು ಹೋಗುವ ವ್ಯವಸ್ಥೆ ಇಲ್ಲದೆ ಅಲ್ಲಲ್ಲಿ ಸಂಗ್ರಹವಾದ ನೀರಿನಲ್ಲಿ ಮಲೇರಿಯಾ ಹರಡುವ ಸೊಳ್ಳೆಗಳು ಹುಟ್ಟಿಕೊಳ್ಳುತ್ತವೆ. ಕ್ಷಿಪ್ರ ರೀತಿಯಲ್ಲಿ ವೃದ್ಧಿಯಾಗುವ ಹೆಣ್ಣು ಅನಾಫಿಲೀಸ್ ಸೊಳ್ಳೆಗಳು ಜಿಲ್ಲೆಯ ಜನತೆಗೆ ಶಾಪವಾಗಿ ಪರಿಣಮಿಸಿವೆ. ಈ ಸೊಳ್ಳೆಗಳ ಕಡಿತದಿಂದ ಪ್ಲಾಸ್ಮೋಡಿಯಂ ಫೈಪ್ಸ್ ಮತ್ತು ಪ್ಲಾಸ್ಮೋಡಿಯಂ ಪಾಲ್ಸಿಫರಂ ಎಂಬ ಎರಡು ವಿಧದ ಮಲೇರಿಯಾವು ಕಾಣಿಸಿಕೊಳ್ಳುತ್ತಿವೆ. ಪ್ಲಾಸ್ಮೋಡಿಯಂ ಪಾಲ್ಸಿಫರಂ ಮಲೇರಿಯಾವು ಅತ್ಯಂತ ಅಪಾಯಕಾರಿಯಾಗಿದ್ದು ಸೂಕ್ತ ಸಮಯದಲ್ಲಿ ಚಿಕಿತ್ಸೆ ನೀಡದಿದ್ದರೆ ಪ್ರಾಣಹಾನಿಯಾಗುವ ಸಂಭವವಿದೆ.

1996ರಿಂದ ಇಮವರೆಗೆ ಜಿಲ್ಲೆಯಲ್ಲಿ ಒಟ್ಟು 25,384 ಮಂದಿ ಮಲೇರಿಯಾ ಪೀಡಿತರಿದ್ದು, ಈ ಪೈಕಿ 9 ಮಂದಿ ಮಲೇರಿಯಾಕ್ಕೆ ಬಲಿಯಾಗಿದ್ದಾರೆ ಎಂದು ದ.ಕ. ಜಿಲ್ಲಾ ಆರೋಗ್ಯ ಇಲಾಖೆಯ ಕಡತಗಳು ತೋರಿಸಿದರೂ ನಿಜ ಸ್ಥಿತಿಯಲ್ಲಿ ಇದು ಒಂದೂವರೆ ಪಟ್ಟಷ್ಟು ಹೆಚ್ಚು ಮಂದಿ ಈ ಪಿಡುಗಿನಲ್ಲಿ ಸಿಲುಕಿಕೊಂಡಿದ್ದ ಬಗ್ಗೆ ತಿಳಿದು ಬಂದಿದೆ. 1996ರಲ್ಲಿ ಅಧಿಕೃತವಾಗಿ ಮಲೇರಿಯಾಕ್ಕೆ 5 ಮಂದಿ ಬಲಿಯಾಗಿದ್ದಾರೆ. 1997ರಲ್ಲಿ ಈ ರೋಗದಿಂದ 4ಮಂದಿ ಸಾವಿಗೀಡಾಗಿದ್ದಾರೆ. 1996ರಲ್ಲಿ ನಗರ ಪ್ರದೇಶದಲ್ಲಿ 9,880 ಮಂದಿ ಮಲೇರಿಯಾ ಪೀಡಿತರಾಗಿದ್ದರೆ ಗ್ರಾಮೀಣ ಪ್ರದೇಶದಲ್ಲಿ 2,596 ಮಂದಿ ಈ ಪಿಡುಗಿಗೆ ಒಳಗಾಗಿದ್ದರು. 1997ರಲ್ಲಿ ನಗರ ಪ್ರದೇಶದಲ್ಲಿ ಇದರ ಸಂಖ್ಯೆ 7,872ಆದರೆ ಗ್ರಾಮೀಣ ಪ್ರದೇಶದಲ್ಲಿ ಪೀಡಿತರ ಸಂಖ್ಯೆ 2,185ರಷ್ಟಾಗಿತ್ತು. ಪ್ರಸ್ತುತ ವರ್ಷ ಜೂನ್ ತಿಂಗಳ ತನಕ ನಗರ ಪ್ರದೇಶದಲ್ಲಿ 2,081 ಮಂದಿಗೆ ಮಲೇರಿಯಾ ಬಂದಿದ್ದು, ಗ್ರಾಮೀಣ ಪ್ರದೇಶದಲ್ಲಿ 500 ಮಂದಿ ಮಲೇರಿಯಾ ಜ್ವರಕ್ಕೆ ಒಳಗಾಗಿದ್ದಾರೆ. ದಕ್ಷಿಣ ಕನ್ನಡ ಜಿಲ್ಲೆಯಿಂದ ಇತ್ತೀಚಿಗಷ್ಟೆ ಉಡುಪಿ ಜಿಲ್ಲೆಯಲ್ಲಿ ಪ್ರಸ್ತುತ ವರ್ಷ ನಗರ ಪ್ರದೇಶದಲ್ಲಿ 219 ಮಂದಿ ಮಲೇರಿಯಾ ಪೀಡಿತರಾಗಿದ್ದು ಗ್ರಾಮೀಣ ಪ್ರದೇಶದಲ್ಲಿ ಇದರ ಸಂಖ್ಯೆ 51ಆಗಿತ್ತು. 1996ರಿಂದ ಇಮವರೆಗೆ ಪ್ಲಾಸ್ಮೋಡಿಯಂ ಫೈಪ್ಸ್ ಮಲೇರಿಯಾಪೀಡಿತರ ಸಂಖ್ಯೆ 22,467 ಆಗಿದ್ದು, ಪ್ಲಾಸ್ಮೋಡಿಯಂ ಪಾಲ್ಸಿಫರಂ ಮಲೇರಿಯಾ ಪೀಡಿತರ ಸಂಖ್ಯೆ 2,917 ಆಗಿದೆ.



ಪ್ರಸ್ತುತ ವರ್ಷದ ಜೂನ್ ತಿಂಗಳನ್ನು ದೇಶಾದ್ಯಂತ ``ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣ ತಿಂಗಳು'' ಎಂದು ಆಚರಣೆ ಮಾಡಲಾಗುತ್ತಿದೆ. ಮಲೇರಿಯಾದ ಬಗ್ಗೆ ಸಾರ್ವಜನಿಕರಿಗೆ ಹೆಚ್ಚಿನ ಅರಿವು ಮೂಡಿಸಿ ಮಲೇರಿಯಾವನ್ನು ಸಂಪೂರ್ಣ ನಿಯಂತ್ರಣ ಮಾಡುವುದೇ ಇದರ ಉದ್ದೇಶ. ಈ ತಿಂಗಳು ಜಿಲ್ಲೆಯ ನಗರ ಪ್ರದೇಶದಲ್ಲಿ 337ಮತ್ತು ಗ್ರಾಮೀಣ ಪ್ರದೇಶದಲ್ಲಿ 147 ಮಂದಿಗೆ ಮಲೇರಿಯಾ ಜ್ವರ ಬಂದ ಬಗ್ಗೆ ವರದಿಯಾಗಿದೆ. ಇದರಿಂದ ನಮ್ಮ ಜಿಲ್ಲೆಯಲ್ಲಿ 'ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣ ಆಚರಣೆ' ಯ ಆಶಯ ವ್ಯತಿರಿಕ್ತವಾದಂತೆ ಕಂಡು ಬರುತ್ತಿದೆ.

ಕಳೆದ ಕೆಲವು ವರ್ಷಗಳಿಂದ ಮಲೇರಿಯಾವು ದ.ಕ. ಜಿಲ್ಲೆಯ ಜನರನ್ನು ವಿಪರೀತವಾಗಿ ಕಾಡುತ್ತಿದ್ದು, ಇದನ್ನು ನಿಯಂತ್ರಿಸಲು 1995 ರಲ್ಲಿ ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣ ಸಮಿತಿಯೊಂದು ರಚನೆಯಾಯಿತು. ಜಿಲ್ಲೆಯ ಕೆಲವು ಖ್ಯಾತನಾಮರು ಹಾಗೂ ಸಾರ್ವಜನಿಕರು ಒಟ್ಟು ಸೇರಿ ಈ ಸಮಿತಿಯ ಮೂಲಕ ಜನತೆಗೆ ಮಲೇರಿಯಾದ ಬಗ್ಗೆ ಅರಿವು ಮೂಡಿಸುವ ಪ್ರಯತ್ನವನ್ನು ಮಾಡಲಾಯಿತು. ಆದರೂ ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣವಾಗಿಲ್ಲ. ನಂತರ ಸಮಿತಿಯನ್ನು ವಾರ್ಡ್ ಸಮಿತಿಗಳಾಗಿ ವಿಭಜಿಸಿ ವಾರಕ್ಕೊಮ್ಮೆ ಪ್ರತೀ ಮನೆಗಳಿಗೆ ಭೇಟಿ ನೀಡಿ ಮಲೇರಿಯಾದ ಬಗ್ಗೆ ಜಾಗೃತಿ ಮೂಡಿಸುವ ಕೆಲಸವನ್ನು ಹಮ್ಮಿಕೊಳ್ಳಲಾಯಿತು. 1996ರಲ್ಲಿ ಈ ವಾರ್ಡ್ ಸಮಿತಿ ಮತ್ತು ಮಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ ಜಂಟಿಯಾಗಿ ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣದ ವಿರುದ್ಧ ವಿವಿಧ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ಹಮ್ಮಿಕೊಂಡಿತ್ತು. ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣಕ್ಕಾಗಿ ಕೊಳಚೆ ನೀರಿನ ಪ್ರದೇಶಗಳಿಗೆ ಕ್ರಿಮಿನಾಶಕವನ್ನು ಸಿಂಪಡಿಸುವುದು, ಫೋಗಿಂಗ್ ಮಾಡುವುದು, ಮನೆ ಮನೆಗೆ ಭೇಟಿ ನೀಡಿ ರೋಗದ ಬಗ್ಗೆ ಜಾಗೃತಿ ಮೂಡಿಸುವುದು ಮತ್ತು ಔಷಧಿ ವಿತರಿಸುವ ಕಾರ್ಯಕ್ರಮವನ್ನು ಅನುಷ್ಠಾನಗೊಳಿಸಲಾಗಿತ್ತು. ಕ್ರಮೇಣ ಈ ಸಾರ್ವಜನಿಕ ಸಮಿತಿ ವಿಫ್ಲಿಯವಾದಾಗ ಮಹಾನಗರ ಪಾಲಿಕೆಯು ಜವಾಬ್ದಾರಿಯನ್ನು ಹೊತ್ತು ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣದ ಬಗ್ಗೆ ಜಾಗೃತಿ ಮೂಡಿಸುವ ಕೆಲಸವನ್ನು ಮಾಡಿತ್ತು. ಆದರೆ 1997ರಲ್ಲಿ ಮಲೇರಿಯಾ ಪೀಡಿತರ ಸಂಖ್ಯೆ ಹೆಚ್ಚಾಯಿತೇ ಹೊರತು ನಿಯಂತ್ರಣಕ್ಕೆ ಬರಲಿಲ್ಲ.

ಮಹಾನಗರ ಪಾಲಿಕೆಯು ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣ ಕಾರ್ಯಕ್ರಮವನ್ನು ಅನುಷ್ಠಾನಗೊಳಿಸಲು ವಿಫಲವಾದ ಕಾರಣ ಮತ್ತೆ ಮಲೇರಿಯಾ ಹೆಚ್ಚಾಯಿತು. ನಗರದ ಕಸದ ತೊಟ್ಟಿಗಳಲ್ಲಿ, ತುಂಬಿ ತುಳುಕುತ್ತಿರುವ ತ್ಯಾಜ್ಯ ವಸ್ತುಗಳನ್ನು ಸಮರ್ಪಕವಾಗಿ ಸ್ವಚ್ಛಗೊಳಿಸದೆ ಈ ಕಸದ ತೊಟ್ಟಿಗಳು ಸೊಳ್ಳೆ ಸಾಕಾಣೆ ಕೇಂದ್ರವಾಗಿ ಮಾರ್ಪಟ್ಟವು.ನಗರಪಾಲಿಕೆಯಲ್ಲಿ ಪೌರ ಕಾರ್ಮಿಕರ ಮತ್ತು ತ್ಯಾಜ್ಯ ಕೊಂಡೊಯ್ಯುವ ವಾಹನದ ಕೊರತೆ ಇದೆಯೆಂದು ಅಧಿಕಾರಿಗಳು ಹೇಳಿದರೂ, ಇದ್ದ ವಾಹನ ಮತ್ತು ಪೌರ ಕಾರ್ಮಿಕರಲ್ಲಿ ಸಮರ್ಪಕವಾಗಿ ಕೆಲಸ ಮಾಡಿಸುವ ಅಗತ್ಯ ಇದೆ. ಮಹಾನಗರ ಪಾಲಿಕೆಗೆ ನೂತನವಾಗಿ ಆಯ್ಕೆಯಾದ ಮೇಯರ್ ಮತ್ತು ಉಪಮೇಯರ್‌ಗಳು ಈ ಬಗ್ಗೆ ಯಾವ ನಿರ್ಧಾರವನ್ನು ತೆಗೆದುಕೊಳ್ಳುತ್ತಾರೆ ಎಂಬುವುದನ್ನು ಕಾದು ನೋಡಬೇಕಾಗಿದೆ.

ಕೇವಲ ಸರಕಾರದ ಕಾರ್ಯಕ್ರಮದಿಂದಾಗಲೀ ಜನಪ್ರತಿನಿಧಿಯಿಂದಾಗಲೀ ಮಲೇರಿಯಾವನ್ನು ನಿಯಂತ್ರಣ ಮಾಡಲು ಅಸಾಧ್ಯ. ಇದಕ್ಕೆ ಇಲ್ಲಿನ ಸಾಮಾನ್ಯ ಜನರ ಧಾಗಡಿಸುವಿಕೆ ಮುಖ್ಯ. ಇಲ್ಲಿನ ಜನತೆ ಈ ಬಗ್ಗೆ ಹೆಚ್ಚು ಮುತುವರ್ಜಿಯಲ್ಲಿ ಪರಿಸರವನ್ನು ಶುದ್ಧವಾಗಿಟ್ಟುಕೊಳ್ಳುವುದು ಅತಿ ಮುಖ್ಯ. ಈ ಹಿನ್ನೆಲೆಯಿಂದ ಸಾರ್ವಜನಿಕರು ಈ ಬಗ್ಗೆ ಹೆಚ್ಚಿನ ಅರಿವು ಪಡೆದು ಸಕ್ರೀಯವಾಗಿ ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣಕ್ಕೆ ಹೋರಾಡಬೇಕಾಗಿದೆ.

ಮಲೇರಿಯಾ ನಿಯಂತ್ರಣ ಹೇಗೆ?

ಸುತ್ತಮುತ್ತಲ ಪ್ರದೇಶವನ್ನು ಸ್ವಚ್ಛವಾಗಿರಿಸಿಕೊಳ್ಳುವುದು, ಕೆರೆ ಕೊಳ್ಳಗಳಲ್ಲಿ ವಿಶೇಷ ರೀತಿಯ ಮೀನು (ಗಾಂಬೂಸಿಯಾ ಹಾಗೂ ಗಪ್ಪಿ ಮೀನು ಸೊಳ್ಳೆ ನಿರ್ಮೂಲನ ಮಾಡುತ್ತವೆ.)ಗಳನ್ನು ಬಿಡುವುದು. ಸೊಳ್ಳೆಯಿಂದ ಕಡಿಸಿಕೊಳ್ಳುವುದರಿಂದ ತಪ್ಪಿಸಲು, ಸೊಳ್ಳೆ ಪರದೆ, ಬೇವಿನ ಎಣ್ಣೆಯನ್ನು ಮೈಗೆ ಹಚ್ಚಿಕೊಳ್ಳುವುದು. ಪರಿಸರದ ಹೊಂಡಗಳಲ್ಲಿ ಕಸಕಡ್ಡಿ, ನೀರು ನಿಲ್ಲದಂತೆ ನೋಡಿಕೊಳ್ಳುವುದು. ನೀರಿನ ತೊಟ್ಟಿಗಳು, ಮಾಟರ್ ಕೂಲರ್‌ಗಳು, ಚಿಲುಮೆಗಳನ್ನು ನಿಯಮಿತವಾಗಿ ಶುಚಿಗೊಳಿಸುವುದು.

ENCLOSURE-D

PROCEEDINGS OF THE MEETING OF HIGH POWER COMMITTEE ON IMPLEMENTATION OF BIO-ENVIRONMENTAL METHODS OF MALARIA CONTROL HELD ON 20TH OCTOBER 1998 AT 12.00 NOON IN ROOM NO. 313, COMMITTEE ROOM, VIDHANA SOUDHA, BANGALORE UNDER THE CHAIRMANSHIP OF CHIEF SECRETARY TO GOVERNMENT.

MEMBERS PRESENT:

1. Sri B.K.Bhattacharya	: Chief Secretary to Govt....Chairman
2. Sri B.Eswarappa	: Secretary to Govt. Health & Family Welfare Dept.
3. Sri C.Mohan	: Deputy Secretary to Govt., Health & Family Welfare Dept.
4. Dr.M.T.Hemareddy	: Director, Health & Family Welfare Services, Bangalore ....Member ....Secretary.
5. Dr.P.B.Shome	(Dr.Regional Director,GOI, Regional Office of Health & Family Welfare,Bangalore.
6. Dr.M.K.Balakrishnaiah	: Director,Department of Forest Ecology and Environment.
7. Dr.T.C.Chidambar Murthy	: Deputy Secretary I/c.Irrigation Dept.
8. Dr.M.V.Murugendranna	: Joint Director (M&F),Health & Family Welfare Services,B'lore.
9. Sri D.M.Abdul Vameed	: Joint Director of Fisheries.
10. Sri C.S.S.Sharma	: Internal Financial Advisor, Health & Family Welfare Dept.
11. Dr.Shyamal Biswas	: Officer Incharge, NICD,GOI,B'lore.
12. Dr.S.K.Ghosh	: Officer Incharge,M.R.C.Bangalore.
13. Dr.T.S.Satyanarayan	: A.R.S.,M.R.C.,Bangalore.
14. Dr.S.N.Tiwari	: M.R.C.,Bangalore.
15. Sri A.Prakash	: Sr.Entomologist, Health & Family Welfare Services, Bangalore.

- - - - - - - - - - -

At the outset Secretary Health and Family Welfare Department while discussing the role of mosquitoes in the transmission of the diseases like Malaria, Japanese Encephalitis and Dengue stressed the need for implementation of Biological method of control by the use of Larvivorus fish as it is one of the cost effective, long-lasting and permanent measures. Further, he pointed out the urgent necessity feasibility of its implementation in the Malaria problem areas of Mangalore and Bellary cities

2. Dr.Shome, Senior Regional Director, viewed biological method as one of the interventions and not the only method for Malaria control, it has to be supplemented/integrated with other methods and cannot be applied uniformly in all the places.

2.....

3. Dr.Ghosh, Malaria Research Centre, highlighted the use of Larvivorus fish in P.H.C. Kamasamudra for control of Malaria by releasing fishes in all the irrigation wells and tanks which are the main breeding sources for Vector mosquitoes in that area.

4. Health Secretary enquired whether the research findings have been independently evaluated by any other organisation/ research centre.

5. Dr.Balakrishnaiah, Director, Department of Forest, Ecology and Environment briefed regarding the mapping of water bodies through remote sensing through IRS which help in studying water bodies resources for development in the field of Fisheries, Agriculture and Forest.

6. Health Secretary raised the problem of mosquito nuisance in the Bangalore Airport area, and whether stocking of Larvivorous fishes in the nearby Bellandur tank would bring down the mosquito menace in the area.

7. Dr.Shome stated that water sources of Bellandur tank is highly polluted and only nuisance mosquitoes are found to be breeding Sri Abdul Hameed, Joint Director of Fisheries stated that due to high organic and low oxygen content, growth of water hyacinth plants are seen covering the tank where control of mosquito breeding by fish cannot be achieved effectively.

8. Dr.M.V.Murugendrappa, Joint Director (M&F) stated that all major tanks including Airport area have been surveyed and action plan was suggested by the Director, V.C.R.C.Pondicherry, way back in 1988 itself which has to be implemented by the Corporation authorities involving different Department/Sectors with multiple approaches and integrated Vector Control Methods which is very much needed in this regard.

9. Health Secretary informed the Committee that recently Government has issued civic bye-laws for control of mosquito breeding and eradication of Malaria and other mosquito borne diseases which has to be strictly implemented by the Bangalore Mahanagara Palike.

10. Dr.Ghosh highlighted the pilot studies carried out by the Malaria Research Centre in PHC Kanakatte and Banavara in Hassan District by introduction of Larvivorous fishes and impregnated bed nets to the Chief Secretary. Use of biocide was discussed Dr.M.V. Murugendrappa opined that use of Biocides requires further studies as different studies had given different results.

11. Health Secretary stated that introduction of Larvivourous fishes to be taken up in all high risk areas in the State on a war footing basis. Malaria Research Centre was requested to take up field studies to control Malaria in Mangalore and Bellary cities.

12. Dr.M.V.Murugendrappa, Joint Director stated along with introduction of Larvivorous fish, other intervention measures are also to be implemented and already District level staff have been trained in Raichur recently im this regard. Health Department has Already taken up the introduction of Larvivourous fishes in the high risk areas in 17 districts so far. Equipments have been provided for transportation and release of these fishes. Use of Neem Oil for Larvicidal spray was also discussed. Dr.M.V.Murugendrappa further stated that Malaria in project areas is spread by labourers who are brought by the contractors. Goverament has constituted a Committee stating that any project before inception has to obtain clearance by the Committee. Legislative act on the lines of Goa for screening of migrant labour population has to be implemented. Health Secretary asked Joint Director (Malaria) to obtain a copy of the Legislation said to have been enacted by Goa Government and the Rules thereunder and submit a self-contained comprehensive report for taking similar action by the State Goverament.

13. Dr.M.T.Hemareddy, Director, Health & Family Welfare Services stressed regarding the importance of immediate screening of all labourers to be done as and when they arrive.

14. Chief Secretary instructed to chalkout a detail agenda to be taken up for discussion in the next meeting and the meeting was concluded with thanks to the chair.

Sd/-
CHIEF SECRETARY.

No.HFW 103 SMM 98

(SIDDALINGAIAH) 12/11
Under Secretary to Govt.,
Department of Health & Family Welfare,
(Health)

To:

All Concerned.

MALARIA RESEARCH CENTRE

OTHER PUBLICATIONS

(1) Proceedings of the ICMR/WHO Workshop on *Community Participation for Disease Vector Control* (1986) pp. 256
Edited by ***V.P. Sharma***

(2) *Seroepidemiology of Human Malaria — A multicentric study* (1989), pp. 206

Edited by ***V.P. Sharma***

(3) *Indigenous Larvivorous Fishes of India* (1991), pp. 66

A.G.K. Menon

(4) Proceedings of an Informal Consultative meeting WHO/MRC on *Forest Malaria in Southeast Asia* (1991), pp. 206

Editors ***V.P. Sharma*** *and* ***A.V. Kondrashin***

(5) *Malaria Patrika* quaterly (Hindi) 1993 onwards.

(6) Community Participation in Malaria Control (1993), pp. 295

Edited by ***V.P. Sharma***

(7) Larvivorous Fishes of Inland Ecosystem: Proceedings of the MRC-CICFRI Workshop (1994), pp. 224
Editors ***V.P. Sharma*** *and* ***Apurba Ghosh***

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URBAN MALARIA CONTROL
(Example Madras)

7-POINT ACTION PLAN FOR MALARIA CONTROL

Madras city is endemic for malaria and cases of drug resistant *Plasmodium falciparum* malaria have been recorded. Focal malaria outbreaks are often encountered and the problem of urban malaria in Tamil Nadu is of long standing. It may be pointed out that Madras city alone contributes 50-70% new malaria cases annually to the malaria problem of the state (Fig. 1). The vector *Anopheles stephensi* responsible for malaria transmis-

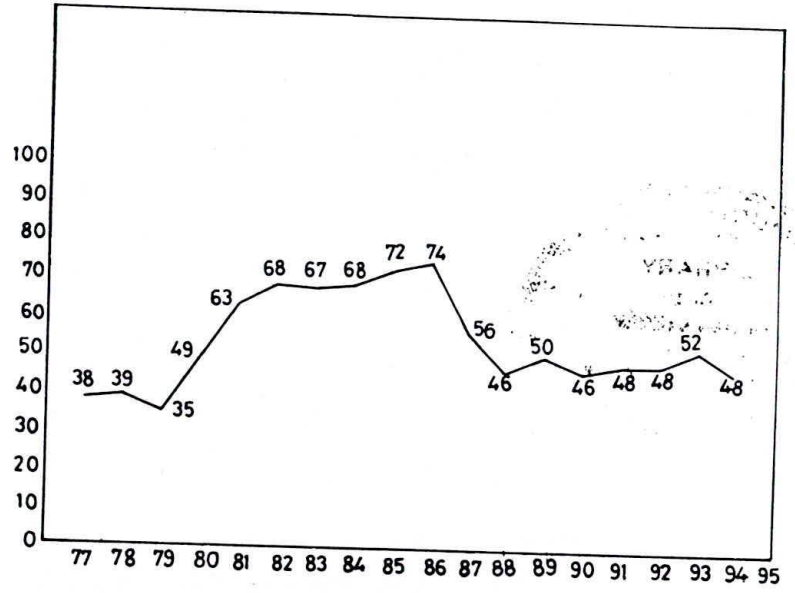

Fig. 1: Percentage of malaria cases indigenous to Madras city in the state of Tamil Nadu

sion in Madras city breeds in clean stored water such as in the overhead tanks, cisterns and wells. Tables 1 and 2 give epidemiological picture of malaria in Tamil Nadu and Madras.

For more than a decade Urban Malaria Scheme (UMS) is under operation in Madras. The present system of malaria control as practiced under the UMS is unlikely to eliminate this focus. Based on the MRC's experience of field work in six divisions of the Corporation a 7-point action plan has been prepared to eradicate malaria from Madras city. The region is also endemic for dengue transmitted by *Aedes aegypti*. It is a container breeder and a day biter. The action plan would also eradicate dengue as a collateral benefit.

Table 1. Incidence of malaria in Tamil Nadu

	Tamil Nadu		Urban malaria (No. of cases)			
Year	No. of cases	*P. falciparum*	Urban centres	Madras city	Riverine area*	Coastal area**
1977	79537	2094	—	28437	—	—
1978	76227	1512	—	29953	—	—
1979	95009	3312	—	33450	—	—
1980	73381	2802	42661	36193	—	—
1981	71517	2531	50742	44951	—	—
1982	65797	3048	47840	44981	—	—
1983	67192	4481	47796	44817	—	—
1984	71320	4724	51839	48523	1835	8164
1985	71347	4303	54795	51376	1426	6726
1986	52741	2848	44852	39197	883	3988
1987	55523	3588	40400	31126	678	4661
1988	74303	5214	44734	34400	725	16322
1989	90478	4244	64584	45622	1811	11651
1990	120029	7039	71551	51272	3407	19489
1991	146997	12293	86915	67013	5095	38373
1992	151633	12244	99335	72314	10539	26296
1993	147663	8932	104777	76749	8621	19069
1994	104266	4974	65024	48352	7268	17986

*Dharmapuri, North and South Arcot District;**Ramanathapuram, Padukkottai Districts.

Source : Directorate of Public Health and Preventive Medicine, Government of Tamil Nadu.

Table 2. Epidemiological data of Madras city

Year	No.of cases	*Pf* + ve	% *Pf*	API	ABER	SPR
1973	617	—	—	0.27	—	—
1974	2560	136	5.31	0.96	2.30	1.26
1975	36207	482	1.33	13.28	9.30	12.99
1976	40623	388	0.96	14.54	8.70	14.68
1977	28437	297	1.04	9.93	9.40	9.34
1978	29953	242	0.81	10.42	9.70	9.67
1979	33450	124	0.37	11.58	8.80	12.86
1980	36193	189	0.52	11.65	6.70	16.16
1981	44951	830	1.85	13.73	8.90	13.83
1982	44981	1673	3.72	13.41	9.20	12.06
1983	44817	2971	6.63	12.98	10.40	10.58
1984	48523	3358	6.90	14.72	9.40	12.36
1985	51376	3185	6.00	15.68	12.60	10.47
1986	39197	2608	6.65	10.59	13.10	7.03
1987	31126	2218	7.12	8.28	16.00	5.20
1988	34400	1982	5.76	8.46	13.90	6.05
1989	45622	2542	5.57	11.40	15.10	7.50
1990	51272	3921	7.60	13.50	15.00	8.51
1991	67013	8024	11.97	17.40	13.50	11.20
1992	72314	7966	11.01	18.66	13.47	11.83
1993	76749	5894	7.60	19.21	11.00	17.12
1994	48352	2057	4.25	12.72	9.77	13.01

Source: Madras Corporation

The strategy suggested in the 7-point action plan is simple, indigenous, free from pollution, cost-effective and provides long-term control of the vector-borne diseases.

ACTION PLAN

1. Action by the Government: An appropriately worded Government Order (G.O.) may be issued to the following agencies responsible for construction and maintenance of all buildings including Defence and Railways, State Government buildings, autonomous organizations, educational institutions, all industrial houses, public buildings and other institutions etc.

The above agencies must observe the following responsibilities with immediate effect.

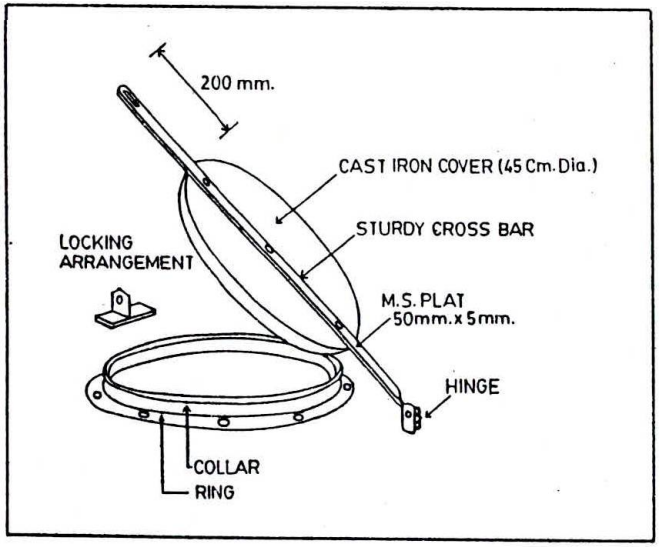

Fig. 2: Standard design of a cover to be used for mosquito proofing of OHT, well or cistern

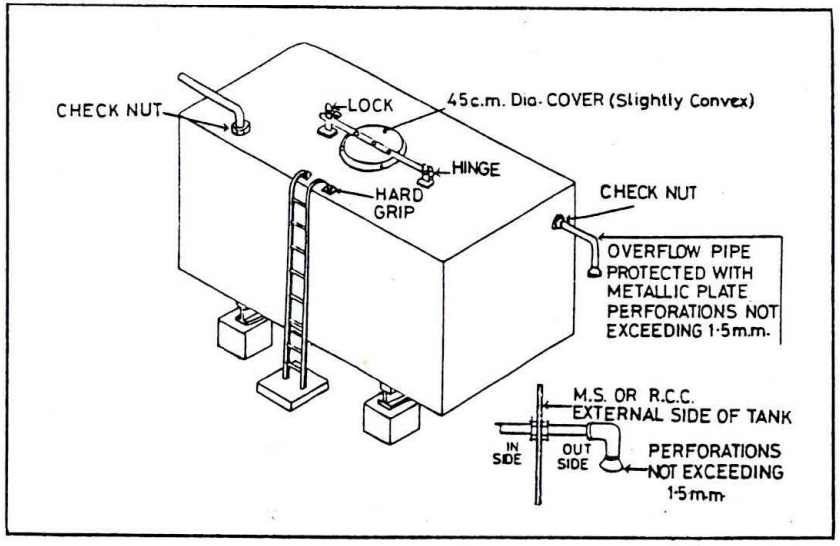

Fig. 3: Standard design of over head tank

Mosquito-proof all water storage overhead tanks (OHTs), cisterns and wells. Water should not be allowed to leak from pipe lines, taps etc. and proper drainage must be maintained. Water coolers and air conditioners etc. should be cleaned atleast once a week to eliminate standing water.

No further installation of OHTs/cisterns and wells should be permitted unless they are mosquito-proofed (Figs. 2-4).

One officer in each building/institution should be designated for vector control work and given full responsibility to ensure that there is no mosquito breeding in his building. His name should be communicated to the Corporation as a contact person for interaction and inspection. He should be allowed adequate budget for vector control work and made fully accountable. Expenditure towards this activity should preferably be met from the budget of the respective organisation/institution.

The Government should also ensure the following :

(i) Technology for mosquito proofing of the wells, OHTs/cisterns should be made available easily through various media. It would also be advisable to ensure the availability of readymade mosquito-proof OHTs/cisterns etc. in the open market for installation.

(ii) Provision of loans (preferably interest free) should be made through banks or Corporation to avoid hardships in the mosquito-proofing of water storage facilities. Recovery of loans should be made in easy installments.

(iii) A source for the supply of larvivorous fish and expanded polystyrene (EPS) beads should be identified and given due publicity.

(iv) Larvicidal oil should be available in the open market in tins for use by the contractors (at present it is a government supply). The label on the tin should provide full instructions on its method of application.

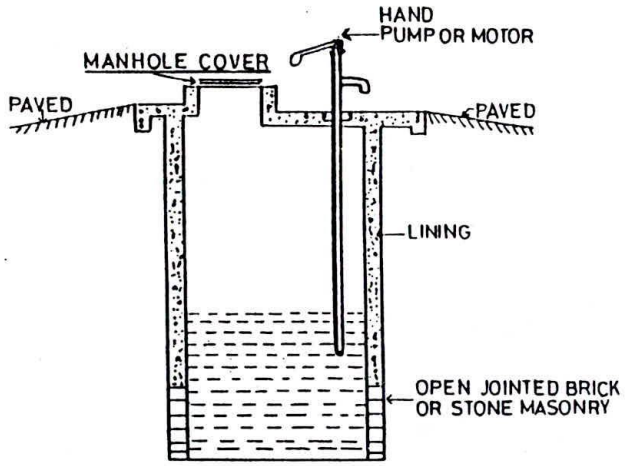

Fig. 4: Standard method of mosquito proofing a well

A similar action of mosquito-proofing of OHTs/cisterns and wells should be adopted in all colonies/divisions of the Madras city. In order to implement the strategy Health Department/Corporation should elicit people's participation, involve health education bureau, prepare educational material and make full use of media. The Health Department should also involve voluntary agencies, non-governmental organizations (NGOs), students, *Mahila mandals* and other action groups in whatever manner possible in dissemination of activities of the action plan for mosquito control and solicit positive support through individuals and joint action (e.g., *shramdan*) for the preventive and corrective aspects of mosquito breeding.

It may be noted that main mosquito breeding sites of malaria vector *An. stephensi* are OHTs and wells followed by cisterns. Mostly *Ae. aegypti* (a day biter mosquito) breeds in cisterns, and is responsible for dengue outbreaks and during 1989 there were cases of dengue haemorrhagic fever in Madras.

A major activity of Health Department should be to identify all mosquito breeding sites (geographical reconnaissance) and prepare action plan for the control of mosquito breeding for each habitat. In this activity Health Department would be required to solicit help from other departments/agencies. Follow-up action,

persuasion, providing technical guidance and monitoring would be an important function of the Health Department which must be planned and executed meticulously.

Early case detection through passive agencies, activated mass blood surveys, rapid blood smear examination and administration of presumptive and radical treatment must be ensured. In certain high transmission areas malaria clinics may be opened and given full publicity.

2. Inter- and Intra-Departmental Coordination: Health department of corporation/municipalities in consultation with the state health department should be responsible for coordination of vector control work in the city. In that capacity they would be required to solicit from their own and other departments/agencies their active participation in preventive and corrective aspects of mosquito control. Some government departments must participate in malaria control programme directly. For example water supply department must ensure that water pipes/lines are well protected and not damaged and there are no leaking water taps or pipelines. All leakages/damages should be repaired on priority basis within 24-48 hours and stagnant water drained. Sewage and storm water pipes should be well maintained and cleaned as and when due. All manhole covers should be repaired and properly installed to prevent mosquito emergence. Similarly, ventilating shafts should be mosquito-proofed. Horticulture department must ensure that no mosquito breeding occurs in stagnant water in gardens, parks, and ornamental fountains etc. The fisheries department must ensure clear shore line of the ponds and other water bodies and survival of larvivorous fishes in all water bodies. All government engineering departments must ensure prevention of water stagnation, adequate drainage and if stagnant water is required for some activity it should be suitably treated to prevent mosquito breeding.

Health department should elicit people's participation and involvement in mosquito control through educational programmes and they should make full use of media in achieving this. School/College students and voluntary agencies should be mobilised in preventing mosquito breeding.

It may be pointed out that in certain parts of Madras city there is acute shortage of water and people belonging to low socio-economic status are the worst hit. In such localities water lines are damaged or public water facilities are misused. Government must ensure proper water supply in such areas before initiating action to repair the damage or stopping water supply to such localities.

3. Legislative Measures: Municipal bye-laws must be implemented rigidly and defaulters should be punished. Bye-laws in Madras have been amended recently for this purpose. For the effective enforcement of provisions under the Public Health Act and Madras City Municipal Corporation Act, the Assistant Entomologists may be empowered to issue notices and institute prosecution proceedings with the prior approval of the concerned Senior Entomologist. The fine to be imposed to the defaulters should double up every time with non-compliance. The Government of Tamil Nadu may be requested to bring suitable amendment to the Act.

4. Clearance from Health Department: New constructions should be permitted only after obtaining permission/clearance from the health department/corporation of Madras and it should be made compulsory for the owners to deposit the expenditure to be incurred for undertaking anti-mosquito measures in their premises. The Health Department/Corporation of Madras should decide on the amount to be deposited, for undertaking preventive/remedial measures, depending upon the potential breeding sources and duration of water storage. No building plan should be cleared if it does not fulfill the conditions specified in the Public Health Act. In the ongoing constructions mosquito proofing of OHTs, cisterns and wells must be ensured, and help of bye-laws should be taken for compliance. It may be pointed out that this procedure is currently followed by the Bombay Municipal Corporation and there are no protests or complaints in the implementation of this system.

5. Tropical Aggregation of Labour: A large number of agencies are constantly engaged in construction work all over the township. It has been observed that tropical aggregation of labour for construction is often the primary cause of the establishment of foci resulting in outbreaks of malaria. It is therefore, absolutely essential that (i) incoming labour is screened for malaria infection and given radical treatment, and (ii) all construction sites are made free of mosquito breeding. In order to achieve this objective construction companies/contractors must take help of health department and ensure that water is not allowed to stagnate. All standing water whether for curing or construction work must be treated with chemical larvicides like Baytex or Abate or MLO. In certain situations like big water reservoirs *Gambusia (Gambusia affinis)* fishes should be introduced. In polluted waters Guppy *(Poecilia reticulata)* fishes may be introduced. There should be regular inspection of all sites and preventive measures of mosquito breeding applied rigidly as soon as any standing water is found.

It would be advisable to include the preventive aspects of mosquito control in the contract itself. Government may therefore issue appropriate instructions to all departments for such action. Failure to maintain the site free of mosquito breeding should attract prompt action under the bye-laws. It is noteworthy to mention that this is a fairly easy and inexpensive method of malaria prevention, and if implemented properly it works wonderfully.

In areas of large populations of migrant labour one time screening of labour and radical treatment of those found with malaria parasite may be undertaken by the health department.

6. Implementation Mechanism: The work should be started in phases as indicated below :

Phase-I (Six months)

(i) Map all mosquito breeding sites. This information is already available and may require minor changes/updating.

(ii) Implementation of bye-laws.

(iii) Government order should be issued to all Government, and non-government agencies and other organizations as indicated under item 1.

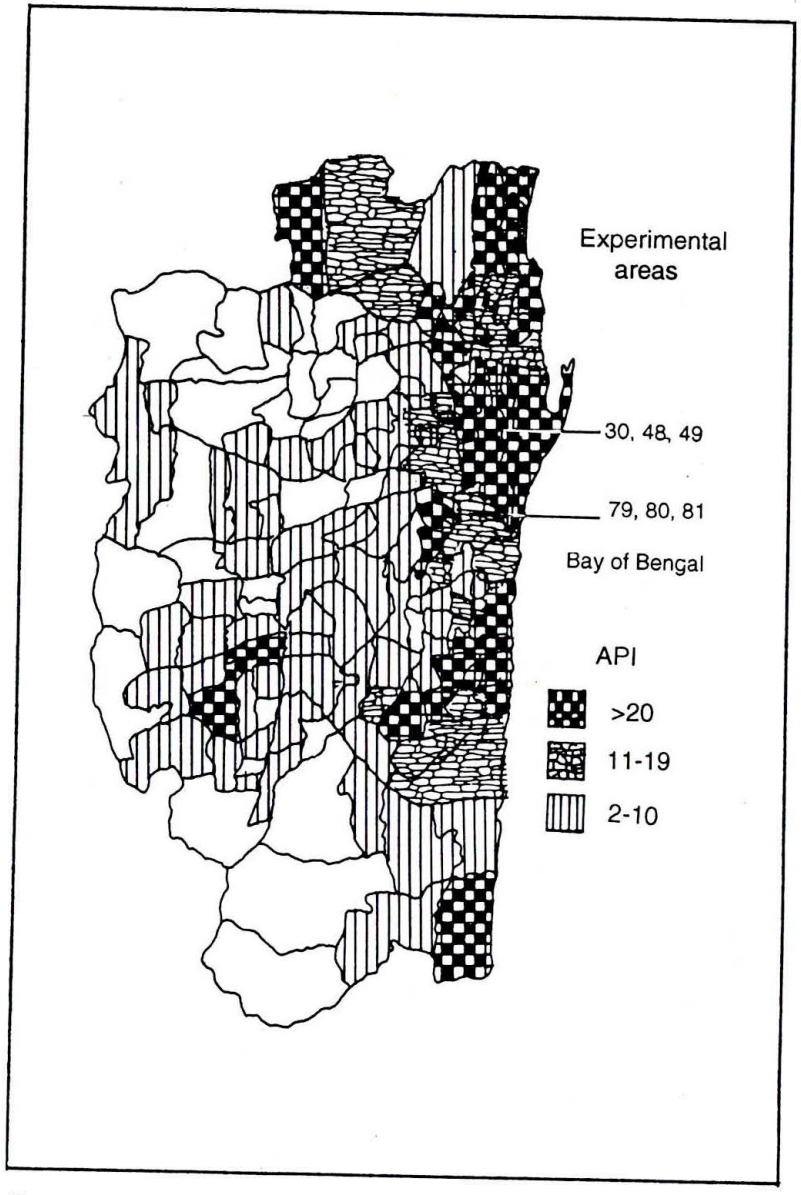

Fig. 5: Madras: The city is divided into 155 divisions. Figure showing the stratification of divisions according to 1993 API. Also shown are 6 divisions under bioenvironmental control strategy implemented by the Malaria Reserach Centre

(iv) Six divisions at present under the MRC should be taken up (Divisions 30, 48, 49, 79, 80, 81) (Fig. 5).

(v) Fish multiplication ponds (for *Gambusia* and Guppy) should be established in as many water bodies as possible.

(vi) Ensure the availability of EPS-beads and availability of mosquito-proofing devices.

Phase-II (Six months)

All high incidence divisions (20 API) should be taken up Fig. 5 (i) Stratification of Madras city according to API, and (ii) Areas currently under the bioenvironmental control strategy i.e., divisions 30, 48, 49, 79, 80 and 81.

Phase-III (Six months)

The entire Madras city may be included. (Figs. 6, 7 and 8). Major mosquito breeding sites of *An. stephensi* (vector of malaria), *Ae. aegypti* (vector of dengue) and *Cx. quinquefasciatus* (vector of filariasis and a nuisance mosquito).

Adoption of above methods will result in almost complete interruption of malaria transmission and also cases of dengue fever (Tamil Nadu is endemic for dengue) would come down drastically. Mosquito nuisance will also be curtailed to a very large extent. Control of *Cx. quinquefasciatus*, a nuisance tropical house mosquito and the vector of filariasis (*Wuchereria bancrofti*) would require major environmental modification works which could be taken up at a later stage.

7. Constitution of Committees: The 7-point action plan may be monitored through a steering committee responsible for ensuring continued government and political support and a project committee to oversee the implementation and monitor its progress. The membership to the committees may be finalised by the Government of Tamil Nadu. The following compositions are suggested;

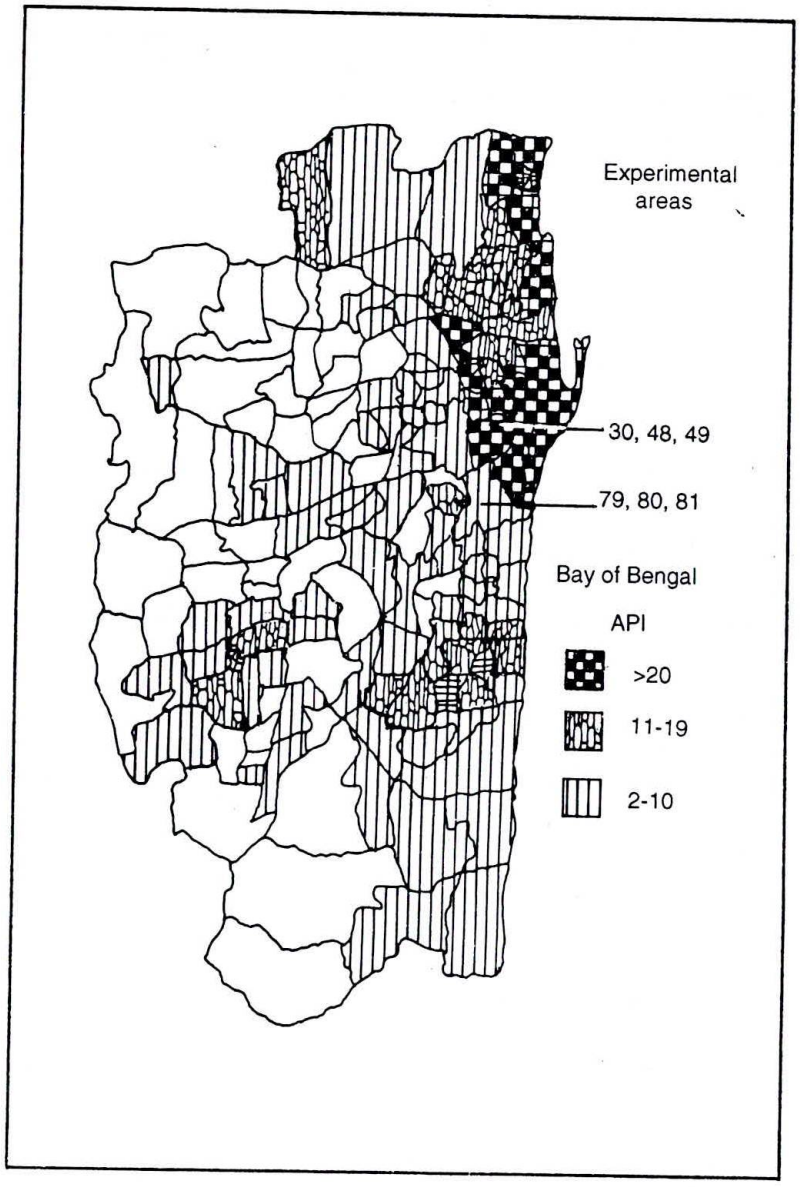

Fig. 6: Madras: The city is divided into 155 divisions. Figure showing the stratification to 1994 API. Also shown are 6 divisions under bioenvironmental control strategy implemented by the Malaria Research Centre

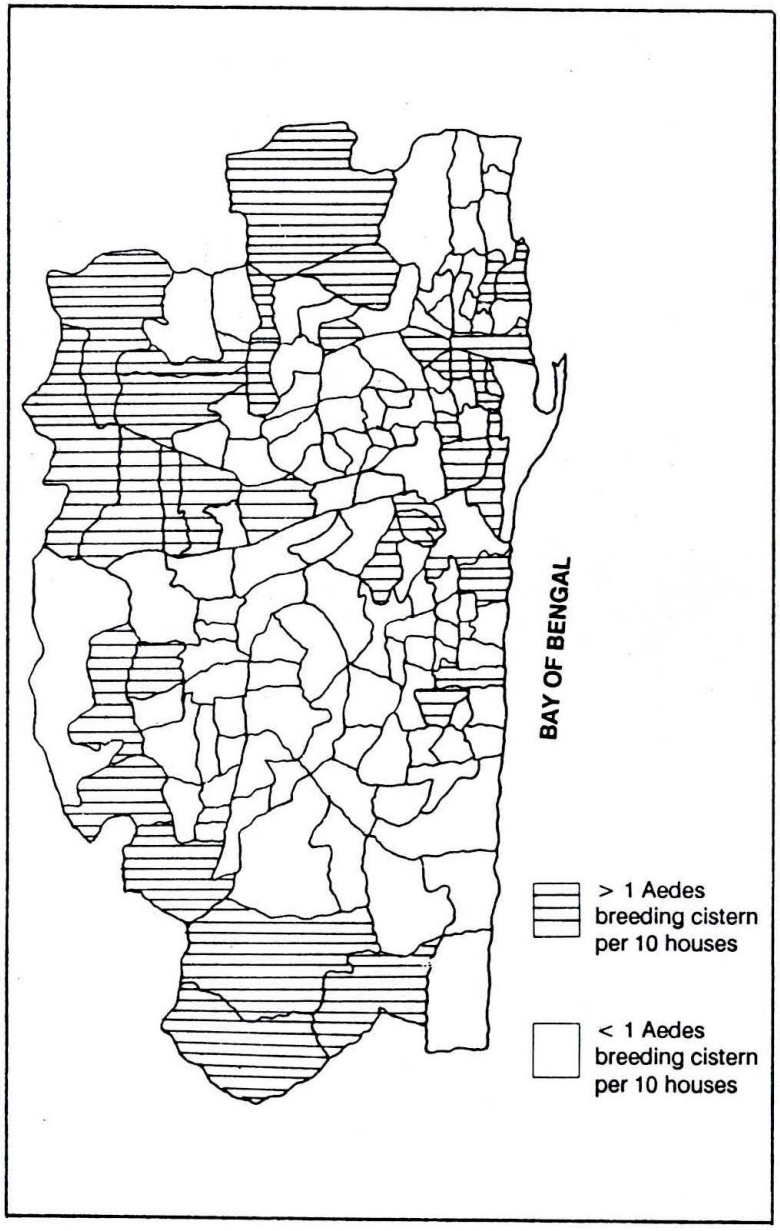

Fig. 7: Madras: *Aedes* breeding potential in the city
(Source: Madras Corporation)

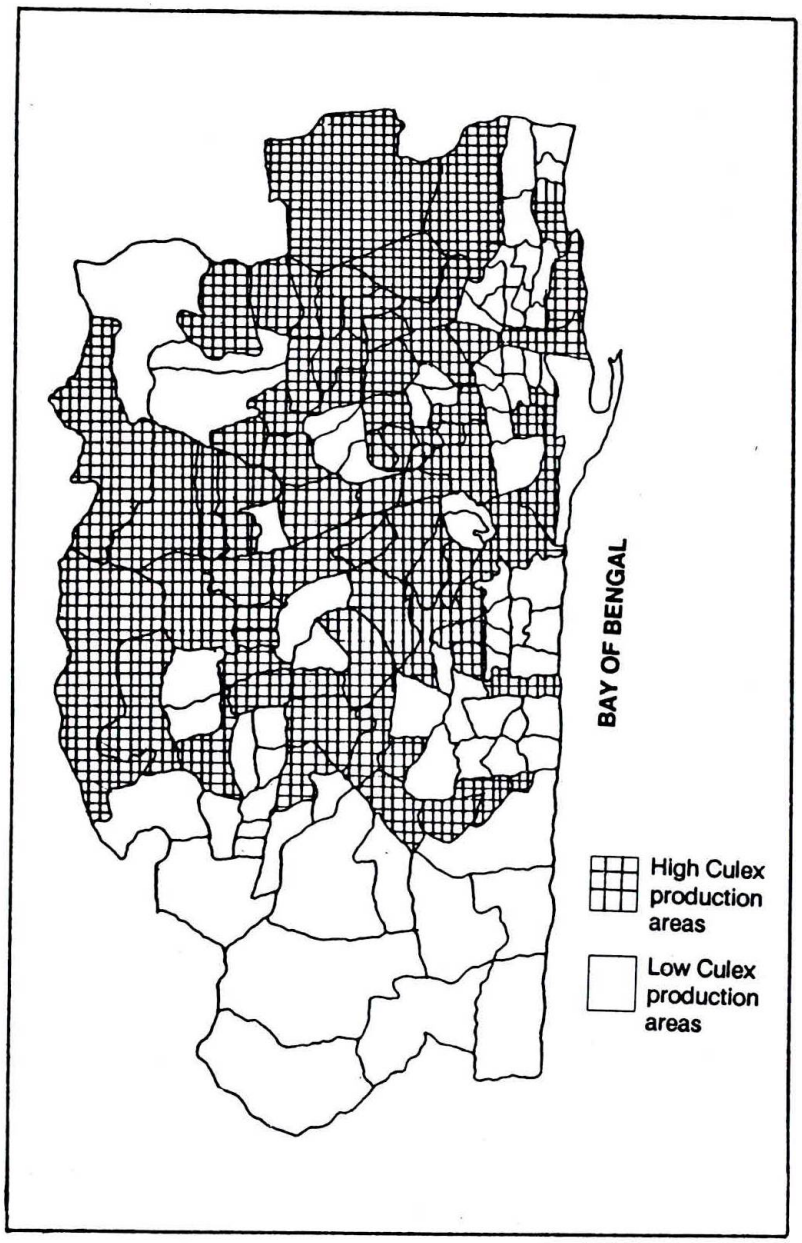

Fig. 8: Madras: *Culex* breeding potential in the city
(Source: Madras Corporation)

(i) A steering committee which would be an apex body may be constituted to steer the project at the government, political and community level. The committee could be chaired by an eminent scientist of international repute. The committee should have nominees of the Chief Minister, NGO, a social worker, Director MRC, Chairman of the project committee and any other member co-opted by the Chairman. This committee would be responsible for obtaining whole hearted support of the politicians and the government and mobilise community's involvement and participation. The committee will also help in removing bottlenecks and ensure adequate funds. This committee would meet atleast once in six months.

(ii) A project committee may be constituted with the Chief Secretary as Chairman to evaluate overall performance of the project and to remove bottlenecks. The committee may comprise of the Secretaries of the Department of Health and Family Welfare, Urban Development, Chief Engineer Public Works Department (PWD), Central Public Works Department (CPWD), Local Self Government, the Director, Additional Director (Malaria), Chief Entomologist, Directorate of Public Health and Preventive Medicine, Special Officer, Commissioner (Health) and Health Officer, Madras Corporation, nominee of the Director, MRC, representative of Railways, Defence and two nominated members from social organizations and any other member co-opted by the Chairman. The committee should meet every quarter.

MALARIA

A Glance at the Diagnosis and Treatment for Family physicians

DIRECTORATE OF
NATIONAL MALARIA ERADICATION PROGRAMME
(GOVT. OF INDIA)

IN COLLABORATION WITH

IMA COLLEGE OF GENERAL PRACTITIONERS (HQ)
NEW DELHI

सत्यमेव जयते

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Dated 25th Feb., 1997

FOREWORD

Malaria was a major problem in India contributing 75 million cases with 0.8 million deaths every year prior to the launching of National Malaria Control Programme in 1953. Though the infection has been contained substantially, it still continues to pose a major challenge with 2 to 2.5 million cases annually. During the last two decades an increasing trend has been noticed in the proportion of malignant malaria cases, with fulminating epidemics claiming many precious lives.

Private Practitioners play an important role in the containment of malaria as a sizeable proportion of patients seek medical aid from them. The concise booklet being brought out by the Directorate of National Malaria Eradication Programme and Indian Medical Association would help and provide proper guidance to the family physicians and health units in private sector on the National Drug Policy on Malaria.

The Intensification of intra and inrersectoral coordination and greater participation in the containment measures auger well for early achievement of our goal of effective control over malaria.

(Dr. S. P. Agarwal)

सत्यमेव जयते

Dr. SHIV LAL
Director

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PREFACE

Malaria continues to be major scourage in India Including metropolitan cities. In the past the capital territory of Delhi experienced malaria epidemics and the medical fraternity was caught unawares with the sudden upsurge of cases in epidemic proportions. The recent experience with dengue epidemic is an apt example in this direction.

In the light, of Revised National Drug Policy of Malaria framed by the Govt. of India, the Directorate of National Malaria Eradication Programme in collaboration with the Indian Medical Association has brought out the present guidelines in the form of booklet for the benefit of family physicians to treat malaria patients in line with the National Drug Policy. A substantial proportion of population in the urban areas consult the family physicians or private Nursing Homes for their medical needs. Many a time the private practitioners treat malaria patients with different antimalarials following variable or indiscriminate dose schedules.

It is envisaged that the salient guidelines given in this booklet will meet the minimum requirements on relevant aspects of diagnosis and treatment of malaria cases. Critical comments and suggestions from the private practitioners are most welcome which will enable us in improving the future publications, whenever warranted.

(Dr. SHIV LAL)

INTRODUCTION

Malaria one of the common diseases, is caused by *Plasmodium* parasite, transmitted by the bite infective female Anopheles mosquito, during transmission season. There are four plasmodium species. In India, **P. vivax is commonest (60-70%) followed by *P. falciparum (30-45%),*** *P. malariae* species is rarely found and *P. ovale is* not found in India.

P. falciparum is a malignant variety of malaria as 0.5% to 2% may develop complicated malaria, of which up to 50% may lead to mortality if timely treatment is not commenced. All malaria **mortality is due to *P. falciparum*** only. A single dose of chloroquine may save the life by averting complications.

CLINICAL PRESENTATION

TYPICAL : Sudden onset of high fever with rigors and sensation of extreme cold followed by feeling of burning heat, leading to profuse sweating and remission of fever by crisis thereafter. The febrile paroxysms occur every alternate day. Headache, bodyache, nausea, etc. may be associated features.

Atypical : In atypical cases, classical presentation as mentioned above may not manifest. Hence, any fever case until unless proved otherwise, may be considered as malaria.

IN CHILDREN : Depending on the degree of temperature, complications such as convulsions, dehydration and disorientation may be present.

P. FALCIPARUM [MALIGNANT]

Most of the case may present similar to *P. vivax* or other malaria cases but in some cases it is continuous and often reaches a high temperature, leading to hyperthermia and other complications as given below.

COMPLICATIONS

Hyperpyrexia
Severe anaemia resulting in hypoxia
Cerebral involvement (cerebral malaria)
Pulmonary oedema
Renal dysfunction
Hypoglycaemia
Haemoglobinuria
Jaundice

DIAGNOSIS

CLINICAL NON COMPLICATED

Fever cases without the following associated symptoms may be considered as malaria. Blood smear may be collected and treatment may be commenced.

- Cough- Acute respiratory infections
- Cold with running nose
- Skin rash suggestive of eruptive illness
- Burning micturition
- Skin infections e.g., boils, abscess, infected wounds
- Painful swelling of joints
- Ear discharge

SERIOUSLY SICK MALARIA CASES NEEDING HOSPITALISATION

- Cerebral malaria - Cases of fever with unarousable coma not attributable to any other cause
- Hyperpyrexia, convulsion, severe anaemia,
- Pregnancy with fever
- Pulmonary oedema
- Haemoglobinuria

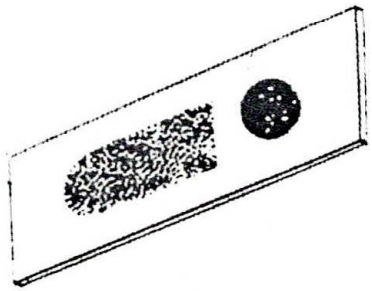
PREPARATION OF THICK & THIN BLOOD SMEARS FOR MALARIA MICROSCOPY

Blood smears should be made from all the patients reporting with fever or with history of fever, if suspected for malaria. Slide may be taken even though fever is not present at the time of reporting of patient.

METHOD

1. ● Third finger of the left hand of the patient should be held with left hand between thumb and finger by blood slide collector at the first phalangeal joint
   - ● Wipe finger tip with swab dipped in spirit or Savlon solution
   - ● Allow the finger tip to dry
2. ● Hold the pricking needle in the right hand and prick the finger
   - ● Allow blood drop to ooze out
3. ● Take a clean slide
   - ● Take 3 drops of the blood (sufficient blood) 1 cm from the edge of the glass slide
   - ● Take another drop of blood one cm from the first drop of blood
4. ● Take another slide with smooth edge and use it as spreader
   - ● Make thick and thin smears
   - ● Allow it to dry
5. ● Put the slide identification No./Name on thin smear with lead pencil

fig.



CONFIRMED DIAGNOSIS : MALARIA PARASITE DETECTED IN THE BLOOD SMEAR

TREATMENT

PRESUMPTIVE TREATMENT **before the result of the slide is known.**

The presumptive treatment is given to all fever cases or cases with history of fever during the preceeding 15 days immediately after the blood smear is collected. *It is to be given to all person whatever be the age or sex. Even pregnant women in any month of pregnancy or during postpartum period should receive presumptive treatment.* The presumptive treatment is also to be administered to fever cases where the blood smears are not collected.

a) Presumptive treatment comprises of a single dose of Chloroquine phosphate @ 10 mg/kg. body weight

ADULT DOSE
A Single Dose of Chloroquine Phosphate-600mg (4 Tablets)
– THIS IS TO BE ADMINISTERED BY ALL AGENCIES

The age-wise dosage of Chloroquine for presumptive treatment @ 10 mg/kg body weight

Age in years	Tablet Chloroquine Phosphate	
	mg base	No. of Tablets
<1	75	1/2
1-4	150	1
5-8	300	2
9-14	450	3
15 & Above	600	4

As per revised drug policy of NMEP presumptive treatment of all suspected/clinical malaria cases in High risk areas is as follows :

Chloroquine base	Day 1	10mg/kg (600mg adult)
Primaquine	Day 1	0.75mg/kg (45mg adult)
Chloroquine base	Day 2	10mg/kg (600mg adult)
Chloroquine base	Day 3	5mg/kg (300mg adult)

RADICAL TREATMENT

All microscopically positive cases of malaria are to be given radical treatment with Primaquine for its gametocytocidal and antirelapse properties. This ensures a complete cure from malaria in the positive case and makes him non-infective to mosquitoes.

a) Radical Treatment for microscopically confirmed P.vivax malaria infections :

The adult dose / drug schedule is as follows :

A single dose of 600 mg Chloroquine (10 mg/kg body weight) and 15 mg Primaquine (0.25 mg/kg body weight) on the first day followed by 15 mg Primaquine (0.25 mg/kg body weight) daily for the next four days.

THE AGE-WISE DOSAGE OF RADICAL TREATMENT

Age in years	Tablet Chloroquine 150 mg base		Tablet Primaquine 2.5 mg base	
	Single dose		Daily dose for 5 days	
	mg base	No. of Tablets	mg base	No.of Tablets
<1	75	1/2	nil	nil
1-4	150	1	2.5	1
5-8	300	2	5.0	2
9-14	450	3	10.0	4
15>	600	4	15.0	6

CAUTION : INFANTS AND PREGNANT WOMEN ARE NOT TO BE GIVEN PRIMAQUINE

b) Radical Treatment for microscopically confirmed P.falciparum infections:

The adult dose/drug schedule is as follows :

A single dose of 600 mg Chloroquine (10 mg/kg body weight) and 45 mg Primaquine (0.75 mg/kg body weight) is to given stat.

THE AGE-WISE DOSAGE OF RADICAL TREATMENT

Age in years	Tablet Chloroquine		Primaquine	
	Single dose	Single dose		
	mg base	No. of Tablets	mg base	No.of Tablets (15 mg each)
<1	75	1/2	nil	nil
1-4	150	1	7.5	1/2
5-8	300	2	15.0	1
9-14	450	3	30.0	2
15>	600	4	45.0	3

c) The radical treatment of cases in Chloroquine resistant strain areas for *P. falciparum* as suggested under the revised Drug Policy is as follows

ADULT DOSE

Sulphalene/Sulphadoxine + Pyrimethamine (3 tablets)	1500 mg Single dose	
	75 mg Thereafter	
Primaquine	45 mg	Single dose

These drugs should be given cautiously and not on the same day as both are known to precipitate haemolytic crisis in sensitive cases with G-6-PD deficiency. The drug administrator should ensure that the patient swallows Sulpha combination tablets in his presence and gives clear instructions to the patient to consume Primaquine tables on the following day without fail.

THE AGEWISE DOSAGE IS AS FOLLOWS

Age in years	Sulphalene / Sulphadoxine + Pyrimethamine		Primaquine	
	mg base	No. of Tablets (500mg+25mg each)	mg base	No.of Tablets (15 mg each)
1	2	3	4	5
<1 +	125 mg 6.25 mg	1/4	nil	nil
1-4 +	500 mg 25 mg	1	7.5 mg	1/2
5-8 +	750 mg 37.5 mg	1/½	15.0 mg	1
9-14 +	1000 mg 50 mg	2	30.0 mg	2
15 & above	1500 mg + 75 mg	3	45.0 mg	3

NOTE : Sulphalene / Sulphadoxine & Pyrimethamine continuation does not take care of *P. vivax cases.*

In cases resistant to above drugs, and in severe & complicated malaria with *P. falciparum* infection (microscopically confirmed) I.V. Quinine is to be used in doses given below :-

Quinine 10 mg/per kg b.w. thrice daily as intravenous infusion in 5% dextrose /glucose solution over 4 hours.

When the patient regains consciousness the same dose schedule is given orally to complete 7 days treatment.

Monitor Blood Sugar Quinine I.V. may precipitate Hypoglycemic crisis.

FEATURES FOR HOSPITALIZATION / REFERRAL OF MALARIA CASES

- Persistence of fever after 48 hours of initial treatment
- Continuous vomiting & inability to retain oral drugs
- Headache which is continuously increasing
- Severe dehydration
- General condition is too weak
- Changes in sensorium e.g. confusion, drowsiness, blurring of vision, photophobia, disorientation
- Convulsion or muscle twitching
- Severe anaemia
- Anaemia-pregnant women
- Jaundice
- Hyperthermia
- Bleeding, clotting disorders
- Pulmonary oedema
- Haemoglobinuria

NOTE : Before referring patients, please take blood smear, give a dose of Chloroquine to the conscious patient, I.V. Quinine (10 mg/kg) in suspected cerebral/complicated malaria cases and send case sheet, details of treatment history and blood slide with patient.

SOME DONT'S IN MALARIA CASE MANAGEMENT

- Do not give anti malarials on empty stomach
- Do not use corticosteriods
- Do not give I.V. mannitol
- Do not use heparin as anticoagulant
- Do not administer adrenaline
- Do not over-hydrate

PREVENTION OF MALARIA

- Screening of windows / doors of house
- Proper clothing
- Use mosquito repellent
- Use mosquito net
- Do not allow water to stagnate in the house or surrounding the house for more than 7 days
- Dry your cooler every Sunday (complete change of water)

Date : 5-3-97

Malaria still continues to be a major scourage in India and needs to be dealt with firmly by all concerned. As the family physicians play a prime role in effective delivery of primary health care to the population at large, this book entitled "Malaria A glance at the diagnosis and treatment for family physicians" shall serve as a ready reckoner for all involved in fighting the malaria upsurge. I.M.A. College of General Practitioners commends the remarkable work done by the Directorate of National Malaria Eradication Programme in publishing this handbook.

Dr. Vinay Aggarwal
Hony. Secretary
I.M.A.C.G.P. (HQS)

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TOWARDS AN APPROPRIATE MALARIA CONTROL STRATEGY

Voluntary
Health Association
of India

Society for Community
Health Awareness,
Research & Action

TOWARDS AN APPROPRIATE MALARIA CONTROL STRATEGY

Issues of Concerns and Alternatives for action

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13. MALARIA AND PRIMARY HEALTH CARE

It is increasingly recognised that whereas in the past years, Malaria Control was organised as a military operation with clear lines of control, guidelines for roles and responsibilities at every level and the strategy was top down, vertical and unipurpose; and that this approach also resulted in a spectacular reduction in the problem; this approach is not easily sustainable especially when the level of the problem becomes reduced and the problem becomes one of many community experienced problems to be tackled by the public health system in the country. The horizontal integration of Malaria Control with the Primary Health Care centres and the primary health care approach is therefore not just a necessity but becomes crucial to the sustainability of the programme and to its continued efficacy in the long run.

13.1 Malaria control has been integrated with PHC before India's commitment to the Alma Ata declaration but even more so after it. The multipurpose health worker, the lab technician and the health supervisors under the leadership of the MO became the crucial operational team of the programme within the PHC organisation and Malaria Control has been for quite some time one of the many functions of the PHC. The Primary Health Care approach however is not just 'public health'; and 'preventive and curative medicine' being provided by government and /or non-government centres in the community, but is more. It is the active mobilization, involvement and participation of the community in the planning, implementation and monitoring of the health programme. That is the crucial challenge and malaria control becomes part of a Primary Health Care strategy only when the principles of (i) Community participation (ii) Appropriate technology (iii) Intersectoral coordination (iv) social equity - become central to the strategy of the control programme.

13.2 In more recent years the Malaria control strategy in the country has become gradually more Primary Health Care oriented and efforts are being made to ensure that the control options and alternatives are in the context of this approach. However, to ensure that this linkage does not become rhetorical but gets operationalised into a strategy, where the involvement of the community in building up the first line of Health care in Malaria control in the periphery becomes a reality, we make the following suggestions:

1. The 'Community' in the urban slum, the rural or tribal area must first be, accepted at all levels of the control strategy as 'active participants' of the programme and not 'passive beneficiaries'.

2. The community and/or its representatives both formal and informal leaders, should be involved in the planning and organisation of the activities at all stages of the programme. A village health committee will operationalise this further.

3. The focus of the activities/strategies should not just be on providing the community, a package of services but actively enabling/empowering them to participate in decision making that helps them to make health their own responsibility.

4. The large number of human resources that are available in any community must be identified and mobilised to participate in the programme - this means not only just people - but traditional birth attendants and folk health practitioners; leaders of the panchayat; mahila mandals; youth groups; farmers clubs, school teachers, opinion leaders, general practitioners and practitioners of other systems, of medicine and so on.

5. When required or whenever feasible, volunteers from the community should be trained as village level health guides or link workers to ensure that grass-roots level activity is made possible.

6. The Primary Health Care approach is a comprehensive approach and therefore Malaria control programes should not become unipurpose or selective in their orientation and whether it is the village committee, the health guide, or the strategy, there should be scope and openness to use the same structures and resources for other disease and health problems in the country.

7. A major thrust of such a primary health care oriented programme will be the approach of demystifying the problem at the community level, to build confidence and perspective to tackle it at that level itself so that the health team works in close partnership with the people and the programme becomes identified by the people as their programme.

8. ***The Primary Health Care approach also calls for a certain humility in the health team about not always wanting to `teach' or tell the people something but also a willingness to learn from local experience, wisdom and health culture. The people, when provided the right forum and context will often share ideas, options, alternatives that the health teams should consider and new approaches or alternatives can emerge if this learning from the people and working `with them' rather than `for them' becomes a team commitment***.

Finally we believe that the Primary Health Care approach gets translated into alternatives for action in strategies such as involvement of voluntary agencies and GPs;, training of village guides and link workers; health education and awareness building activity; involvement of village leadership and panchayatraj institution; involvement of alternative systems of health and their practitioners, and so on. All these have been further explored in subsequent chapters.

14. COMMUNITY CAPACITY BUILDING

Empowerment of the community is essential if malaria is to be effectively controlled.

To facilitate empowerment the community should be encouraged to participate in making decisions relating to malaria at the community level. They should be encouraged to decide on the needs for diagnostic and treatment facilities, referral pattern for cerebral malaria and vector control.

They could be asked to suggest innovative ideas in controlling malaria based on their local experiences.

To achieve both the above they must have access to accurate information. These relate to the number and type of malaria cases, deaths due to malaria, the drug availability, type of vector and the pattern of insecticide spraying needed and schedule of spraying.

Such an empowered community must also help in enhancing the accountability for the resources used and activities carried out.

To facilitate community capacity building the following activities are necessary:

14.1 Providing complete knowledge on malaria, its cause, spread, treatment and prevention. This forms the basis of community participation and action.

14.2 Stressing the importance of early diagnosis and treatment. The community needs to be aware of the early signs and symptoms of malaria especially that of the early warning signs and onset of cerebral malaria.

14.3 Providing easily accessible treatment centres including knowledge of proven locally available herbal treatments.

14.4 The community should be made aware of the various development projects, their impact on the environment and malaria and ways the impact on malaria can be reduced.

14.5 The community should be encouraged to identify and select a volunteer who can be trained on behalf of the community in appropriate areas of malaria as identified as the role of such volunteers. This person could be on a purely honorary or voluntary capacity without any payments or paid a regular honorarium by the community/panchayat based on its ability or may be paid on a fee for service basis as accepted by the community. In general the 'no pay' model is the best, the work being done with a service motive. The community may recognise such a person in any non monetary way as acceptable.

14.6 <u>Link workers</u>

The possibility of developing a totally different category of a person may also be considered in some settings. This person may be from the community being served or from outside. This worker may have a larger area and may visit a village only periodically on a regular basis. This person may be trained in collecting blood and in exceptional circumstances where microscope is available may even read slides and provide treatment either based on presumptive diagnosis or confirmed diagnosis according to pre determined guidelines. (See Appendix F for further details).

14.7 <u>Community Audit</u>

This concept is gaining acceptance in the Government. Ultimately the community should be able to assess the state and extent of the malaria problem in its area, document the work carried out by the Government or NGO and the improvements or changes resulting from such an intervention. To play this role, the community needs appropriate training.

Case Study : Action 2

Tackling Malaria in Rural Gujarat (Jhagadia, 1995)

[SEWA - Rural is a voluntary agency that has provided health and development services extending from the nucleus of a small rural hospital in Jhagadia. This case study highlights the key features of the experience with malaria control.]

- As an NGO we had taken over a PHC and done mainly surveillance and presumptive/radical treatment of fever just as any other PHC is supposed to do.
- After four years we realised we were getting nowhere and malaria prevalence was changing inspite of our efforts; so we decided to look at feasibility and efficacy of introducing simple vector control measures.
- We took a study and control population and monitored fever cases (smears) round the year and vector density (standard procedures) fortnightly.
- Interventions included simple engineering measures, fish, kerosene and very rarely insecticide (for one-time use to curb exceptionally heavy breeding sites).
- Interventions and Monitoring were done by Male Multipurpose workers and supervisor after due training and alongside routine 'PHC work'. The female health workers took on some extra load (of other work) from the male workers.
- We also took the community's help, especially school children, informally.
- Ongoing informal health education was given to people about mosquitoes and malaria.

Result:

- Vector density never rose above critical in study area but almost always remained far above critical in control area.
- General confidence of health workers in other vector control measures rose.
- People became more aware.
- No adverse effects on excellent performance in other health fields (MCH-FP activities).

Next Step

Encouraged by vector control feasibility/efficacy, we are now introducing on condition of community/panchayat participation, a mosquito control campaign in the area!

SEWA -Rural, Gujarat.

15. HEALTH EDUCATION IN MALARIA CONTROL

Creating awareness and building up a knowledge base amongst communities are the commonly accepted forerunners to the involvement of communities and building up their capabilities to act collectively and individually towards a common goal. Although the need for the same clearly comes out of all the NMEP documents and manuals, the commitment to this activity is not adequately visible in terms of the time, manpower, efforts or budgets earmarked for the same.

Since more than eighty percent of the malaria budget accounts for the salaries of personnel involved, and most of the rest gets spent on drugs and insecticides, no more than lip service is being paid to the role of malaria specific health education.

15.1 <u>It is suggested that</u>:

- *There must a quantum jump on the manpower, effort, time, resources and budgets allocation for this purpose. The methods of IEC to be used for target groups for various issues of malaria awareness can be seen in Appendix G .*
- *The most vulnerable and high risk groups for the present P.falciparum epidemic are usually illiterate and have no access to radio or television. In view of this, socially relevant and low cost alternatives addressing these particular target groups should be used. Folk artists, itinerant performers and street theatre artists can be used to pass correct and specific messages to entertainment - starved rural communities. These artists can be employed under various employment guarantee schemes or tribal development plans.*
- *Campaign mode of door to door and village to village malaria education in the pre-malaria season - (instead of observing such a week for the entire country in May, North East could have it in February, and some in May, depending on the onset of rains in the area) - by the health providers working closely in that particular community, stressing the symptoms of malaria, of its complications and that the treatment for the same exists with them should be done.*
- *Posters and videos do have their role but cannot be allowed to overshadow the forms of communication mentioned above because of the irrelevance to the most vulnerable and deserving section of the community.*
- *Teachers and school children need to be specifically targeted for malaria specific health education as the long term effects on their action potential are the most beneficial and effective.*
- *Paucity of funds cannot be cited as reason for a lack of emphasis on the above and innovative methods .*

- *NMEP and MRC have in recent years produced many useful booklets/ pamphlets, videos and other useful health education materials. These are however used only within the NMEP system. There is urgent need to make them available freely on a much more open basis to all groups outside the government system who wish to be involved in awareness building.*

- *Communication centres within the Voluntary agencies may be encouraged to use these materials, adapt them to local/regional needs, translate them into the local vernacular and work on alternative approaches to communicate the key messages and facts in other interactive, low cost ways. Their own expertise in alternate forms of communication could be tapped by NMEP/MRC as well.*

Case Study - Action 3

Health Education for Malaria

(An experience in Rural Gujarat)

[The Trust for Reaching the Unreached (TRU) is a voluntary agency involved with health and development services for marginalised rural communities in the Panchamahal areas and the bastis of Gotri area in Vadodara City.]

When TRU started its work in the Shivrajpur area of Panchmahals, 70% of our OPDs in July to October were cases of Malaria. Patients would pour in from interior villages walking, on bicycles, or being carried on shoulders or in a doly. For the first two years, we responded to this by a clinic based approach.

In 1992 we decided to train our health workers for intensive health education work in malaria. The training covered all aspects of clinical diagnosis, treatment and prevention. By 1993, their clinical skill to treat and diagnose Malaria was adequate.

Since July 1993, our programme consisted of intensive door to door education on 'how to recognise the early symptoms' and how to treat it effectively. The emphasis was on taking 10 tabs of chloroquin, continued intake of food and not going to private practitioners for injection or for IV fluids. A few leaflets were given out as aids to health workers for person to person health education. Public programmes including role plays on malaria and a folk dance on malaria were added during the period.

School children between 8-15 years were taught elaborately about malaria including rational therapeutics. The children were our real messengers. They had a weekly class in health and produced posters during the health camps. The school programme went on in 10 schools in the area.

Results

1. While it is too early to claim a reduction in the OPD cases, people in general are more aware, report fever earlier, and do not accept the private practitioners' arguments for injections.

2. During the Malaria season, all the surrounding areas showed increased incidence of malaria but the villages around Shivrajpur were happy with full chloroquin course.

- Trust for Reaching the Unreached, Baroda, Gujarat.

16. ROLE OF THE VOLUNTARY AGENCIES IN MALARIA CONTROL

The role of NGOs especially the voluntary agencies (not for profit NGO's) is being increasingly recognised in planning and policy circles as an effective complementary / supplementary strategy.

In the past, they have played this role without much governmental support. In more recent years a greater degree of collaborative effort is emerging as a policy alternative.

16.1 The Voluntary agencies (Volags) have their Strengths

a) They are closer to the people and usually more aware of grass root realities

b) They often work in more interior and inaccessible areas or in accessible areas with more marginalised groups and the underprivileged.

c) They tend to be idealistic and committed to certain values and principles.

d) They are more flexible in their organisational structure and their professional approaches.

e) They often have a stronger development orientation and awareness building commitment and skill.

16.2 The Voluntary agencies (Volags) have their Weaknesses as well

a) They are very dispersed and individualistic and not woven into any integrated network.

b) They are often aloof from governmental programmes having their own programmes and agenda.

c) They are very diverse in their size, type, ideology, focus, distribution, linkages and professional competence.

d) They are inadequately informed about governmental programmes and initiatives and often lack adequate professional expertise being stronger in spirit rather than in skills.

e) They often follow fund driven/donor driven agendas.

f) They are also not often present in areas where they are needed most.

Notwithstanding these shortcomings, it is a very important development that the opportunities of government - non governmental collaboration are being increasingly promoted in recent years though involvement in malaria care is still not significant.

16.3 Concerns

a) As a group, we were concerned that inspite of well organised network of voluntary agencies and an increasing commitment of this constantly enlarging sector, to alternative service provisions, alternative training strategies and alternative research approaches and health communications and awareness building strategies, the actual collaborative possibilities between the two sector has been so inadequately

mobilised.

b) Inspite of competent coordinating agencies at National and now at state and regional levels this involvement and collaboration has been a policy thrust but not a policy reality.

c) The government or the programme authorities still try to look at the Voluntary agencies as primarily alternative service providers and often disregard their skills in research, training, communication and mobilization.

d) The large, rich network of Voluntary sector health communication efforts including journals, bulletin, newsletters have not been adequately harnessed to spread the key messages and strategies of Malaria Control and thereby enhance the involvement of this sector.

16.4 <u>The Voluntary agencies can play the following roles in Malaria Control:</u>

a) <u>Diagnosis</u>

Volags with health programme and having a laboratory facility can contribute to lab diagnosis. When reliable centres are identified the reports of such centres may be used for treatment and surveillance.

Volags who do not have a laboratory technician may have one or two trained as smear technician on collecting blood samples correctly and where personnel with capability and microscope is available some may be trained as microscopists to identify malaria parasites.

b) <u>Treatment of Cases</u>

Volags with or without a health programme can facilitate treatment both in presumptive and confirmed cases and in radical treatment. However, clear guidelines must be given to Volags and appropriate training must be provided to atleast two or three personnel from each Volag.

c) <u>IEC</u>

It is probably better to change this terminology from IEC to Education for Health. IEC appears more to be passive transfer of information. Education for Health requires certain additional steps to bring about individual and community action - going beyond information transfer. If clearly acceptable and accurate messages are made available to Volags many of them can motivate the community to accept or adopt changes in lifestyles or behaviour that is more health oriented.

d) <u>Vector Control</u>

While volag personnel and volunteers cannot carry out vector control measures according to present policies volag can participate in the following measures.

- Volags can take up anti-larval measures including keeping surroundings clean (without long term accumulation of water) and use of larvicides.
- Volags can promote bio environmental measures such as use of larvicidal fishes.
- Educating farmers on methods that present growth of mosquito larvae.

- Motivate people to accept anti-vector spraying when done by trained personnel and to allow proper spraying of indoors with adequate precautions.
- Work in coordination with the NMEP spraying teams in facilitating effective spraying as it differs from place to place and habits of the vector.

[It may be appropriate to simplify technology and provide entomological information so that in areas where there are limited Government personnel, Volags can do the spraying after adequate training]

16.5 Suggestions

To operationalise a healthy collaboration between NMEP and Volags the following steps should be initiated as soon as possible.

- *The Central and State governments should involve the Volags in the planning, implementation and evaluation of the Malaria Control Programme. They should not be treated as mere adhoc agencies to be used during epidemics, when government set up has failed to achieve the desired results.*
- *Malaria Advisory Boards/Committees should be constituted at the National/State and District levels with adequate representation of Volags. The entire Malaria Policy and Strategies for control need to be looked into and implementation reviewed at regular periodical intervals.*
- *Health Education should be an important component for effective delivery of Malaria Control Programme. The conventional manner of conducting health education would not be suitable particularly in the tribal areas. Health education should be based on socio-economic and behavioural attitudes of the local community.*
- *Volags have close liaison with the local people. Essentially, malaria is a disease of human behaviour. The human behaviour has to be changed against malaria transmission. This ranges from source reduction, timely seeking of medical advice and undertaking self protection measures. Health education with appropriate messages would be of considerable value and Volags effort would be particularly suitable in this area.*
- *The groups working in the field of health and development should be given training in (i) Surveillance of fever cases and reporting of unusual occurrence of fever cases to the local health authority for prevention and management of outbreaks, (ii) diagnostic skills - clinical and microscopic diagnosis of malaria (iii) rational treatment-presumptive as well as radical (iv) health education and public awareness (v) integrated mosquito vector control.*

- *Volags should be actively involved in public awareness campaigns before the start of malaria transmission periods.*

- *The pattern of involvement of Volags in the NMEP should be on the pattern of National AIDS Control Programme where certain percentage of the budget is earmarked for implementation of the programme through Volags and private sector. The technical capabilities of these new partner groups should be developed through suitable trainings so that they can play an effective role.*

- *All these efforts could be coordinated at National and State and even regional levels by utilising and promoting the involvement of the coordinating/networking agencies of the Voluntary agencies like VHAI (Voluntary Health Association of India), CMAI (Christian Medical Association of India), CHAI (The Catholic Health Association of India), MFC (Medico Friend Circle) and their state and regional units rather than dealing with specific individual Volags in an adhoc fashion. These networking agencies can enhance collective action which is crucial for the programme.*

- *In the context of 'Malaria Programme' since there is such a diversity of complementary activities that could become part of Volag initiatives it is necessary to ensure that the contact/ coordination/involvement is not confined only to the 'Health oriented' projects/organisations of this sector but also the larger components of developmental organisations, environmental groups, womens organisations, trade unions and communication/media groups. Each component of this sector could identify its special supportive/ complementary role. (See Appendix I for further details).*

17. CAPACITY BUILDING OF VOLUNTARY AGENCIES

Flexibility availability and facilitating community participation have been some of the acknowledged strengths of Volags, that have made them useful partners in intervention and development programmes. If the capacity of Volags are developed in the area of malaria control then they can be effective partners in keeping this disease under control. The following are some of the areas of capacity building:

1. **Developing Volag Resource Centres**

   Since many Volags operate in isolated areas selected Volags with commitment to the malaria control programme may be identified and developed as resource centres. Roughly it may be one Volags Resource Centre for each district. These centres will have trained human resources, (malariologist, smear technician, microscopists, health educator, diagnostic equipment, treatment facilities and training infrastructure to train other personnel primarily of Volags and where necessary and feasible of Government personnel also. Existing laboratories in Volag Centres may also be strengthened. Diagnostic materials and drugs may be provided by the Government to such Volag Resource Centres.

2. **Capacity Building for Enhancing Community Awareness, Action and Involvement**

   Volags may be provided with correct messages on malaria to be passed on to the community. In addition they may be provided educational and IEC materials for community education. They are usually adept at enhancing community participation and action. Where these skills/orientation are required the large network of community health trainers who are experts in this may be tapped to facilitate these skills among field based Volags.

   a) Personal Protection Measures

      Volags may be provided with complete information relating to personal protection so that they can incorporate these as part of the intervention strategies in the community.

   b) Vector Control

      While spraying is primarily a task of the NMEP personnel in selected regions, for some areas it may be useful to build the capacity of Volags to carry out spraying insecticides according to guidelines and criteria procedures laid down by the Government. In addition they may be trained fully on biological methods of vector control including anti larval measures.

      However, in most situations Volags should be trained that they have access to the Government spray team according to defined needs.

   c) Volag Cell at NMEP

      Since according to the present malaria control policy there are definite roles defined for Government personnel and Volag personnel it would be useful if there is a Volag Cell at NMEP both in Delhi and at the State Headquarters. Having such a cell would facilitate better interaction with Volags and give them a forum or channel within the Government through which they can work better in malaria control. This NGO cell should work in close coordinator with National networking

agencies of the voluntary health sector like VHAI, CHAI, CMAI and their regional and or State level units. (See 16.5)

d) Funding for Volag Capacity Building

At the grassroot and the community based intervention level training costs may be incorporated into the regular NMEP budget and even state health budgets for training. Select Volag personnel from Resource Centres may have funds provided through bilateral and international funding available to the Government. This could be for both select short term training programmes as well as for participating in workshops, meetings and other opportunities for south-south and south-north dialogue.

Case Study : Action 4

Preventing Malaria in a Rajasthan Taluka - Lunkaransar, 1995

[The Uttari Rajasthan Milk Union Limited (URMUL) Trust is a farmers cooperative that organises an integrated rural development programme with health care being an important component of the diverse development package. They were actively involved during the malaria epidemics in their area of operation in recent years and tried to evolve strategies to keep their villages free of malaria deaths.]

Aim to keep our villages free of deaths from Malaria .

Our limitations

1. One lab technician for our 30000 population scattered over 2500 kms. and also doubling as Health Coordinator.
2. 3 PHCs and 1 CHC as referral support and numerous RMPs and quacks - none of them under our control.
3. No data for 1994 but government data put API below 2 everywhere so no spraying could be done.
4. Literacy levels of women <5% and males below 20%.

Our Strategy

a) Drug Distribution Centres with teachers who were trained for the purpose.

b) Chloroquin taken from government and replacement made every month.

c) Modified Fever Treatment Depots with our own workers.

d) Presenting our findings on fortnightly basis to CHC, CM & HO, Dy. CM & HO- Malaria, District Collector and Divisional Commissioner to galvanise action on behalf of district authorities.

e) Posters procured from government and pasted all over.

f) Pamphlets in Hindi for all educated people and RMPs and quacks.

g) Street theatre and puppet shows by our communication team in each village.

h) Placing slides with RMPs etc., to help in monitor patients.

i) Introduced larvivorous fishes in own campus to help staff gain confidence in method and effect.

j) Holding and referral facilities for the serious at our headquarters centre.

Results: Succeeded in our pledge to prevent malaria deaths.

- URMUL TRUST, Rajasthan.

18. ROLE OF PRIVATE PRACTITIONERS IN MALARIA CONTROL

The National estimates of the percentage of health care provided by private practitioners in rural and urban areas vary greatly from different source but overall estimates conclude that nearly 2/3rds of the health care provided to the people are by this sector. Private practitioners include those trained in medical colleges in the allopathic tradition (MBBS), those registered as medical practitioners (the RMPs) from different backgrounds, and those trained formally and informally in other systems of medicine which include seven alternatives in the Indian context - Ayurveda, Siddha, Unani, Naturopathy, Homeopathy, Yoga, Tibetan Medicine. They are most often the providers of first contact care especially when home remedies and folk health practices have not been effective. The total guestimates range between 4-5 lakh practitioners who would fall into this category atleast (probably an under estimate!). In the context of Malaria - they are the first group to be consulted at the onset of the febrile episodes and their involvement in Malaria control becomes crucial. It is surprising however that NMEP has not had adequate clarity and policy focus on the involvement of this sector in an active way.

18.1 Issues of concerns

It is a matter of great concern that in the absence of a planned dissemination of relevant information and update on rational malaria diagnosis and treatment including rational regimes utilising the generics/specifics available in the Indian market, the role of the Private practitioner community in malaria control is rather dubious and marked by increasing commercialization and unethical prescribing trends.

Some aspects of this trend are:

1. a use of a wider diversity of irrational regimes and combinations often at high cost to the patient and totally at variance with the NMEP guidelines

2. a tendency to exploit the illness episodes by the use of injectable preparations and other adjuncts not in consonance with the principles of rational malaria care.

3. a tendency to see the 'outbreak' or 'epidemic' as an opportunity for gain rather than as an opportunity to be actively involved in a national health programme and national efforts to tackle a major public health programme.

4. These trends are further complicated by an increasing fall in clinical diagnostic standards and inadequate recourse to lab diagnostic facilities. The clinical laboratories also have been showing a lack of quality and standardization even when they are available and utilized.

5. Further some degree of medical misinformation by medical representatives pushing their company's remedy against the other to enhance profit margins even when low-cost generics are available is a growing problem.

6. The obvious result of such continued, irrational medical practice is reflected in the increasing problem of drug resistance, as well as the continuation of unnecessary and avoidable suffering.

18.2 SUGGESTIONS FOR ACTION

- *The GPs, RMP, other unregistered practitioners are to be considered part of the Malaria Control Programmes and therefore to be educated about the aims, objectives and functioning of the NMEP and to be oriented accordingly.*
- *They should be made to feel their responsibility towards country's malaria control and the people.*
- *CME programmes should be organised involving IMAs, medical Colleges and other professional organisations using uniform "Module" with minor regional variations wherever needed.*
- *Malaria treatment guidelines and other aspects of malaria may be communicated through publications in professional journals, bulletins newsletters, and/or distributed through small booklets, pamphlets and handouts.*

19. DISTRICT PLANNING / DECENTRALIZATION

- There is a growing realization that the regional disparities/differences are so wide and the development process including health service development so diverse that planning at regional level and at district level particularly is not only necessary but also relevant.
- The understanding of Malaria as a focal disease with its own peculiar socio-epidemiological characteristics adds a new urgency to more decentralised district level planning.
- The whole renewed development and emphasis of the Panchayatiraj concept and structure also emphasises the urgent need and opportunity for this.
- Finally the concept of involving the grassroots community in the planning process now considered to be more relevant, favours this shift as well.

To support this shift of emphasis, we suggest the following action:

- *The urgent development of capacities and capabilities to undertake district planning.*
- *The urgent training/orientation of Health Centre staff particularly MOs in the ability to make local plans based on local data and to involve the panchayat/community in the planning process.*
- *The urgent training/orientation of emerging panchayat leadership to participate meaningfully in the health planning process.*
- *Community level Malaria plans could be a short term goal to support the long term goal of district plans.*

Malaria

A Socio - Epidemiologial Perspective

Dr. Ravi Narayan, Community Health Cell

Alternative malaria control strategy

- REPORT
  - Towards an Appropriate Malaria Control Strategy
- WHAT
  - Reflections / Recommendations
- WHO
  - An Expert Group (6) and a Reference Group (44) from the Voluntary / NGO sector.
- WHEN
  - Apr. '96 - Jan.'97.

Dr. Ravi Narayan, Community Health Cell

Appropriate Malaria Control Strategy (contd.)

- WHY
  - To provide an :
  - ✓ Alternative,
  - ✓ Community oriented
  - ✓ Socially relevant perspective.
- HOW
  - Interactive & Participatory
  - ☛ Individual contributions
  - ☛ Group reflections
  - ☛ Identification of Key issues and ideas through meetings

Dr. Ravi Narayan, Community Health Cell

HEALTH FOR ALL

Indian Council Of Social Sciences Research &
Indian Council Of Medical Research. (1981)

- ***Reduce:***
- ✓ poverty,
- ✓ inequality and
- ✓ spread education
- ***Organise poor and underprivileged to :***
- ✓ fight for their basic rights
- ***Move away from :***
- ✓ Counter-productive and
- ✓ Consumerist

  Western Model of Health Care
- ***Replace with***
- ✓ Alternative based in the community.

Dr. Ravi Narayan, Community Health Cell

LESSONS FORM HISTORY

- Sustained Public Health Action
- Diversity of Approaches
- Political and 'health' leadership synergy
- Local solutions for local realities
- Economic advantage of programmes

Dr. Ravi Narayan, Community Health Cell

THE NEED FOR SOCIO-EPIDEMIOLOGY

- Studying the COMMUNITY at risk & SOCIETAL CONTEXT - not only the Agent / Vector / Environment.

From - TECHNO- MANAGERIAL problem analysis and assessment

- To - SOCIO-CULTURAL-POLITICAL BEHAVIOURAL issues.

REDISCOVERING THE 'COMMUNITY' IN MALARIA CONTROL

- Enhancing Community Participation, Capacity and Health Education
- ✓ by involving :
- ☛ Panchayat
- ☛ Local Community Organisations
- ☛ Voluntary Sector Projects
- ☛ Private practitioners
- ☛ ISM's and Folk Healing traditions
- ☛ Folk & local media
- ☛ School based programmes
- ☛ Creative , interactive - culture sensitive approaches

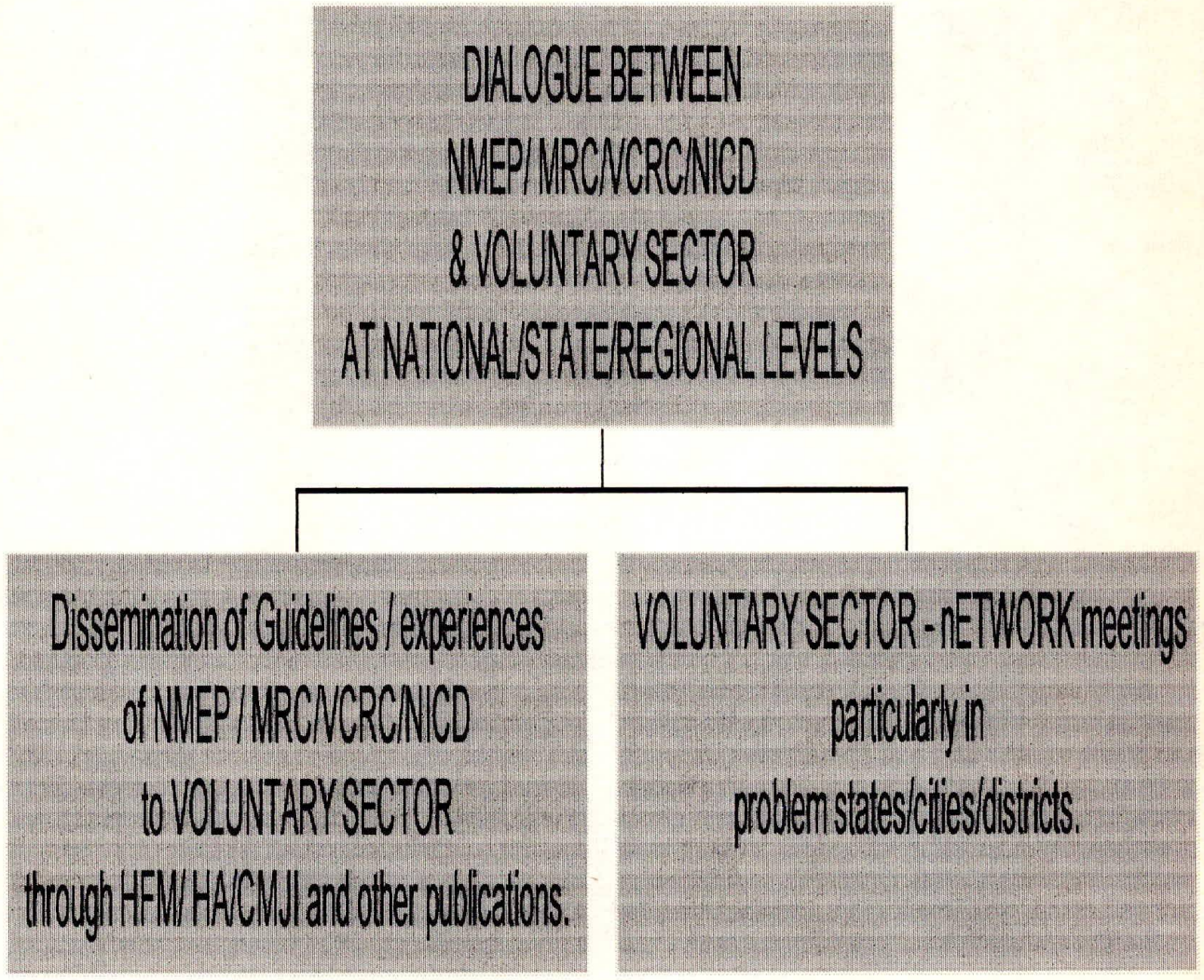
Dr. Ravi Narayan, Community Health Cell

EXPLORING NEW CHALLENGES IN RESEARCH AND ACTION

- Improvement of M.I.S to tackle
  - ⇨ Under reporting
  - ⇨ Underestimation
- Re-establishing Bio-environmental control
- Study / Assessment of ISM's for Malaria Care
- Enhancing Decentralised Planning & Action Capacity

Dr. Ravi Narayan, Community Health Cell

COMPLEMENTARY ROLE OF THE VOLUNTARY SECTOR - I



Dr. Ravi Narayan, Community Health Cell

COMPLEMENTARY ROLE FOR THE VOLUNTARY SECTOR-II

- INVOLVEMENT IN MALARIA CONTROL (*FOCUSSING ON VOLUNTARY SECTOR STRENGTHS*)
  - ➪ Creative Health Communication
  - ➪ Mobilise / involve human resources at community level
  - ➪ Comunity health orientation - at all levels
  - ➪ Orientation and involvement of Panchayat leadership
  - ➪ Dialogue with ISM and Folk healers
  - ➪ Invlovement / cme of GP's at all levels

Dr. Ravi Narayan, Community Health Cell

COMPLEMENTARY ROLE OF THE VOLUNTARY SECTOR-III

- FACILITATING AND WATCHDOG ROLE
  - ➪ Enhance Social-political-cultural-economic context analysis in Malaria policy.
  - ➪ Rational therapeutics / Rational drug policy in Malaria
  - ➪ Monitoring "Market Economy" distortions at various levels - evolving counter strategies.
  - ➪ lobbying for a more decentralised community health policy

REURGENCE OF MALARIA IN INDIA

- Issues of Concern and Alternatives for Action*

The resurgence of Malaria, especially in the last decade has become a matter of serious concern for health professionals, policy makers and planners. The epidemics in Andhra Pradesh, Manipur, Nagaland, Rajasthan and West Bengal in 1994 and in Assam, Maharashtra and West Bengal in 1995 and again in West Bengal and North East in 1996/97 has been characterised by high morbidity and mortality and increasing evidence of the spread of plasmodium falciparum infection around the country.

As chairperson of an Expert group on Malaria, convened by the Voluntary Health Association of India, New Delhi, I had the unique experience of working with 5 other experts and 44 reference group participants in participatory interactive process, that made an independent assessment of the Malaria situation in the country and identified issues of concern and alternatives for action. The review was conducted from April 1996 till January 1997 and after a dialogue on the draft report with National Malaria Eradication Programme, Malaria Research Centre and Vector Control Research Centre experts and representatives of VHAI/CHAI/CMAI/WHO/ and others was published in May 1997 (1).

The group went beyond the classical Public health approach, that is dominated by a biomedical perspective and studied causes for the resurgence that go beyond the usual drug resitance and parasite resistance paradigms. While these are major problems, a broader socio-epidemiological analysis highlighted a larger number of crucial issues which taken together represent a breakdown of the public health system in the country and an increasing resistance in the health care system to rational and sustained programmes of malaria control.

A few of the important issues of increasing concern are highlighted here.

i. The first concern is the near absence of a reliable surveillance system, plagued by shortage of laboratory technicians at the primary health centre level and male multipurpose health workers at the field level - who between them constitute the surveillance team at the grassroots. Not surprisingly, the NMEP / MRCs estimates through indirect evidence has shown that the actual numbers of malaria cases is closer to 30 million, rather than the 2 million cases presently reported through the existing MIS. Such a gross underestimate has crucial policy implications.

ii. The second concern is the continuing irrational management of suspected malaria cases by general practitioners and specialists in the country. A combination of ignorance, misinformation and textbook guidelines that have emanated in very different epidemiological situations ensures that suspected malaria cases gets a plethore of irrational injections, antibiotics and antipyretias to begin with and the NMEP's guidelines on Drug Policy on Antimalarials is totally disregarded . There is a tendency to exaggerate

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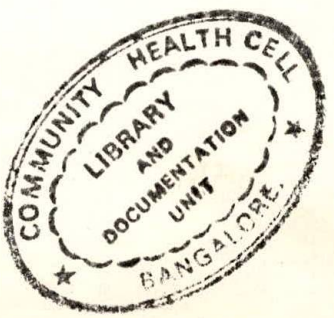

the prevelance of chloroquin resistance and mefloquin is promoted as the new wonder drug and used often as the first line of treatment. Studies have recently been presented at a National Seminar on communicable diseases organised in February 1997 at Bangalore, highlighting the role of chloroquin in inhibiting hoem dependence protein synthesis in the parasite, the implication of which is that increasing the dosage of chloroquin (a cheap, effective and adequately available remedy) would probably overcome the resistance problem in most cases rather than taking recourse to a costly alternative. The dangers of misuse and overuse of mefloquin need to be critically assessed. Apart from the severe toxic effects including neurotoxicity, it does not act on gametocytes and hypocotes; action on parasite is slower; has to be imported; cross resistance with quinine is known; is contraindicated in mothers who are breastfeeding their children. In the Indian situation, it is also not easy to comply with the condition that compulsory laboratory report by qualified parasitologists are required before it can be prescribed.

iii. The third concern is that while personal protection measures are important in the short term, the most sustainable long term approaches are integrated bio environmental methods. More recently, however, there is a concerted and well orchestictical efforts by international public health organisations and consultants to socially market insecticide treated mosquito nets (ITMNs) as the magic bullet and this will divert funds and attention to a top down vertical, distribution and marketing programmes which will not be sustainable. An IDRC/WHO publication has already cautioned that ITMNs may not be easy to implement and sustain on a large scale in routine health interventions and this advise needs to be heeded.

iv. The fourth concern was 'malariogenic' development strategies that result from inadequate environmental impact assessment. The most recent example of this has been the epidemics in Rajasthan. The review of causative factors have included the swepages and other effects of the Indira Gandhi canal that was built and not subjected to any form of health impact assessment. 'Agricultural development' and 'migrant labourers' are other components of development strategies that need to be closely reviewed.

v. The fifth concern was a hast of interrelated issues that are not specific only to malaria but are symbolic of a disintegrating public health system - a phenomena that is reaching crisis proportions.

These include

⇒ a loss of public health skill and competence at all levels of the health care system

⇒ theacute and increasing shortage of health human power especially at the peripheral health centres;

⇒ the inadequate involvement of voluntary agencies, general practitioners and practitioners of all the sytems of medicine in the country in control strategies;

⇒ the increasing corruption and political interference in health care decision making affecting all aspects of health care and all levels of national programmes;

⇒ the decrease in health budgets and health care expenditure and investments;

⇒ the confused dialectics of centre-state responsibility in health care;

⇒ the inadequate development and or use of forecasting and monitoring systems to strengthen responses to epidemic and increase epidemic preparedness;

⇒ the increasing subservience of nationally derived strategies and programmes to the priorities and imposed guidelines set by international funding agencies and international consultants with little knowledge of the region and agendas and perspectives that do not support local expertise.

The 'Public Health crises' symbolised by the above is probably the most significant contributer to the re-emergence of the disease.

The Expert Group's review included areas such as socio-epidemiology of malaria; rational malaria control; malaria and primary health care; and policy issues in malaria control. It also attempted to evolve a complementary strategy in malaria control that would involve general practitioners and practitioners of all systems of medicine and all the voluntary sector projects in a more comprehensive and interactive strategy. This would involve:

1. *Promote an active dialogue between the Voluntary agencies and NMEP to identify a special complementary role for the sector in the Malaria Control programme.*

2. *Promote an active dissemination of ideas and experiences and guidelines of NMEP / MRC to the voluntary agencies through publication and CME updates.*

3. *Organise informal meetings of Volag network all over the country but perhaps to begin with focussing on the North East, the States of Gujarat, Maharashtra, Rajasthan, Bihar, Madhya Pradesh, Uttar Pradesh and Orissa and the 15 cities / towns which have been designated as problem areas - to mobilise the voluntary agencies and involve them in malaria control activities.*

4. *While the voluntary agencies members could be involved in all aspects of the programme, initiatives should be focussed on those aspects on which the voluntary agencies has something concrete to offer:*

    i. Creative health comunication strategies
    ii. Mobilization / utilization of human resources and groups at community level
    iii. Dialogue with ISMs and Alternative Systems of Medicines
    iv. Rational therapeutics and Rational Drug Policy in Malaria
    v. Community Health oriented training of health staff at all levels
    vi. Orientation and reorientation of Panchayat leadership
    vii. Orientation and involvement of Teachers and children through school based programmes, child to child and other approaches.

5. Finally - while playing a complementary/supplementary role at the field level to enhance the action response of the voluntary agencies, VHAI through its MEG and other resource associates should play an active facilitating and watchdog role to

    i. Enhance socio-political-economic-cultural context analysis in Malaria Policy

ii. Monitor the Market economy distortions at various levels and evolve counter strategies

iii. Enhance the role of the voluntary agencies as issue raisers, awareness builders and lobby for a more community oriented empowering malaria strategy integrated with a decentralised, community oriented health policy.

If the Voluntary Agencies through its efforts can bring back the people/community back to the core of the Malaria strategy as full active participants and not as passive beneficiaries, we would have made a significant contribution toi the programme.

Bringing back the community into the Malaria Programme let that be our strategy - let that be our slogan.

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Report of informal meeting of the Malaria SRAG (Study Reflection Action Group) held at CHC on 27th October 1997

The meeting commenced with self-introduction, and Dr. Ravi Narayan (co-ordinator of CHC) welcomed the group and appreciated the increasing involvement of more and more members and organisations. A total of 13 participants from Govt. and NGOs participated (Appendix A).

Dr. Ravi Narayan started the discussions by explaining the many activities and initiatives that were conducted during 1997, especially during the Malaria month and their follow-up, and asked the individual members to present their informal reports.

1) **Dr.S.K. Ghosh from MRC**, briefly presented the report of MRC and certain additional information was given by Dr. Sathyanarayana. During the Malaria month in June 1997, messages about Malaria were propagated at all levels including District and Panchayat level. Messages included information about other mosquito borne diseases especially Dengue fever (outbreak in Delhi) and Japanese Encephalitis and trying of artificial collection of water.

   He also mentioned about organising Health Camps (inaugurated by Dr. Murugendrappa, Jt. Dir - Malaria and Filaria, Govt. of Karnataka) where stress was laid on Bio-environmental methods to control malaria. He re-emphasised that use of insecticides were very costly and invariably resistance developed within 10 years. He also reiterated that if Govt. of Karnataka had stuck to their initial plan of bio-environmental control throughout (rather than introduce DDT), malaria would not be at the present situation. He briefed in detail about the success of larvivorous fish and explained that they were small (11/2" - 2" size), viviparous, prolific breeders, breed 3-4 times in a year, hardy and thrive in dirty, polluted waters also. Their studies in Kolar and Hassan districts were very successful and have been reported in the press also. Their studies were presented at the National Conference on Malaria at Bangalore as well as International Malaria Conference (Ronald Ross Centenary) at Hyderabad.

   He also explained that when ponds which had dried up were again filled with water, simply transferring a few fish from another nearby pond was enough to reseed the pond. He also elaborated on the success of EPS beads. (Polystyrene beads or thermocol balls) in unused wells (more than 10,000 in Bangalore itself). These functioned as larvae asphyxiants and whenever the wells are required to be used, the beads just require to be removed.

   Dr. Ghosh also spoke about the limited success of IBN (Impregnated Bed Nets) in Hassan District trials and preferred larval control.

Several workshops on Malaria were conducted. 3 health camps in 3 villages were conducted in which more than 100 health workers attended and evinced keen interest in the camps. Two health camps were also organised in different schools including Air Force School and Kendriya Vidyalaya. A special camp was organised at KIMS (Kempegowda Institute of Medical Sciences) in which about 40 undergraduate medical students participated.

Health camps organised at Panchayats and in a city slum were well attended and the participants actively involved themselves in the camps.

Dr. Ghosh also spoke of the encouragement received in use of Neem plants (Repellant and larvicide) and stated that they had collected them form the Forestry Department and distributed almost 40,000 plants to people in rural areas. (Detailed report by MRC attached).

2) **Dr. Sukhant Singh from CMAI** briefly touched on the CMAI activities which function through their network of institutions and members. He stated that a special desk for Infectious Diseases has been set up with major emphasis on Malaria and TB. He briefly spoke of the proposed involvement of CMAI with NMEP in a World Bank aided Project for three years, starting in April 1996 in the States of Orissa, Bihar, Madhya Pradesh and North-East. Since private practitioners (Pps) are handling more than 90% of fever cases, the aim is to hold training workshops (3 days for NGO doctors and 1 day for Pps) on rational treatment of malaria, early diagnosis and treatment of complications. A pilot project is planned in Ranchi to train PPs/NGOs.

3) **Ms. Neerajakshi from VHAK** stated that they also functioned through a network of institutions and members. A special Newsletter on Malaria was issued during Malaria month. She also stated that a special section on Malaria has been included in all the Training programmes, organised by VHAK. VHAK is also planning training programmes on Malaria for NGOs/private practitioners at the request of VHAI, New Delhi. She handed over two pamphlets in Kannada on Malaria which had already been widely distributed.

4) **Dr. Ravi Kumar, Chief Medical Officer, Regional Office for Health and Family Welfare** then reviewed some of the activities during the Malaria month. He was happy that Zilla and Gram Panchayats took a lot of interest in the Malaria education campaigns. A booklet on Malaria for school children was brought out and proved very popular. The same was now being used by health workers as a flip chart. Another booklet by NMEP - "Malaria Control - An Attempt" translated into Kannada was also distributed (copies of the booklets will be sent to CHC for distribution). He spoke about the poor response from IMA, Bangalore regarding a CME on Rational Drug Policy for Private practitioners, but however said that another attempt would be made to contact IMA, especially for a CME on Malaria treatment. He expressed

happiness about the overall fall in incidence of Malaria in Karnataka but expressed concern about the recent outbreaks in Bellary city (where > 12,000 cases were reported recently).

5) **Mr. Murali from CHAI-KA** stated that he had recently joined the organisation and was now involved in the modalities of de-centralisation of activities from CHAI headquarters. He volunteered his organisation's help through Bellary diocese, to help in the recent outbreak of Malaria in Bellary.

6) **Dr. Krishnan, from Institute of Aerospace Medicine, Indian Air Force, Bangalore** remarked about the alarming epidemic of falciparum Malaria in Calcutta city and emphasised the importance of controlling Malaria in Bangalore city. He elaborated a little on the observance of dry day being followed in the Armed Forces. He also volunteered his services to the different NGOs (as he was free in the afternoons), especially in view of his experience in tackling Malaria in the North-East.

7) **Dr. Ravi Narayan of CHC** then summarised the various activities of CHC regarding Malaria. He displayed the Report of the MEG group titled "Towards an appropriate Malaria Control Strategy" and also the final report of 'Reflections of Malaria in India' which would be brought out shortly. He also spoke about the new joint venture by CMAI, VHAI and CHAI for training of NGOs and General Practitioners with Dr. Sukhant Singh, Dr. Sehgal and Dr. Mani as potential nodal trainers.

   He spoke about a number of journals bringing out special issues on Malaria (some with extracts from the MEG report) and also circulated an editorial in the National Medical Journal of India.

   He expressed his satisfaction that even in the Ross Centenary meetings at Hyderabad, the emphasis on bio-environmental control over chemical control was significant.

The meeting ended with the decision that the next meeting would be held at CMAI (HVS Court, III Floor, 21, Cunningham Road, Bangalore - 560 052) on 13th November, 1997 (11 am to 1 pm) to review the Training modules on Malaria (by NMEP) and evolve the content of the 3-day training for NGOs and 1-day training for GPs for the CMAI-NMEP training programme (see 2). It was also decided to assist VHAK in the planning of the Karnataka training plan requested by VHAI.

APPENDIX - A

List of participants who attended SRAG meeting on 27th October 1997

1. Mr. Murali, CHAI - KA, St.Martha's Hospital, Nrupathunga Road, Bangalore - 560 009.	7. Mr. David, CHAI - KA, St.Martha's Hospital, Nrupathunga Road, Bangalore - 560 009.
2. Dr. S.K. Ghosh, Malaria Research Centre, Field Station, Epidemic Disease Hospital Campus, Old Madras Road, Bangalore - 560 036.	8. Dr. T.S. Sathyanarayan, Malaria Research Centre, Field Station, Epidemic Disease Hospital Campus, Old Madras Road, Bangalore - 560 036.
3. Mr. N. Ananda, Voluntary Health Association of Karnataka, Rajini Nilaya, No.18, Mutt Road Cross, Ulsoor, Bangalore - 560 008.	9. Ms. T. Neerajakshi, Voluntary Health Association of Karnataka, Rajini Nilaya, No.18, Mutt Road Cross, Ulsoor, Bangalore - 560 008.
4. Wg.Cdr.Dr. S.K. Krishnan, Institute of Aerospace Medicine, Airport Road, Bangalore - 560 017.	10. Dr. Ravi Kumar, Chief Medical Officer, Regional Office for Health & Family Welfare, II Floor 'F' Wing, Kendriya Sadan, Koramangala, Bangalore - 560 034.
5. Dr. C.M. Francis, Community Health Cell Bangalore.	11. Dr. Ravi Narayan, Community Health Cell, Bangalore.
6. Dr. Rajan, Community Health Cell, Bangalore.	12. A participant from APD- Bangalore
	13. Dr. Sukant Singh, CMAI, Bangalore.

EVOLVING A COURSE CONTENTS FOR THE TRAINING OF G.Ps AND NGOs ON MALARIA.

AGENDA

Modorator Dr.C.M.Francis

1. Welcome and introduction of invitees and the subject matter

2. Course contents for 1 day programme for G.P.s on "Early diagnosis, treatment of Malaria and management of its complications."

3. Course contents for 2 day programme for G.Ps and NGOs on "Prevention and control of Malaria"..

4. Specific suggestions from the participants on the training of Gps & NGOs.

5. Any other business.

Malaria in India

Reflections, responses and the quest for alternatives

Editors

Madhukar Pai
Ravi Narayan
C M Francis

Society for Community Health Awareness, Research and Action, Bangalore

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2.	Resurgence of Malaria In India	Ravi Narayan
3.	History of malaria and malaria control in India	P.N. Sehgal
4.	Exposed and vulnerable: tribals and malaria in Bihar	P.A. Chacko SJ & Prabir Chatterjee
5.	Malaria, an emerging problem in Igatpuri	Dhruv Mankad & the Vachan Team
6.	Getting through the defences: resurgence of malaria among the armed forces troops	S.K. Krishnan
7.	What makes a place malaria prone? Jalpaiguri as a case study	
8.	Malaria and migrant labourers: lessons from a South Indian experience	Madhukar Pai, Anand Zachariah, Winsley Rose, Samuel Satyajit, Santosh Verghese & Abraham Joseph
7.	Rational treatment of malaria: a critique of the NMEP strategy	Anant Phadke
8.	Hand over responsibility to the States	N.S. Deodhar
9.	Why has the National Malaria Eradication Programme failed?	Prabir Chatterjee
10.	Malaria control in tribal areas: issues and problems	Ravi D'Souza
11.	Managing malaria epidemics: Notes from the field	R. Antony, E. Gajraj, M.S. Jacob, T. Mathew, Sr.

		Anita, S.P. Joseph, J.S.
12.	Towards a sensible use of a scarce resource	Sunil Kaul
13.	Partners in Action: the role of NGOs in malaria control	A.S. Nair, Rajaratnam Abel, P.N. Sehgal
14.	Can we work together for malaria control?	Study Reflection Action Group on Malaria, Community Health Cell.
15.	Our struggle to prevent malaria deaths	Sunil Kaul & the URMUL Team
16.	Personal Protection Measures: the good, the bad & the impractical	Sunil Kaul
17.	Health Education: a potent weapon against malaria	Rajaratnam Abel & Sunil Kaul
18.	Health Education messages for malaria control	Rajaratnam Abel
19.	Beyond the clinic base approach	Lokswasthya Mandal (Trust For Reaching The Unreached)
20.	Towards A People's Movement Against Malaria	Johnny Oommen
21.	Involving People in their own health care	N.H. Antia
22.	Integrated Vector Management For Malaria Control	Sanjoy Sengupta
23.	Vector Control against Malaria: the SEWA-Rural experience	SEWA-Rural Research Team
24.	Back to Basics !	Madhukar Pai
25.	Malaria & Alternative Health Systems	Rakhal Gaitonde
26.	Community Dynamics In Malaria Control: The Kolar Experience	Paresh et al.
27.	Afterword	Madhukar Pai, Ravi Narayan, C.M. Francis

THIRD NATIONAL SEMINAR ON MALARIA & OTHER TROPICAL DISEASES

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Towards an Appropriate Malaria Control Strategy: Issues of Concerns and Alternatives for Action

Ravi Narayan
Community Health Cell, Bangalore 560 034

Malaria Expert Group, Voluntary Health Association of India
(Dr.Ravi Narayan, Dr. P.N. Sehgal, Dr. Mira Shiva, Prof. Amitabha Nandy, Dr. Rajaratnam Abel and Dr. Sunil Kaul)

This paper is a summary of the key issues of concern in the present malaria situation in India and the alternatives and complementary strategies for malaria control that need to be initiated to supplement the work of the National Malaria Eradication Programme so that the resurgence of malaria in the country is adequately tackled. These issues and alternatives were identified through an interactive-reflective process which was undertaken by a six member group supported by a large reference group of persons concerned about and or involved in malaria control levels of health care and in different sectors, primarily the voluntary sector.

Among other things, the paper highlights the problem of underestimation of malaria; the need to strengthen the behavioural sciences dimension in planning and research; the challenges of rationalising malaria diagnosis and treatment, including the potential misuse of mefloquin; the alternatives in vector control strtegies; and the need to rediscover the community dynamics and dimensions in malaria control including community capacity building, health education, role of voluntary sector, general practitioners and panchayat leadership and the urgency of decentralised planning and the assessment of the role of the ISMs. Policy issues such as health human power development, research, monitoring and forecasting, corruption and political interference, Centre-State responsibility and International public health co-operation are also included.

The Malaria Study Reflection Action Group facilitated by CHC, met on 9th February, 1998 at CHC at 2.30 pm.

Members present

1. Dr. Ghosh, MRC
2. Mr. Satyanarayana, MRC
3. Ms. Neerajakshi, VHAK
4. Mr. Anand, VHAK
5. Dr. C.M. Francis, CHC
6. Dr. Ravi Narayan, CHC
7. Dr. V. Benjamin, CHC
8. Mr. Murali, CHAI-Ka
9. Wg. Cdr. S.K. Krishnan,I.A.M.
10. Dr. Pankaj Mehta, Manipal Hospital
11. Mr. As Mohammed, SJMC

Invitees

1. Dr.Raghunath Rao - ex ICMR-MRC, New Delhi.
2. Dr. Chandra Thomas, SMH
3. Dr. Rajan Patil, CHC
4. Dr. Denis Xavier, CHC

Minutes

1) The meeting started with a welcome, followed by a self-introduction by all participants and then a brief introduction to the Malaria SRAG and its evolution.

2) CMAI-NMEP-MOU:

Dr. Ravi Narayan, on behalf of Dr. Sukhant Singh - CMAI (who was unable to attend the meeting), gave an overview of the process that has led to the evolution of a Memorandum of Understanding between CMAI and NMEP for training doctors in the voluntary sector and GPs in Orissa, MP, Bihar and North East. He informed the group about the four pilot workshops that are being organised at Raipur and Jagdalpur (MP), Rayagada (Orissa) and Ranchi (Bihar), and circulated all the papers sent by Dr. Sukhant Singh, including the final plan of the "Update on Malaria Worskhop for Medical Practitioners in Private Voluntary Sector".

The members reviewed the programme and the following comments were noted:

(i) Since there was a pretest, there should be a post-test as well.

(ii) There are many good MRC-ICMR videos on various topics shown in the programme. These should be reviewed for their suitability to the course and utilised to improve the audio-visual dimension of the training.

(iii) While Dr.Gille's (WHO) publications on routine drug management and management of severe and complicated malaria is very comprehensive, there are differences between its recommendations and those of NMEP/MRC. This should be kept in mind and preferably guidelines evolved by local experts should be highlighted.

(iv) The cycle of topics in the course should be evolved carefully, ensuring that key sessions are at times of day when retention and application are the best (!).

Post-prandial sessions should be more interactive and practical.

(v) NMEP, MRC and VHAI materials and pamphlets should be used by trainers for the pilot workshop and then, new handouts/publications can be evolved if some of these are not found suitable.

(vi) Bio-environmental approaches should be included and impregnated bednets should not be over-emphasised. Adequate time for demon stration and some hands-on experience should be provided.

(vii) For personal protection - various local adaptations by the community and simple, appropriate technology should be stressed.

(viii) Case stimulations will need, well trained subjects, for them to be effective.

3) VHAK - Training for Karnataka (Sponsored by VHAI)

The group then discussed some ideas for the Malaria Training being contemplated by VHAK for NGOs, Microscopists and Private Medical practitioners in Karnataka. Ms. Neerajakshi informed the group that Mr. Ananda of VHAK was attending a training workshop organised by VHAI in Delhi later this week and would evolve an action plan during this workshop.

Some general guidelines were discussed to help evolution of a plan for Karnataka, which would provide opportunity of training to all groups and members of VHAK, CHAIKA, CMAI and to all the GP's and even RMPs in the State. These included:

(i) The data on Malaria situation and trends for the 20(26) districts of Karnataka could be collated from the State/Central Health offices so that districts could be rearranged according to magnitude of the problem.

(ii) A district-wise potential NGO participant list could be evolved - consolidating membership lists of VHAK, CHAIKA and CMAI, keeping in mind that there could be potential participants who are not necessarily members of any of these coordinating groups.

(iii) The training programme evolved in earlier metings should be reviewed - emphasising needs/options for Karnataka State, e.g. bednets would be less emphasised than bio-environmental methods: neem oil and its various uses thorugh apprppriate technology could be emphasised. A suitable handout collating these experiences is urgently required.

(iv) All avaialble health education/training materials known to the group should be reviewed for suitability and comprehensiveness and 'translations' of some newer handouts should be started. VHAK informed that they were awaiting the green signal from VHAI for translating VHAI pubilcation on Building NGO capability, into Kannada. Mr. Ananda and his colleague would be initiating this shortly.

(v) It was also suggested that some of the ICMR-MRC videos could be dubbed in Kannada - if they were suitable for the training programmes.

(vi) Training programmes should emphasise only those materials/methods/options that are easily accessible to the community or clientile of the project of the voluntary sector.

4) CHAI-Training:

Dr. Ghosh emphasised that at a recent NMEP, meeting the role of Sister/nurses in small rural dispensaries was highlighted and recognised and at the instance of CMAI and in collaboration with CHAI, NMEP was considering the organisation of fever treatment workshops for Sisters/nurses running small rural dispensaries.

Murali of CHAIKA emphasised that in Bellary diocese, an important concern was the problem of malaria and hence, a one day workshop about the Malaria situation and dialogue on options with CHAIKA members in that diocese was an urgent need. It was suggested that he follow this up with the diocese and a one-day consultation could be organised in the next few weeks. MRC (Dr. Ghosh), VHAK (Ms. Neerajakshi) and Dr. Chandra Thomas (St. Martha's Hospital) evinced interest in this meeting and offered to support it as resource persons.

It was felt that CHAIKA could follow up the Bellary initiative as a pilot for a future training programme for Sister/Nurses which could be organised by CHAI all over the country in collaboration with NMEP.

5) Other initiatives:

(i) Dr. Ghosh informed the group that the Karnataka Government had now decided to extend bio-environmental control to the whole State in the coming years.

(ii) Dr. Ravi Narayan informed the group of:

(a) Dr. Vinay Kamat's study report on some social/anthropological aspects of Malaria in urban Mumbai which he had received from him

(b) the process towards the evolution of an urban malaria research network that would be supported by IDRC and facilitated by MRC and would focus on social-science aspects of research in malaria and malaria control.

(iii) It was decided that a more focussed meeting on the "Karnataka Training plan" will be held after Mr. Anand returns from the VHAI-Malaria orientation programme. Tentatively, it was felt that this would be held in the second half of April after elections and examinations are over.

****

Masterplan swept under carpet 10 years ago being revived

Sriranjan Chaudhuri

BANGALORE: It was a master plan prepared almost a decade ago on the invitation of the Karnataka government to deal with Bangalore's mosquito menace. Compiled by the Vector Control Research Centre (VCRC), Pondicherry, it has been collecting dust, even as the city's mosquito problem got out of hand. With the monsoon on its way, it can only get worse.

Efforts are now on to revive the plan with the help of environmental and citizens' groups and by involving the BCC. A seminar, scheduled for later this month, will attempt to rework parts of the plan.

Says Dr Ravi Narayan of Community Health Cell, which will be organising the seminar, "The VCRC solution was an environment-oriented solution, which is long-term, as the mosquitoes have developed resistance to fogging."

The plan divides Bangalore into 24 distinct ranges and suggests ways and means of tackling mosquitoes, given the unique conditions prevailing in each area.

Controlling the mosquito menace in the city was first discussed during the Southern Regional Health Minister's Conference held at Pondicherry in 1983. With Pondicherry having successfully quelled its mosquito problem, based on suggestions forwarded by the VCRC, the Karnataka government, at the initiative of then health secretary N.P. Singh, invited the research centre to study the situation in Bangalore and prepare a master plan.

After meetings with then Chief Minister

MOSQUITO MENACE

Ramakrishna Hegde, the VCRC established a field unit in Bangalore. An interim report was submitted in January 1985. "This was circulated to all the high powered committee members chaired by the chief secretary, for implementation," wrote the Director of VCRC, Dr P.K. Rajagopalan, who has now retired.

Problems plagued the team from the initial stages itself. "The time schedule for the preparation of the master plan could not be adhered to as the facilities for carrying out such a survey, which were promised through a government order, were not provided by the Directorate of Health Services," Dr Rajagopalan wrote in the preface to the final report.

Despite this, the VCRC carried out a detailed survey pressing its own manpower and accomplished the task of micro-level planning for the control of mosquitoes in Bangalore.

According to Dr Rajagopalan, "The master plan is obviously the first of its kind in the country which is so designed as to incorporate all the essential mosquitogenic characteristics of a metropolitan city, the optimum use of the existing staff and finances for mosquito control and the measures to maintain a clean environment with better men and material management."

Initially, when the VCRC established the Bangalore Mosquito Control Unit, it was planned that it would function for a period of five years. "It became apparent before long that the cooperation rendered by the concerned departments was not commensurate with the promises made and therefore it was felt this goal would not be achieved easily," the preface says.

As a result of bottlenecks faced at every stage, the VCRC plunged into action on its own and prepared the master plan within the shortest possible time and placed it before the government to implement in 1987-88.

Even that did not happen, with the result that mosquito-borne diseases like dengue began rearing its head in the ...

Tomorrow: Details of the master plan

'De-weeding, desilting drains, multi-pronged attack will help'

Sriranjan Chaudhuri

BANGALORE: The decade-old masterplan of the Vector Control Research Centre (VCRC), Pondicherry, to control Bangalore's mosquito menace had divided the city into 24 ranges and suggested solutions for each, taking into consideration the conditions prevalent in each.

VCRC divided Bangalore into main city areas such as Malleswaram, Rajajinagar, Gandhinagar, Chickpet, Binnypet, Chamarajpet, Basavanagudi and Jayanagar to outlying ones like Sarraki, Nagarabhavi, Hosekerahalli, Peenya, Byrasandra and Agaram.

Commenting on the use of insecticides by the Bangalore City Corporation (BCC) to control the mosquito menace, the plan said, "The quantity of insecticides used clearly indicates mosquito control is not hampered for want of insecticides." It added the total quantum of insecticides used was more than adequate when compared with the quantity of insecticides recommended by the National Malaria Eradication Programme (NMEP).

"Generally sewage lines run parallel to storm water canals and are blocked. Instead of cleaning these sewerage lines and making them

MOSQUITO MENACE-II

functional the BWSSB has allowed the sewage to flow through stormwater canals. This has converted all the stormwater canals into potential breeding ground for mosquitoes."

The water blocked in stormwater canals with mounds of garbage dumped into them aided in the breeding of *culex quinquefasciatus*, a dominant species of mosquitoes.

VCRC also examined tanks, box drains, cultivation, kutcha drains, wells, overhead tanks, cess pits, vacant plots and found that all of these were perfect breeding ground for mosquitoes.

The masterplan suggested environmental improvements to combat the mosquito menace. "Deweeding, desilting and cleaning of drains can ensure free flow of water thereby reducing mosquito breeding. If this is done no spraying would be required in the drains and will result in considerable savings in the cost of insecticides," the plan claimed.

To achieve this more inputs should be provided for garbage and solid waste disposal, it added. In fact the plan suggested that the silt and debris removed from drains, if utilised for filling quarry pits and other low lying areas, substantial reduction in breeding habitats could be achieved.

VCRC also spoke of the need for multisectoral collaboration and called for cooperation between the BCC, BWSSB and BDA. "It has been universally recognised that mosquitogenic conditions in and around the city are mainly due to bad engineering practices and lack of interdepartmental coordination," the VCRC emphasised. It also points a finger at the community which it says by dumping solid waste into drains was creating a serious problem.

The VCRC plan was also critical of the procurement of substandard insecticides. "It was noticed the mosquito control activities are carried out in a casual manner and follow crisis management technique... real breeding habitats in several areas remain unattended," it said.

It then went on to suggest a time-bound action plan for each of the 24 ranges and recommended means of controlling each breeding ground such as drains, tanks, industrial complexes, wells and cesspits. VCRC also suggested a monitoring and feedback system.

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MALARIA TUBERCULOSIS

EDITORIAL

... a classic no-win conundrum ...

The greatest killers are on prowl, medical breakthroughs notwithstanding. The price being paid for glossing over the global emergencies of Tuberculosis and Malaria is very heavy. The challenges ahead are tough, resolute steps are called for. The fight needs to start at home and then spread globally. Braver actions, than seen hitherto, is the need of the hour.

Makeshift shelters, clustered together, with plastic or cardboard roofing, exposed to the scorching sun, icy winters and drenching rains, are grim realities of the urban and semi-urban India. These subhuman surroundings, with no privacy, space or fresh air, are the ideal most grounds for the spread of communicable diseases. The TB and Malaria time bombs tick, not just for some forgotten hill tribes, or for the neglected people in the rural hinterland, or for the refugees living below the poverty line, but even for the well-heeled and well-nourished. These diseases are fast covering up the entire map of the country.

To add fuel to fire, the dual epidemic of TB-AIDS has become the most serious threat to public health in recent times. This partnership, besides being the biggest killer of adults, also orphan more children than any other health problem. TB killed some 3 million people last year, the largest ever in history, more than tropical diseases, malaria and AIDS deaths put together. TB is spreading faster each day. 50 million people are estimated to be already infected with the drug resistant TB bacteria, a man-made disaster which has virtually no treatment.

Government is, of course, seized of the matter. New policies and programmes are being formulated and envisaged. But are these properly researched and thought-out? Do they offer the best alternatives to suit the specific needs of the population? How rational and sustainable are they? These are some of the basic questions, health activists seek answers to.

Despite the existence of the National Malaria Eradication Programme since 1953, Malaria continues to haunt millions in different parts of the country. If past events are any indication, this year holds no promise either. Last year, two million people were affected, including a large number with the deadly cerebral malaria, caused by the Plasmodium falciparum parasite.

The introduction of the Revised National TB Control Programme, based on the DOTS strategy and the new approaches in Malaria control have wide ramifications on the health status of the people. It is, therefore, imperative that these matters are analyzed critically before advocating them for implementation.

Concerned seriously with the emerging threat from these diseases and alarmed by the lack of information on the ongoing planning process, VHAI decided to look into these issues systematically by setting up an Expert Committees each on TB and Malaria, in collaboration with other scientific agencies. Summaries of the findings of these Committees are presented in this issue. VHAI hopes that these initiatives would strengthen its drive for a sustainable, need-based and accountable medical services system in the country.

Greater orientation and commitment, on the part of medical personnel and political establishments, towards the eradication of Malaria, may be a fitting tribute to mark the centenary of Ronald Ross' discovery of the malaria parasite.

The problems of communicable diseases are aggravated by many factors which include close proximity of people living and working together, half-hearted control efforts by concerned authorities, failure of diagnosis and follow up, poor data collection and premature termination of treatment by patients. The combined effect of these factors have made the situation almost getting out of hand.

Besides the issue of the basic needs, the availability of quality goods and services in sufficient quantities is a major concern of the people. Law, or even 'judicial activism' alone cannot ensure a just society capable of disciplining market forces. Product knowledge, based on scientific analysis is essential for raising people's conscience. Some light is thrown on this aspect in this issue.

At this critical juncture, close to the turn of the century, the portents are ominous. It is no longer safe to expect from the state and political decision-makers, to handle all the responsibilities of health management. A people's movement cutting across divisive lines, spread across the country, is yet to play its decisive role. In these times of political turmoil, people's voices are likely to be lost in the melee. Determined campaigns combined with innovate social interventions are absolutely necessary, at the government and voluntary sectors. The trend is likely to be reversed as the political haze has started evaporating. Unfortunately, the people cannot wait infinitely. They are getting impatient.

A frontal assault on these resilient pestilences perpetuated by poverty, is an utmost urgency. High level policy negotiations and plethora of committees including the suggested National Disease Surveillance and Response System apart, the people of India expect deeds that prevent and cure diseases, and not pious resolutions and empty words. ■

Malaria and Tuberculosis : Our Concerns

Dr. Mira Shiva

Dr. Mira Shiva is the Head of the Public Policy Division in VHAI.

It was in 1978, that 116 countries signed the Alma Ata Charter which gave priority to the concept of primary health care, besides highlighting the socio-economic and political dimensions of health, on which depended the health status of the people. It is almost two decades since that historic declaration was made.

The negative health impacts of the structural adjustment programmes in Africa and South America were clear warnings and glaring examples for nations which drastically altered their economic policies with cuts in expenditure on health, education and social sector. As 'profits before people' was legitimized by the market-driven growth approach, it was natural that human lives and human values were to be paid as the price.

The resurgence of communicable diseases is not at all surprising. Unless the above phenomenon and trend is reversed, no amount of anti-TB drugs and anti-malaria drugs can control these diseases.

The 1995 World Health Report by WHO spoke about the increasing disparities between the rich and poor nations, and between the rich and poor within the nations – a phenomenon which has resulted in the worsening of extreme poverty and also the diseases of poverty. So much so that a new category was added to the international classification of diseases, called Z 59.5 which stands for extreme poverty.

India witnessed malaria epidemics in Rajasthan in 1994, where over 1000 people died (soon after the plague epidemic in the country), in Assam in 1995 and in Mewat region of Haryana and many other areas in 1996, with hundreds of deaths and thousands afflicted. During the same time, Delhi recorded over 300 deaths from haemorrhagic dengue fever.

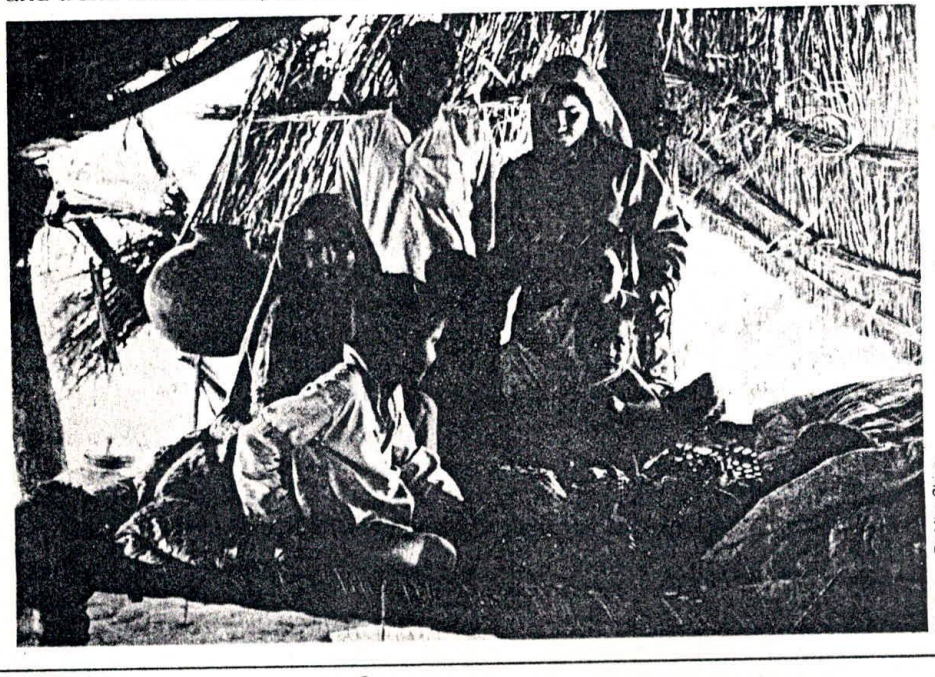

Photo by : Dr Mira Shiva

These epidemics have clearly shown that malaria deaths occur when malariogenic conditions are created and health care services, both in the public and the private sector, fail to prevent, diagnose early and effectively treat the disease from the beginning. Most of the victims are from the poorest sections of the society.

Malariogenic and tuberculous conditions continue to be created by distorted development patterns and commercialization of medical care. Public health and community health are being rapidly replaced by the profit-oriented and irrational curative care, 80 per cent of which is in private hands with little or no accountability. Unprecedented increase in the medical-industrial complexes, with hardly any regulation or social control, tend to market medical care as a business commodity and not as a public health service.

The egalitarian principle in health care has been defined as 'receiving treatment according to the needs and paying for them according to the ability to pay' (Wapstap and Doorslair 1993). The phenomenon of increasing unemployment and social marginalisation of a large number of people, has put greater demands on health care. Resurgence of epidemics of communicable diseases is being seen worldwide, especially in the

Third World countries. This is precisely the time when the privatisation of medical care is leading to spiralling of medical care costs and rural indebtedness. At the same time national governments are expected to provide cost-effective health care, with 'fee for service'. Just as the Consumer Protection Act attempts to protect only the consumer, so also, these health policies address only those with purchasing power.

There is conflicts between different policy objectives; cost-efficiency or cost-effectiveness vs. equity; between different reform instruments; negotiated contracts vs. patient choice etc. They have confused the implementation process, according to Meri Koivusala and Ollila in their extremely analytical book on "International Organisations and Health Policies".

The excellent article in the British Medical Journal (BMJ) "Tuberculosis: old reasons for new increase – Socioeconomic deprivation threatens TB control" reminds us, yet again, that TB notification in UK had started falling steadily long before the specific chemotherapy for TB was made available. The most powerful factors in providing TB, observed over a century ago (in 1899) were:

* Air contaminated by the so called Tubercular bacillus
* Food inadequate in purity, quality and quantity
* Confined and overcrowded dwelling
* A low state of general health and low body resistance.

A century later, the factors remain very much the same. According to official figures, there are about 14 million people with TB in India of which 2.5 million are infectious and 500,000 dying annually. Poverty, unemployment and homelessness and poor nutritional status are inextricably linked together to increase the vulnerability to TB.

The failure to reduce TB in most developing countries, in spite of the availability of effective chemotherapy, has been attributed to the failure to improve socioeconomic conditions, as per evidence from Britain, provided by Janet H Desbyshire of University College, London Medical School.

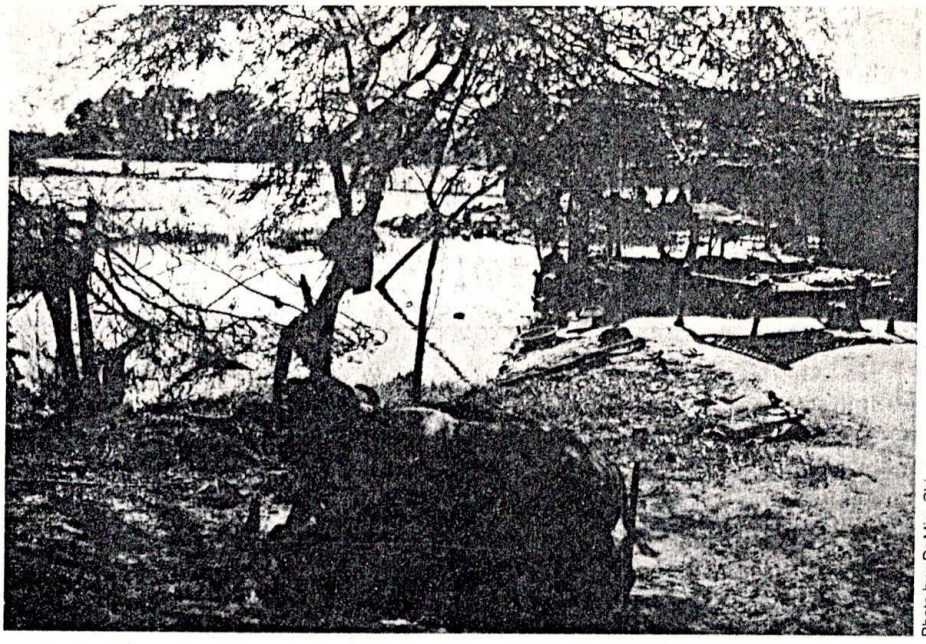

Photo by : Dr Mira Shiva

Since 1988, there has been an increase in TB in England from 172 in 1991 to 305 in 1993, so also an increase in unemployment. Half the number of TB cases are migrants and refugees. In Britain, the greatest increase in TB between 1980 and 1992 occurred in the poorest 10 per cent of the population. Indeed an increase occurred only in the poorest 30 per cent of the population.

This year WHO has attempted to highlight the global emergence of infectious diseases as their annual theme. as we celebrate the centenary of Sir Ronald Ross for his tremendous contribution to understanding of malaria by sharing the presence of the malarial parasites in infected mosquito.

As the country prepares for the summer and monsoon, the mosquitogenic/malariogenic months, as loans for the revised TB, malaria strategy are being made available from the World Bank, it is important to look three to five years hence. Identification of the greatest burden of diseases based on an assessment by use of Disability Adjusted Life Year (DALY), which is incidentally an economic tool, has been made. When most malaria deaths are not even reported but are recorded as fever, as blood tests for malaria parasite is not done or not reported, how accurate would the DALY's for malaria be?

The National Health Policy was never revised since 1983. As changes are made, which affect lives of the millions, we in VHAI reiterate our priority to those in the Z 59.5 category, who do not have the purchasing power. They will be the most afflicted and will continue to make great sacrifices with their lives.

The most important question remains whether there can be a rational health care in a patently unequitable world, when creation of inequality is the accepted global trend. Resurgence of infections is a symptom of this deep pathology. While this economic tool gets increasingly used by policy-makers, it further mystifies the process and the victims continue to die in greater numbers. Increase in population, corruption, inadequate health budgets and other such factors contribute towards worsening the situation. ■

An important factor that has direct effect on health care is corruption. Nobody takes serious note of it.
– Dr Thelma Narayan

Towards An Appropriate Malaria Control Strategy : Issues of Concern and Alternatives for Action

This write-up is based on the Executive Summary of the Report of the Malaria Expert Group, containing its reflections and recommendations, prepared by Dr. P. N. Seghal.

This Expert Group was a collective initiative of the Voluntary Health Association of India (VHAI), New Delhi and the Society for Community Health Awareness, Research and Action, Bangalore. The preparation of the preliminary report involved interactions and consultations with a large number of organisations and specialists in India.

The Malaria Expert Group (MEG), which functioned from April - December 1996, consisted of six members. It was set up to seek wider opinions on the malaria situation and suggestions on how to tackle the problem as a follow up of VHAI's active involvement in epidemiological studies and malaria control measures in Rajasthan in 1994 and in Assam in 1995. The Expert Group aimed at bringing together all the complementary initiatives and processes that have been going on in the voluntary sector, over the last few years, with regard to malaria care to strengthen the emerging control efforts.

This Group tried to do a realistic, action-oriented exercise with an alternative perspective and new direction. Key issues of concern, some of which have not been adequately considered in the recent planning process, have been duly considered.

Resurgence of the Malaria Epidemic

In 1952, there were 75 million malaria cases with 0.8 million deaths per year in India. The National Malaria Control Programme (NMCP) was launched in 1953 and National Malaria Eradication Programme (NMEP) in 1958. The programme achieved remarkable success in 1964 when about 100,000 cases were

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reported with no deaths. The resurgence of Malaria after 1964 reached its peak in 1976, when about 6.7 million cases were recorded. In spite of the best efforts by NMEP, the situation has plateaued to around 2 to 3 million cases with gradual increase of cerebral malaria due to *P.falciparum*.

The resurgence of malaria as a major Public Health problem has become a matter of serious concern, especially in the last decade, due to occurrence of epidemics in Rajasthan (452 deaths), Nagaland (253 deaths), Andhra Pradesh (173 deaths), Manipur (48 deaths) and West Bengal (3 deaths) in 1994. In 1995, Assam, West Bengal and Maharashtra experienced malaria epidemics with high morbidity and reports of deaths.

Gross Underestimation

Deaths due to malaria, reported annually by NMEP, are between 200-500 from 1984 to 1993 with an increase to 1000 + in 1994 and 1995. If crude death rate in the country is 10.8/1000 and of the 7.4% fever deaths, 0.8% are malaria fevers (GOI information), then malaria deaths would be 73795. Vital statistics of India collected separately also reported malaria deaths as 137,846 in 1985 and 75,285 in 1987 (NMEP figures were 213 and 188 respectively).

The National Malaria Eradication Programme (NMEP) estimates on malaria morbidity have been cross checked by the Expert Group, on the basis of consumption of anti-malarials especially chloroquine phosphate.

It appears that a more realistic and safer assumption would be that 20 to 30 million episodes of malaria occur every year as against 2 to 3 million cases reported by NMEP.

In the absence of malaria being a notifiable diseases, any surveillance system which disregards the non-governmental sector is bound to produce a gross underestimation of the reality.

In states, the availability of laboratory technicians at PHC level are diminishing with vacancies of 50-75% not being filled. In such a situation, under-reporting of cases will become the norm.

THE EXPERT GROUP'S SUGGESTIONS FOR ACTION

Epidemiological Aspects of Malaria Control

Malaria being an exclusively focal phenomena, governed by presence of parasite, vector, susceptible hosts and suitable environmental conditions in the community, it is important that national and/or state level programme norms or guidelines need to be flexible and should allow diversity of response to the diverse focal situation.

There is urgent need to effectively monitor the spread of *P. falciparum* (which causes cerebral malaria) all over the country. Resistance to chloroquine in *P.falciparum* was first reported in the North-East/Assam (1973) but now it has slowly spread to many other parts as well. NMEP has been gradually mapping the resistance problem but this data is not yet adequately shared or communicated to health care practitioners to help them modify their treatment schedules and treat resistant forms actively with alternative regimens. This sharing and distribution of information is crucial for malaria control.

While vector dynamics are important components of malaria control, the inadequate or near absence of field oriented entomologists mean that a major adjunct to policy analysis and solution is being neglected. The acute shortage of entomologists and their improper deployment and support to those who are in the public health system and NMEP is reaching a crisis situation which needs urgent policy redressal.

Urban Malaria Scheme

One of the major problems in the Urban Malaria Scheme (UMS) is that the responsibility of implementing them lies with the local bodies like municipalities and corporations. In most urban areas, local bodies give excuses of lack of resources and human power for their poor performances in malaria control. A large number of UMS posts remain vacant; blood smears remain unexamined for months to end; fogging and space spray operations are done only when there are outbreaks; larviciding operations are conducted without any evaluation or monitoring.

Development Projects

The mosquitogenic potential of large development projects such as dams, irrigation/canal systems, bridges, laying of roads and railway lines etc. or establishment of large industries has been well documented. It is therefore recommended that this continuing neglect or near total absence of environmental impact assessment (EIA) of development projects must be reversed and EIA must become mandatory for all projects.

The problem areas such as hard core areas - tribal areas mostly; epidemic prone areas; project areas; Triple Insecticide Resistance Areas and urban areas should get greater attention and very different responses. NMEP will have to become more flexible and local in its programme planning.

Malaria which was predominantly a rural disease in India has now diversified into 5 ecotypes namely Tribal, Rural, Urban, Industrial and Border. These ecotypes and sub-ecotypes have their own specia features and these must be adequately understood, analyzed and monitored while malaria contro programmes are planned. The malaria control strategies will have to be based on these epidemiologica characteristics.

The understanding of epidemic dynamics calls for strict surveillance. maintenance of an adequate suppl

of drugs and an increasing epidemic preparedness in years of good rainfall.

Social Dimension of Malaria Control

The overall emphasis on techno-managerial issues has completely over-shadowed what has been suggested as socio-cultural, economic and politico-behavioural issues relevant to the community at risk. The malaria control programme has seldom involved a sociologist or anthropologist, to complement/supplement research efforts or to actively participate in a truly inter-disciplinary way with problem analysis and problem solution. Behaviour science approaches and socio-anthropological and socio-economic/health economic research competence must be urgently built into the 'problem analysis' and 'problem solving' structures at all levels.

Rational Malaria Control

Diagnostic Support

One of the biggest deficiencies in the entire malaria control programme is lack of scientifically functional diagnostic facilities at almost all levels of health care delivery. The important fallacies in the diagnostic machinery are:

- Time lag between blood collection and examination
- Absence of functionally viable microscopes and lack of their maintenance.
- Lack of training on malaria microscopy of the lab. technicians as well as doctors attached to health centres.
- Shortage of lab. technicians to the extent of 50 to 75% of sanctioned posts.

Malaria is a relatively simple disease provided it is diagnosed early and treatment started promptly. Most of the malaria deaths are due to delayed diagnosis and treatment.

Areas needing urgent attention are:

- Logistics for laboratory supplies should be streamlined.
- In-depth rigorous training for lab. technicians in malaria diagnosis.
- NGOs should be trained and supported to open peripheral laboratories, particularly in remote areas and brought under the network.
- Training supervisors for laboratory work and cross checking of the findings
- Setting up of graded laboratory facilities appropriate to different levels of health care delivery system for early diagnosis, treatment and monitoring of complicated malaria cases.

Issues in Clinical Diagnosis

Health personnel of various levels i.e. doctors, para-medics and health workers need to be well trained in clinical skills to diagnose malaria early, exclude other causes of fever and identify complications of malaria.

It is, therefore, suggested that a key component of malaria control strategy should be to upgrade the skills of Medical Officers and General Practitioners in the government and voluntary sector in clinical diagnosis through distribution of simple booklets on standardized modes of diagnosis and continuing medical education (CME) programmes in collaboration with medical/nursing colleges, IMAs and NGOs.

Rational Drug Policy

It has been observed through a prescription survey that more than 90 per cent of the anti-malaria prescriptions are irrational. This has been mainly due to lack of awareness among medical professionals about therapeutic aspects of the disease. This situation is leading to untimely exposure of the parasites to newer drugs leading to drug resistance. Chemoprophylaxis in the endemic area and presumptive treatment to any fever cases are to be looked into seriously with regard to their role in

Courtesy : VHAI

the emergence of chloroquine resistance.

By and large, the Expert Group endorses most of the aspects of the Treatment Policy on Malaria, recommended in the Malaria Action Plan Operational Manual (1995) of the NMEP. Clear policy statements are required on which anti-malarial drugs should be allowed in the market. This applies also to drugs that are no longer recommended e.g. Amodiaquine and new drugs e.g. Mefloquine and and Artemenine.

The results of the drug resistance monitoring must be made available to district health authorities and also to the medical profession in respective areas. Adverse drug reaction and monitoring of old/new anti-malarials should be undertaken besides ensuring post marketing surveillance by manufacturers of newer anti-malarials.

In endemic areas, anti-malarials should be available free (as mentioned in Malaria Action Plan 1995) or they should be very reasonably priced.

G6PD deficiency and sickle cell anemia mapping should be done and made available to doctors in the affected region with warnings about avoidable anti-materials and other drugs.

Proper prescription audits,

medical audits and drug audits must be undertaken periodically. Specialized centres for treatment of complicated malaria should be established in teaching hospitals of medical colleges.

Prevailing Confusions

There is need for NMEP to initiate dialogue with professional and academic bodies and medical colleges to popularize their guidelines and reduce the existing confusion, vis-a-vis treatment schedules, controversies and debates related to new anti-malarial drugs such as Mefloquine and the use of Sulfa-Pyramethamine combination drugs for chloroquine resistance strains. A major effort is required to incorporate these guidelines into medical (undergraduate and postgraduate) training as well as in the courses for nursing and allied health professionals.

NMEP's stand on Ayush-64 (Ayurvedic preparation) should be made clear, which has been recommended by the Central Council of Research in Ayurveda and Siddha.

NMEP should publish its guidelines (at least once a year) on drugs, dosages, precautions, indications and contraindications in scientific publications which are routine reference materials for practitioners.

Personal Protection Measures

Personal protection measures must be known to all the affected population to reduce the chance of mosquito bites and hence of contracting malaria. Simple measures like wearing of adequate clothing after dusk to avoid mosquito bites, smoke fumigation, especially burning of neem or tulasi leaves in houses before sleeping hour may be mentioned for the choice of the poor sections of the population. The efficacy of bed-nets in malaria prevention should be made known to people. Encouragement of Neem, Lemon-Grass and Citronella plantation as environmental intervention measures for the family and community need to be highlighted.

Malaria and Primary Health Care

Malaria control has been integrated with Primary Health Centres (PHC). The multipurpose health worker, the lab. technician and health supervisors are the crucial operational team of the programme within the PHC organization. However, the crucial challenge is that malaria control becomes part of a Primary Health Care strategy only when the following principles are adopted:-

- Community Participation
- Appropriate Technology
- Inter-sectoral coordination
- Social Equity.

The community needs to be actively involved in planning and implementing the strategy. They should be accepted as participants rather than beneficiaries of the programme. The strategy should be directed towards enabling and empowering the community rather than just providing a service.

Community Capacity Building

To facilitate community capacity building the following activities are necessary:-

- Providing complete knowledge on malaria, its causes, spread, treatment and prevention.
- Stressing the importance of early diagnosis and treatment. The community needs to be aware of the early signs and symptoms of malaria specially that of the onset of cerebral malaria.
- Providing accessible treatment

THE 'MEFLOQUINE' ISSUE

The Malaria Expert Group (MEG) is deeply concerned with the introduction of Mefloquine, at this stage, in the National Drug Policy on anti-malarials, without its rational use being ensured, because :-

- Cross resistance with quinine develops rapidly, so loss of effectivity of quinine due to Mefloquine misuse especially when P.f infections are increasing in the country, could lead to a major public health catastrophe.
- Technically Mefloquine has no advantage over other available anti-malarials effective for P.falciparum.
- As the gametocytes are not killed by Mefloquine, so a patient treated with Mefloquine will remain a reservoir of infection and a public health danger, spreading the infection in the community.
- In practice, in the Indian situation, it will not be possible to comply with the condition of 'compulsory laboratory report' by qualified parasitologists indicating that there are P. falciparum rings.
- Mefloquine is not recommended by the CDC (USA) for standby treatment in any situation. Breast-feeding mothers taking Mefloquine is contraindicated. Terotogenicity in animals has been noted and, therefore, it should be avoided in the first trimester. It is contraindicated for those with history of convulsions, psychiatric disorders, severe renal, hepatic dysfunction and cardiac conductive disorders.
- Taking all those factors into consideration, the permission to import Mefloquine will only facilitate unethical medical practice and promote misuse/ overuse of a drug that should be kept severely restricted as the only second line against chloroquine resistance. It is therefore suggested that the use of Mefloquine should be seriously reviewed in the light of known factors in order to restrict its use.

centres including knowledge of proven locally available herbal precautions and treatment.

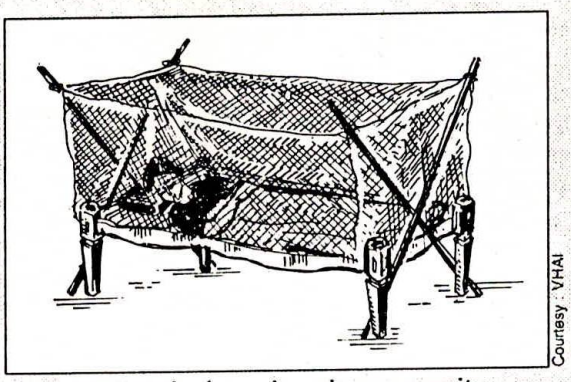
- Identification and involvement of all human resources in the community including panchayat leaders, informal leaders, mahila mandals, youth clubs, teachers and school children, Traditional Birth Attendants, General Practitioners including those of Indian Systems of Medicine.

IMPREGNATED BED-NETS : SOME LOOPHOLES

Bed-nets impregnated with synthetic parathyroid insecticides @ 25 mg/sq. m have been found useful depending on the biting behaviour of the local vectors and also the cultural habits of the population.

Impregnated bed-nets (IBNs) should be promoted as part of a multi-alternative programme and a multi-pronged strategy but not as the only option in all initiatives, government or non-government.

Studies should be done on their acceptability, feasibility and sustainability, focusing particularly on the poorer sections of the community. They should be



Courtesy: VHAI

community-based and community-controlled and not subsidized or distributed free through the programme.

A large majority of the population do not even have proper beds. They are too poor to invest in nets. Overcrowding is a common problem. I this country, with a long hot summer and no facilities for cooling systems, nets cannot become too popular. While family bed-nets and impregnated curtains etc., may be appropriate alternatives, too much focus on 'impregnation' may divert attention from other methods and strategies.

It is important to distinguish between the promotion of impregnated bed-nets/curtains through public education and their application as an intervention for malaria control, aimed at a certain section of the population. It is essential that their efficacy under local conditions has to be documented and their sustainability ensured.

THE VECTOR CONTROL SCENARIO

The principal objective of vector control has been reduction of malaria incidence by decreasing transmissions. Reliance in vector control is now being shifted from total dependence on insecticides to an integrated vector control strategy suitable to local situations.

Issues of concern are:

- Development of insecticide resistance among vectors of malaria.
- Environmental pollution due to use of insecticides.
- Lack of adequate infrastructure and studies about the relevant environmental, ecological, social, economic and health service facilities for selective vector control in different areas.
- Lack of effective inter-sectoral coordination between different departments and development projects (irrigation, agriculture, flood control, public works, water supply and drainage system in urban areas) for reduction in vector breeding.
- Lack of adequate entomological expertise on whether or not to use spraying in a particular area, which insecticide and when to do the spraying operation.

There is lack of adequately trained staff for sound technical management. Till now plans for spraying have been based on a single uniform criterion viz., a certain annual parasite incidence (API) without taking into account other epidemio-logical and social factors.

- Irregular treatment of the breeding places and lack of inspection at frequent intervals.
- Lack of management information systems and decentralization of decision-making.

These areas of concern call for appropriate strategies which include strengthening vector control measures primarily by enhancing capacity for selective, local / focal spraying with insecticide and bio-environmental control at all levels. Enhancing the state and local self administration's capacity to ensure proper water and waste disposal and enacting model bye-laws to implement the measures under the urban malaria scheme are essential in vector control.

Health Education

A vigorous, effective and massive Health Education effort need to be undertaken, using not only mass media but more significantly other strategies especially for those who are illiterate and have no access to radio or television.

Certain measures should be emphasized.

- increasing the budget for health education.
- promoting folk media and community-based interactive-culture sensitive approaches.
- involvement of media/ communication centres in the government, voluntary and private sectors.
- inclusion of malaria and other diseases in the school curriculum at various levels.
- making available health education materials, existing and new production, in local languages.
- door to door and village to village malaria education in the pre-monsoon season, depending upon the onset of rains in the area.

Voluntary Agencies in Malaria Control

The role of voluntary agencies in malaria control is being increasingly recognized in planning and policy circles as effective complementary and supportive agencies. A relevant and operational linkage between government and non-government initiatives in malaria control should be evolved to involve them not only as alternative service providers but also as health communicators, community mobilizers, alternative community health oriented trainers, action and operational researchers and issue raisers and awareness builders.

These voluntary agencies can play significant role also in diagnosis and treatment of cases, health education and vector control with proper training in surveillance and management of malaria outbreaks.

Voluntary agencies with commitment to the malaria control programme may be identified and developed as Resource Centres. They should have trained human resources (malariologist, smear technician, microscopists, health educator, diagnostic equipment, treatment facilities and training infrastructure to train other personnel both in voluntary and private sectors.

At the grassroots, the costs of training community level people and personnel of Volags Resource Centres should be incorporated into the regular NMEP budget. A separate cell to deal with Voluntary Agencies and private sector may be established at NMEP, both in Delhi and at the State Headquarters.

Private Practitioners in Malaria Control

It is estimated that nearly two-thirds of the health care providers in rural and urban areas in India are private practitioners. These include practitioners of allopathic and other systems of medicines. It is surprising, however, that NMEP has not adequately clarified the policy on the involvement of this sector in any active way. It is a matter of great concern that there is no planned dissemination of relevant information and update on rational malaria diagnosis and treatment regimens utilizing the generics/specifics available in India. The role of private practitioners in malaria control is rather dubious and marked by increasing commercialization and unethical prescribing trends.

It is suggested that General Practitioners, Registered and un-registered medical practitioners should be educated and oriented through Continuing Medical Education (CME) programmes with the help of professional organisations and communication materials.

Decentralized Planning

Planning should be decentralized to district/PHC level by developing planning skills at that level. The Panchayat leaders should be trained/ oriented to participate meaningfully in health planning.

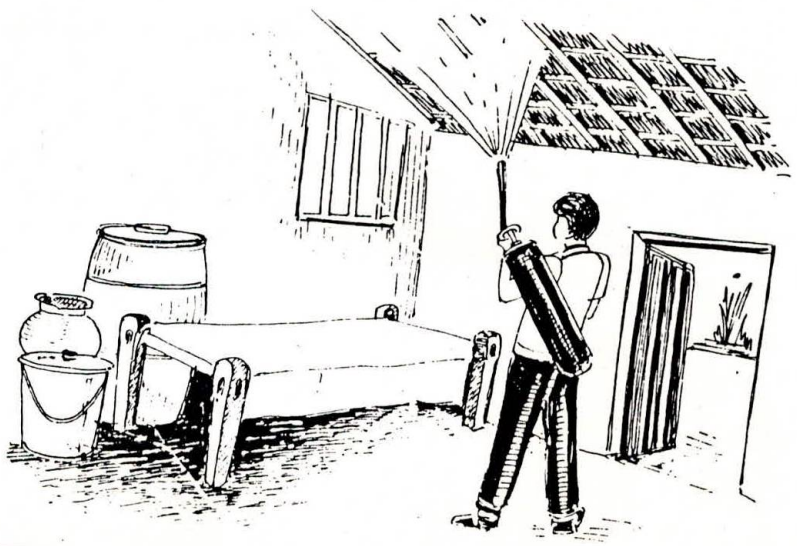
Indian Systems of Medicines (ISM) in Malaria Control

There is urgent need for consultation and dialogue with experts of ISM on the potentialities of ISM to malaria, study and strengthen local health traditions and practices relevant to malaria control, regular assessment and research of herbal and other alternatives.

Health Humanpower Development and Training

A humanpower development strategy for malaria control should promote the following:

- Provision and/or development of adequate trained staff at all levels of the programme.
- Re-introduce "Malariology" as a separate course as well as a



Courtesy : VHAI

module in medical/nursing and public health engineering education.

- Constant monitoring and supportive supervision as well as accreditation of institutions associated with training of the programme team.
- Bringing in a policy of filling up vacancies.

Loss of Public Health Competence

The National Malaria Eradication Programme, as well as all other health programmes in India, is being greatly affected by the increasing disregard of 'public health competence' and public health perspectives in health policy and health care decision-making. At the Central and state levels, there is increasing marginalization of technical leadership with public health competence, by their clinical counterparts and also of both these groups by lay generalist administrators. Decisions that need sound epidemiological and technical background are now being increasingly taken by those who are not adequately qualified to do so. Therefore serious efforts be made to strengthen public health training and services in the country.

Malaria Research Challenges

There is an urgent need for promoting operation and field research in malaria control, particularly focusing on socio-epidemiology; informal research process guiding network; appropriate technology; and an efficient lab to field programme transfer.

Epidemic Forecasting

The NMEP guideline for Mobile Epidemic Control Units (MECUs) at district level should be operationalized urgently. Concerted action to promote epidemic monitoring and or control/prevention at the field level and enhancing the epidemic preparedness at the district level is needed.

A Relevant Malaria Policy

Programme and policy planners in malaria control must actively study and contextualize the wider socio-economic-cultural-political setting in which their strategies must be located. A broader context of public policy must therefore inform their deliberations, understanding and strategies for action, research, training and evaluation.

Management Information System

The existing MIS in Malaria should be reviewed to ensure that the whole system is simple, integrated and responsive rather than complicated, compartmentalized and bureaucratic.

Regular feedback, based on the analysis of all data collected, must be passed downwards to the field staff which shall help the collating agency to analyze the data and to make the process relevant, promptly and regularly. It will enthuse the field staff in providing their relevant inputs because they may identify their contribution to the management system.

International Public Health Collaboration

While promoting International Public Health cooperation, it is necessary to have a watchdog committee of the government and members from voluntary agencies to evaluate every bilateral project to ensure that it is geared to:

- Enhancing national capacity to deal with the problem.
- Building national infrastructure especially trained and skilled multi-disciplinary manpower.
- Is rooted in approaches of strategies responding to local needs and socio-economic-cultural-political realities.
- Ensuring that project/linkage are transparent and subject to collective interaction among all those who are seriously involved and interested in 'malaria' as a public health problem.

Centre-State Responsibilities

States have failed to sanction and establish PHCs/sub-centres as per prescribed norms and also to match central allocation on 50:50 basis due to low priority to malaria problem and lack of resources.

We believe that a time has come for a new policy alternative to seriously establish the primary responsibility of the states in the programme and devolving funds to that level. This will also mean re-orienting the central NMEP organization to provide training and other supportive facilities. Increased inputs into the health infrastructure and health programme costs by states will greatly stabilize the programmes leading to greater responsibility and involvement simultaneously.

NMEP and the Operational Management

There is a need to review all the operational aspects of the programme at all levels and making suitable mid-course corrections and management/organizational modifications responsive to the local field realities based on the suggestions given by expert groups from time to time. State level organization need to be strengthened in the field of epidemiology and entomology. Behavioural scientists should carry out periodic ad hoc surveys in different areas for formulating effective control strategies in those areas.

Finally, we need to ensure that malaria becomes part of an integrated, people-oriented, decentralized, empowering programme in which the people/community become central to the whole policy framework.

For a more detailed report of the Malaria Expert Group kindly write to:

Dr. Mira Shiva
Member-Secretary
Malaria Expert Group
VHAI
New Delhi 110 016

MEWAT CALLING

A brief report of the Malaria outbreak in Mewat

by DR. MIRA SHIVA

The malaria deaths in Haryana in 1996 were unprecedented. Following reports of the outbreak, in the Mewat region of Gurgaon (Haryana), a VHAI team consisting of Dr. Mira Shiva, Dr. Deepak Meshram and Dr. J.P. Jain visited the affected areas in November 1996, to assess the situation from the people's perspective.

The team covered three blocks of Gurgaon, namely Nuh, Ferozepur Jhilka and Nagina, coming under the eastern forest region of Mewat which is the poorest region in Haryana, predominantly inhabited by muslims. Moreover it suffered badly from floods during the 1996 monsoon.

While the national dailies were full with news of haemorrhagic dengue fever deaths in Delhi, great number deaths, especially from falciparum malaria, in the Mewat region, went largely unreported.

There were 1300 deaths of fever from 36 villages, in a population of 6 lakh. 10 per cent of the total population seemed to have been affected.

In some villages, there was not even a single home where someone was not lost. Deaths were maximum in children under-five and among people above 30 years. Gender based data were not available. Of the 564 deaths reported in Punhana, 378 were fever related. Of the 667 deaths in Ferozepur Jhilka, 348 were fever related, and of the 384 deaths in Nuh, 137 were fever related, mostly in rural areas. Almost 50% of the cases were falciparum malaria.

Observations and Recommendations

The following reasons were observed by the team for the malaria epidemic in the Mewat region.

- Environmentally compromised area. Very high rainfall - 1500 mm in 1996 (normal being 200 mm) and floods from Rajasthan.
- Poor drainage of water due to blockage of the natural drainage into the Jamuna by roads, rail tracks and houses. Low lying areas led to water stagnation.
- Relief agencies pulled out after the floods. Water-borne diseases like diarrhoea, hepatitis and typhoid increased due to water sources getting polluted. With increased mosquitogenic conditions, malaria and dengue were to be expected.
- The mosquito vector species found was 'Anopheles stephensi & culcifaecies'.
- DDT was ineffective as insecticides, therefore malathion was being used. It was also stated by the authorities that there was 100% sensitivity to chloroquine. But there were reports death in spite of treatment with drugs.
- Socioeconomic and developmental factors. The region is economically backward with large scale unemployment and female illiteracy, compounded by floods in recent years making agricultural work impossible.
- Social factors. A large percentage of affected people belonged to poor minority communities. Average family size was 4 - 7 with little or no spacing or fertility control due to religious reasons.
- Transport and Communication. Due to earlier floods, there was a breakdown of transport and communication services which caused delay in relief operations. There were no ambulances and jeeps to carry patients. Relatives brought patients on cycles, wading through water. The inability of health services to reach patients during the epidemic and delay in patients reaching medical services increased the gravity of the problem.
- Surveillance and monitoring mechanism. This was poor. The State government was alerted only after newspaper reports. WHO, NMEP, NICD got involved even much later and NGOs were not involved in provision of services at all, despite the PHC doctors approaching them for help with trained health personnel and transport.
- Underestimation of the fatal potential of fever. Early deaths of the malaria epidemic were reported as mysterious deaths since many patients died within a day of getting fever, headache and vomiting.

The malaria fever was viciously malignant (falciparum malaria) unlike the familiar version with chills, rigorous and headache which cured within few days of treatment. Warnings to health personnel and the villagers came too late. Many patients delayed seeking help from private practitioners being too poor to pay the high fees. The Govt. centres usually did not have enough medicines. Therefore, many patients did not even bother to go there.

- Preparedness. Health services were not geared to face the epidemic. Large number of patients who died of fever were undiagnosed in the absence of blood tests. It reflects lack of adequate mobile health services with lab back up. 95% of the deaths were in the villages.

Photo by Mira Shiva

- Health Status of people. Deaths were also due to severe malnutrition, anaemia and infections like TB. Acute malaria infection in the nutritionally compromised population made the situation worse and life-threatening.
- Flood prevention measures. Pumping of water from inundated area had to be done so that winter crops could be planted. Road repairs and vehicles were needed. Improvement in health services was essential by involving private sector and improving surveillance and monitoring mechanisms.
  - Involve medical colleges (SPM Depts.) during epidemics for public health training.
  - Provide adequate lab back-up.
  - Give therapeutic guidelines for doctors and health personnel.
  - Ensure adequate quantity of anti malarials.
  - Strengthen MCH related work as large number of patients were children and women.
  - Pump of water from inundated areas so as to reduce mosquitogenic conditions.
- Vector control : Do selective spraying, guppy fish and cultivate neem, lemon grass etc. Encourage self protection with mosquito nets and neem oil. Entomological study about vector intensity and vector resistance needs to be undertaken.
- Poverty alleviation programmes: New initiatives with improved expenditure on health are required. Income generation programme specially for women who are home-based needs to be promoted.
- Involvement of other agencies. NGOs, panchayats, schools etc. should be involved in a greater degree in fighting the problem at all levels.
- Development of the Mewat region. This should be taken up on a priority basis, involving the minority communities themselves, with due emphasis on economic factors as well us education.
- Drug quality. Since many patients had died. despite taking medicines, questions were raised about the quality of chloroquine prescribed.

According to the Health Department, additional personnel were posted in the villages, 34 posts of doctors have been sanctioned, 26 labs have been set up and 15 fogging machines were put into operation to spray malathion. A 50 bedded hospital has been set up in Jhilka. Nutritional programme have started in 20 highly sensitive areas, besides providing assistance by way of drugs, blood donations and food articles. However, villagers complained that many of the posts in the health centres had not been filled up. ■

ISSN:0970-8685

BOOK REVIEW

'Net Gain' : A new method for preventing malaria deaths

Priya Varadan is a free-lance writer based in Delhi.

Priya Varadan

Edited by Christian Lengeler, Jacqueline Cattani and Don de Savigny. *Published jointly by* the **International Development Research Centre,** P.O. Box 8500, Ottawa, ON. Canada K11G 3H9 and the **World Health Organization,** 1211 Geneva 27, Switzerland, 1996, pp. 189.

Aptly titled **'Net Gain',** the book speaks at length about the efficacy of the Insecticide Treated Net technique **(ITN)** in malaria prevention and control. In particular, it discusses the operational research and sustainability aspects of ITN technique at regional levels.

At a time when malaria vaccine is yet to see the light of the day, and early diagnosis and treatment with anti-malarial drugs not proving to be as successful as expected, ITN technique offers a new insight into the control and prevention of malaria.

'Net Gain' reviews and discuses, in its five chapters, the ITN technique in totality, development, implementation or usage, safety, everything is there. For all those who want to see the killer malaria out of this world one day, this book serves as a guide.

The book is the outcome of an initiative namely the comprehensive reviews of operational aspects of ITNs, from an international workshop organized by the International Development Research (IDRC) and the Training in Tropical Diseases (TDR) (of WHO, UNDP and World Bank), to look at the specific research issues and support of research proposals.

The implementation experiences and the promotion in Sub-Saharan Africa, where ITN interventions have drastically brought down malaria deaths. The third chapter titled 'Experiences of implementation' reviews the operational experiences of ITN. It discusses input (includes the of supply of bed-nets, staffing and training etc.) process and activities to achieve the desired results; macro level strategy (including source of finance and responsibility for distributing nets and offering treatment services); micro level strategies (including information as to who uses, requirements, preference, beds-nets, cost effectiveness etc.) monitoring; evaluation etc.

Bed-nets and chemical sprays are two well known tools in the control of mosquitoes but are of little effect. But, the ITN technique has proved that if these two tools work in tandem, they can become powerful weapons to fight malaria.

Countries like Gambia, Kenya are proofs to ITNs success where malaria is highly endemic. ITN intervention has resulted in reduction of mortality rate of children below five by 63 per cent.

How does ITN technique work and how effective is it in fighting malaria?

The presence of **pyrethroids** on a net greatly reduces a mosquito's ability to feed through the fabric or penetrate small gaps in it. An ITN with large holes protects as well as an intact untreated bed-net, reducing biting by 95 per cent. A treated net, besides preventing mosquito bites, also kills them.

ITN changes mosquitoes' behaviour to a very large extent, depending on the exposure and interaction to insecticide. Trials show that only few mosquitoes feed, many especially the female mosquitoes were killed before or after their blood meal and the rest were compelled to leave due to repellence.

Regarding the resistance to pyrethroids, the book says such cases are rare. Incidence of resistance to impregnated nets should be reported as it helps in monitoring and improving the technique.

Explaining the safety and side effects of pyrethroids, the book says pyrethroids have no tendency for bio-accumulation, unlike DDT for instance. It break downs rapidly both in mammalian tissue and soil. Pyrethroids exposure to skin, especially the mucus membrane, can cause transient tingling sensation. The first few days of exposure to the net leads to problems like sneezing, nasal irritation etc., but there are no long-term effects.

The treatment procedure of the net is well described. Highlighted in the form of a box item. It clearly explains procedure, precautions, measurement etc. The need for improvement in the technical aspects, in terms of standardization, monitoring etc., are also recommended.

The success of the promotion of ITN technique will largely depend on communication. Again methods of communication will depend on the socio-economic and cultural environs of the region.

After the Sub-Saharan experience, many countries are considering incorporating ITN into their malaria control programmes. If rightly implemented the net gain will be ours too. ■

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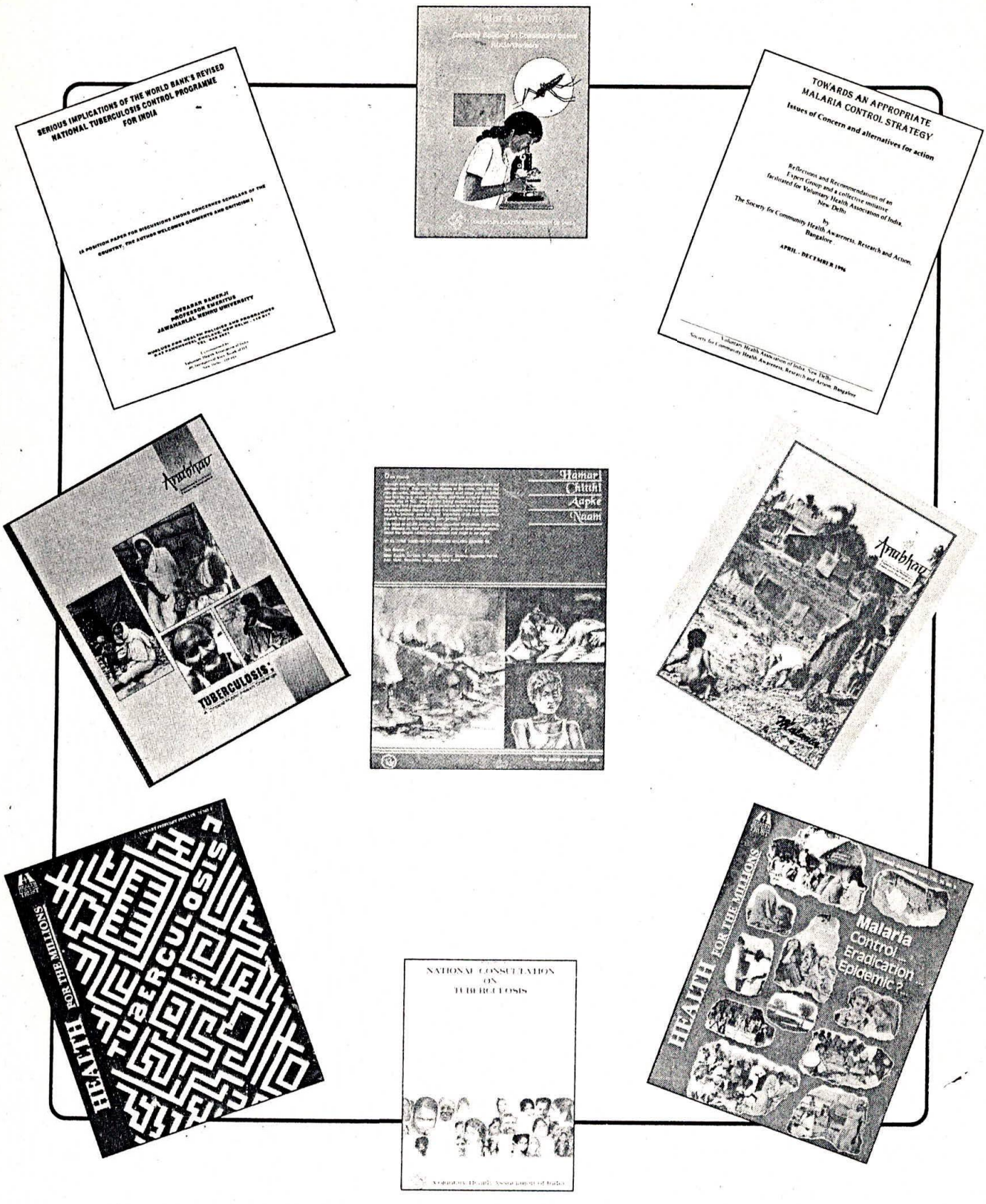

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Voluntary Health Association of India (VHAI)

Tong Swasthya Bhawan, 40, Institutional Area, New Delhi - 110016

TWO-DAY WORKSHOP ON MALARIA CONTROL - INTERSECTORAL COORDINATION BETWEEN GOVERNMENT AND VOLUNTARY ORGANISATIONS

VENUE : KING EDWARD HALL, BANGARPET, DISTRICT KOLAR

28 AND 29 JANUARY 1997

REPORT OF THE WORKSHOP:

A two-day workshop on malaria control was held on 28th and 29th January 1997 at King Edward Hall, Bangarpet. This workshop was a collaborative effort of Regional Office for Health and Family Welfare, Malaria Research Centre, Voluntary Health Association of Karnataka, Catholic Health Association of India- Karnataka region, Christian Medical Association of India, Community Health Cell - Bangalore and SIBS and CRUES at Bangarpet. Representatives of 10 government and 16 voluntary organisations engaged in community health and development programme of Bangalore and Kolar districts participated in this workshop.

The programme began with an introduction by Ms. T. Neerajakshi, Promotional Secretary, VHAK. The General Secretary of CRUES, Mr. Premanand Thambi welcomed the dignitaries and participants. Each participant gave a self introduction and then shared briefly about their role in improving the health status of the community. To enable greater understanding and active involvement, the workshop was conducted in regional languages (Kannada and Telugu).

Dr. K. Ravi Kumar, C.M.O, Regional office of H & F.W during his inaugural speech traced the history of malaria and emphasised that the malaria problem cannot be solved without the active participation and involvement of community and voluntary organisations. Underlining the main objective of this workshop which is intersectoral coordination he called upon the community and the voluntary organisations to complement and supplement the efforts of Government organisations in the control of malaria. Ms. T. Neerajakshi reiterating the objectives of the workshop, requested the voluntary organisations and government to work hand in hand to combat the malaria problem. She said the workshop sessions would explore the malaria problem in Kolar district, it's transmission, what measures have been undertaken, problems faced by the government, alternate strategies of malaria control, Bio environmental control, role of community and voluntary organisations in strengthening the control programme. She also stressed the need for goal oriented action plan involving all the functionaries.

Later Dr. Ravikumar briefly shared his experiences regarding malaria and it's control and encouraged the participants to similarly express their views and experiences. The participants shared about the people's perception of malaria, what they do at the village level, medical aid seeking pattern, superstitions and beliefs etc. They also opined the need for creating awareness and emphasized the collaborative efforts of voluntary organisations and Government agencies in reducing the mortality & morbidity due to malaria. Productive Human resources can be conserved by controlling malaria menace. It should be a joint effort of Government and Voluntary Organisations.

Mr. Nagaraj representing the District Malaria Control Officer, described the malaria problem during pre and post-independence periods and emphasised that malaria control programme was one of the National Health Programmes which has resulted in bringing down the incidence of illness among vulnerable groups such as children, young adults and socio-economically backward groups. Further he lamented that since enough health education was not imparted regarding D.D.T spraying and the community participation was poor, there was sudden rise in malaria cases in 18 PHCs of Kolar district. He concluded by proposing the following areas which voluntary Organisations can share the responsibilities -

- To co-operate in the collections of smears,
- Blood testing
- Treatment of disease
- Implementing the Bio-environmental control methods

Dr. Khazi, Medical Officer of Kyasamballi PHC briefed about the systems adopted by government to control malaria and three phases

1. Malaria Eradication Programme of 1958.
2. The objectives of Modified Plan of Operation 1975
   a). Encompassed decreasing the death rate due to malaria.
   b). Bring down the incidence of P. falciparum malaria.
   c). Decreasing the morbidity rate.
3. The objectives of Malaria Action Programme of 1995 are
   a). Identifying the problematic areas.
   b). Establishing (starting) malaria clinics.
   c). To consider health workers of voluntary organisations as voluntary link workers.

Dr. Ethirajulu felt sorry that though we are nearing the 21st century, malaria problem which had been described early in the 7th century was still around. Only 25% of the population are aware of the problem and consequences. He also explained the stages (Hot, Cold, Sweating) and the types (Mixed infections of malaria, severe malaria and Cerebral malaria).

Dr. Krishna Kumari, L.M.O of Robertsonpet narrated the consequences of malaria problem on mother and child.

Dr. K. Ravikumar , C.M.O, Regional Office for Health and Family Welfare , clarified certain doubts and misunderstandings of the participants. He also satisfactorily answered the questions raised by the participants.

During the post-lunch session Dr. Sathyanarayan and Mr. Reddy of Malaria Research Centre explained the work undertaken since last five years in Kolar district regarding the malaria control using bio-environmental control methods.

The Participants were then divided into 4 groups and each group in turn was appraised on the following areas.

1. Microscopic examination and identification of vector mosquitoes and its life stages, mode of transmission of malaria.
2. Life cycle of malaria parasite.
3. Bio-environment control methods emphasizing on release of larvivorous fishes for malaria control.
4. Poster session on malaria control.

The group discussion facilitated the participants to know the details of mode of transmission of malaria, signs and symptoms, control methods, the treatment component and all other aspects of malaria problem. This knowledge was further strengthened through projection of slide shows. **(ANNEXURE-3)**

The day's programme came to an end with the video show which highlighted the following -

- What is malaria ?
- Malaria signs and symptoms
- Mode of transmission
- Life cycle of malaria parasite
- Control measures
- Bio-environmental measures
- Preventive measures
- Treatment
- Resistance level
- Environmental sanitation in rural and urban areas.

On the second day, programme started with a quiz on the exhibition and demonstrations by the MRC team. This was conducted by Ms. Neerajakshi and Mr. Anand to assess the participants comprehension of previous day's afternoon session and clarify the doubts that still persisted among the participants. There was good response to the same.

Dr. Koradhanyamath from Bangalore Medical college and Mr. Reddy from MRC cleared the questions and doubts put forth by participants.

Government perception of malaria control was then shared by Dr. Khazi and Mr. Nagaraj. Continuing, Dr. Khazi detailed that for every 5000 population there is a male and female health worker who will visit the village once in a week. He also stressed the importance of information dissemination, education, and communication strategies imparted into health education and the need to sensitize people that the malaria problem is not an individual problem alone but a community problem and thus the community plays a very important role in controlling malaria. Dr. Khazi also emphasised the significance of taking blood smears, correct address of the patient for prompt treatment (presumptive and radical) of the migrants and labourers, Microscopic examination of blood smear and follow-up of malaria patient. It is essential to take atleast 10 random blood smears out of every100 population. Regular mass blood surveys and identifying problematic areas can make the workers to concentrate more in that area. Use of bio-environmental control measures should be emphasised. Establishment of drug distribution centres in all the problematic areas. He reiterated that there is an urgent need in running malaria clinics i.e. taking blood smears on the spot, on the spot blood examination and on the spot medical treatment. This would go long way in gaining the confidence of the public and at the same time reducing malaria.

Mr. P. Nagaraj, representing district medical officer, Kolar briefed about preventive measures, immediate treatment and reiterated the importance of IEC component and the role of voluntary organisations.

Thereafter the following questions were asked by the participants.

- Will the government supply the mosquito nets ?
- Will the government supply the material for collecting blood smears ?
- Is there a honorarium for interested voluntary health workers?
- What is the role of education, revenue and health departments?

The above questions were satisfactorily answered by Dr. Khazi and Mr. Nagaraj. After a break of 10 minutes the participants were divided into 5 groups to work on an action plan. To facilitate the action plan the following guidelines were given

- To enumerate their operational area & specify the villages/clusters if the villages are too many .

- Staff strength of the institution and how many would be available for malaria control programme ?
- What are the existing sanghas and associations in their operational area & which are the ones facilitated by your organization ?
- What are the various malaria control programmes that would be envisaged by your organization in the ensuing next 6 months ?

There was active participation in each group. The Action Plan that emerged in the 5 groups is enclosed.

The plenary session was presided over by Dr. Koradhanyamath and action plans were then shared with all the participants.

Appreciating the active participation and presentation by the groups, Dr. Koradhanyamath consolidated the group discussions and highlighted the following points.

1. Urgent efforts are needed to Complement & supplement the efforts of Government by Voluntary organisations in malaria control programme.
2. Need to understand the importance of MRC's studies and promoting strategies evolved by them.
3. Need to build effective Referral services.
4. Need for Intra-sectoral co-ordination of various departments.

Immediately after the plenary session Dr. Ravi Narayan shared his views with the participants which are as follows :

- This programme is a result of collective effort & follow-up of the meeting held during January, 1996. at Bangalore.
- Though after a lapse of one year the programme under reference has been materialised by the co-operation of many institutions and active participation of voluntary organisations.
- The attempts made by the Kamasamudram PHC and MRC are very much useful.
- Importance of short term planning (six month programme planning)
- He made them realize that such programmes are the responsibility of individual voluntary organizations and network organization such as VHAK, CHC, CHAI-K, CMAI and MRC etc. would facilitate the work.

- The points that have come out of the group discussion are in black & white. To realise the same, heads of voluntary organisations should consider & implement the programme accordingly and undertake the follow-up action.
- Malaria control programme should be on the agenda of KOVAN meeting.

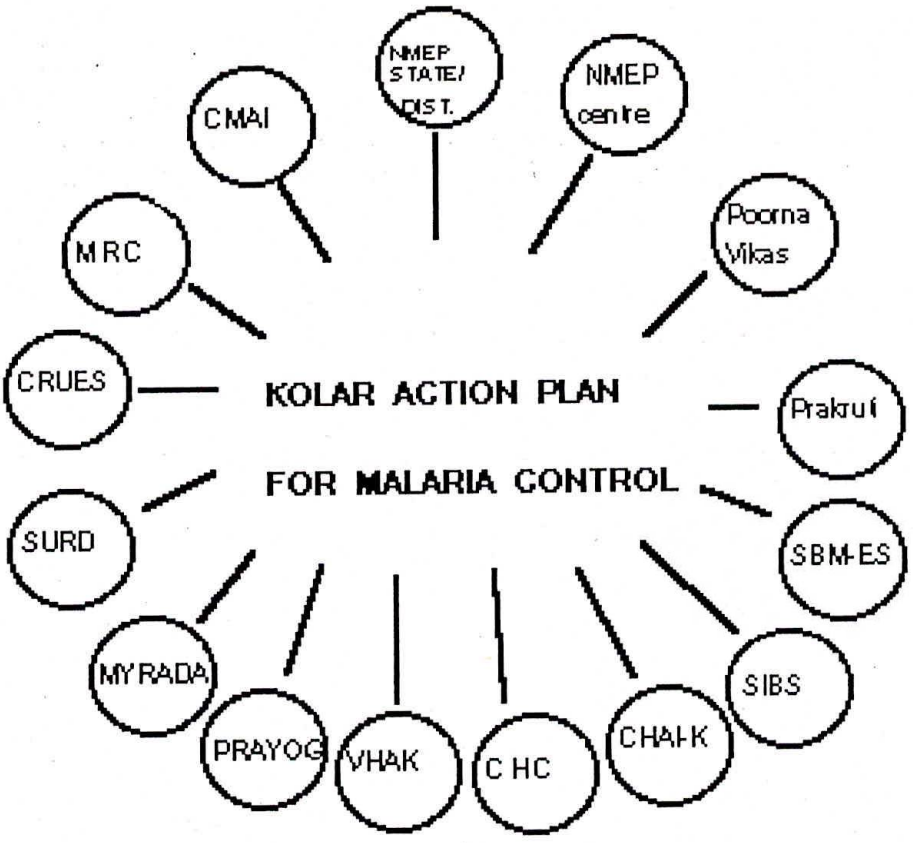
- Under the malaria control programme, the following should be planned, organised and implemented.
  - IEC
  - Identification of cases
    Treatment
  - Bioenvironmental control
  - Intra-sectoral coordination
- Strengthening the existing street theatre group of MYRADA, CRUES, Sunanda organisation by training in effective communication so that they can actively participate in Jathas.
- If the action plans envisaged are successfully accomplished, the same may be replicated elsewhere.
- June has been declared as a malaria month.
- Follow-up programme would be held during July 1997.
- Ms. Neerajakshi clearly stated that network organisation would only act as catalyst & would give the technical support. She welcomed the suggestions.
- Dr. Khazi was confident that the voluntary organisations in Kolar district are active & with their help malaria clinics could be established.
- Mr. Premanand Thambi was of the opinion that voluntary organisation working at the border areas of Kolar district may undertake bioenvironmental control methods as well.
- Mr. Reddy outlined the implications of above suggestions & said such activity involved the permission of DHO of respective district.
- Mr. Ramamurthy suggested that official letters should be sent to all the PHC s which come under malaria problematic area.
- Mr. Nagaraj offered to extend all possible help from district malaria office.

Mr. Premanand Thambi then requested Mr. `Lion' Nanda, a well known citizen of Bangarpet to address the participants. He said that programme should be understood properly ,and we should share the information with others & serve the rural people. He emphasised that we should practice what we preach to others & called upon all to take up the programme immediately.

Vote of thanks was proposed by Mr. Premanand Thambi to one and all who contributed directly & indirectly for the success of the programme.

* * *

ACTION PLAN



Group One:

Group discussion :

a) **S.B.M Education Society** : Working in 12 villages of Mavalu and Sulikunte gram phanchyats. It has a staff of 6 persons. Two of them can be spared for malaria control programme. As other sanghas and associations are not existing in their area of operation, they have established mahila and youth sanghas.

b) **MYRADA** : Working in 150 villages of Kamasamudram and Budikote hobli of Bangarpet Taluk . It has a staff strength of 30 persons and it can spare 15 persons for malaria control programme. Mahatma Gandhi youth Sangha was functioning. MYRADA is working through self help groups, women, men, youth and children sanghas besides mixed sanghas.

c) **Sunanda Maitri Sangha** : Working in 20 villages of T.Gollahalli panchayat. It has a staff of 7 persons and 2 can be spared for malaria control programme. They are working through mahila, young and dry farming farmers sanghas.

d) **Poorna Vikas Samaj** : Working in 30 villages around BEML nagara. 4 out of 8 staff can be spared for malaria control programme. They work through mahila sanghas.

All the above institutions would undertake the following activities.

People's awareness, health education regarding malaria through exhibitions, film shows, and charts. Organizing group discussions and mothers meeting. Distribution of neem sapling and supply of malaria fish.

Propose to take up the activities mentioned below with the help and cooperation of government. Their request from the government was:

1. Participation of government staff and officials in various meetings and activities such as people's awareness programmes and street theaters.
2. Supply of posters.
3. Related handouts.
4. Audio Visual cassettes.
5. Provision for TV and V.C.R
6. Supply of handouts on time before the transmission season to malaria health worker.
7. Provide fish and financial help to set up hatcheries for fish.
8. Provide neem saplings.
9. Meetings/Workshops should be organised from time to time by government officials and networking voluntary organisations.
10. Provide necessary information regarding malaria situation at village level, drugs and slides and prompt examination of slides collected by voluntary organisations.

Representatives :

1. S.B.M Education society : Mr. K.M. Ramaiah, Mr. S.G. Venkatesh
2. MYRADA : Shri. G.Subbarao, Smt. Anita Thomas
3. Sunanda Maitri Sangha : Smt. M. Kalyani

- Encourage and motivate the villagers and other voluntary organisations to actively participate in any Government Programme related to malaria.

Expectations :

- MRC team to educate and give the necessary training to the villagers during their sangha meetings.
- Posters, charts, slides etc., that are available with the government.
- Help the health workers in the distribution of medicines.
- Training regarding blood smear examination for the health workers and supply of necessary material (slides, needles, spirit, cotton, antimalarials etc.).
- Repair of borewells by gram panchayat.
- Assistance in getting the fishes.
- Extend help to health workers by personal meeting and correspondence.

Group Three

Institutions

1. Prayog - Huledenahalli
2. Prakruti - Mulbagal
3. SURD - K.G. F
4. CRUES - Bangarpet

Group members : Ramamurthy, R.K.Gowda,Veera, Paramesh, Farid Khan, Gurumurthy and James

Prayog : 40 villages of Tekal and Masti Hoblis. 6 staff members and all would be spared for malaria control programme. They have mahila, Men, Youth, and children sanghas.

Prakruti : They work in 25 villages of Duggasandra and Bairakur Hoblis. They have 17 staff members of which 13 would work for malaria control programme. They have Mahila and farmers sanghas.

SURD : They work in 150 villages around KGF in Bangarpet Taluk.They have a total of 50 staff members of which they would spare 25 for malaria control programme.

- Collection of data (malaria cases)
- Meet and arrange discussions with health department.
- Create awareness through mahila sanghas in problematic villages.
- Establish mahila sanghas in all the problematic villages.
- Awareness regarding environmental sanitation and safe drinking water.
- Motivate people to construct latrines.

- Awareness regarding bioenvironmental control of malaria using fishes and encourage villagers to do fisiculture.
- Disseminate information regarding malaria through cultural programmes.
- Create awareness among school children.

Expectations :

- Audio-Visual support to create awareness among the mass.
- Posters and charts.
- Training to health workers.
- Free drug distribution.
- Technical help.
- Results of blood smears should be declared immediately.
- Staff of Government health Department to be partners.
- Motivate the Gram Panchayat to involve in malaria control programme.
- Preventive measures to be undertaken in all the problematic areas.

Group Four

CRUES : They work in 30 villages and these are divided into 3 clusters, each comprising of 10 villages (Tattanahalli Ramalingapura, Kuppanahalli and Hulibele) 3 staff members out of 15 would work for malaria control programme.

- Mahila sanghas, youth, children, farmers and co-operative sanghas would be involved in this work.
- Awareness through street theater and cultural programmes.
- Collection of blood smears of all fever cases and act as a link between Govt. Health department and the public.
- Identification of malaria cases through home units and give medical treatment.
- Referral services, preventive measures, school health programmes would be conducted.
- Identifying water collections (wells, ponds , irrigation pits and tanks) in and around problematic villages which are the major sources of malaria mosquitoes and release of malaria fish in these water bodies.
- Cleaning of wells and ponds.
- Preventing mosquito breeding by introducing EPS beads in all the unused wells.
- Health education and examination of floating population.

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- Cleaning of wells and ponds.
- Preventing mosquito breeding by introducing EPS beads in all the unused wells.
- Health education and examination of floating population.

Expectations:

- More co-operation from PHC and Government Hospitals.
- Medicines, slides, needles, cotton, spirit, fish collection equipment , antimalarials and health education material should be supplied.
- Regular health checkup camps should be organised.
- Technical support - immediate (within 15 days) to know about fish collection, blood smear collection .

Group members : D.Venkatesh, Nirmal, Malathi, Lalitha, Shiny and Rosy

Dr. T.S. Sathyanarayan - facilitator.

Group Five

Group - Government officials

Governments expectations form voluntary health organisations

1. Voluntary organisations should volunteer to actively participate in malaria control programmes.
2. Impart health education to population and motivate fever cases to get their blood examined.
3. Organise group discussion in every village and involve the Govt. staff in disseminating information.
4. Distribution of posters and charts pertaining to malaria with the help of Govt. staff.
5. Organise street theaters, Harikathas, Lavnis, songs (folk media) etc.
6. Establishment of fever treatment depot and procure required items (infrastructure) from the government.
7. Establishment of more and more drug distribution centres in villages and collect medicines from the state health department.
8. Educate the people to take 4 AQ tables for all the fever cases (according to age) and encourage them to take 8 AQ tables for all identified malaria cases.
9. Educate the population to destroy the breeding places by free flow of stagnant water, construction of soakage pits and to keep the water tanks closed.
10. Educate and motivate the people to use mosquito nets (bed nets), neem oil, window mesh to prevent and control malaria problem.
11. Education regarding bioenvironmental control of malaria and disseminate the information to people (a) To introduce fishes in irrigation pits, tanks, ponds and monitor their survival, (b) to introduce EPS beads in unused/neglected wells.

The group assured to extend all possible help if above programmes related to malaria control programme are undertaken by voluntary organisations.

Since malaria control programme is one of the National Health Programme, it is the responsibility of every individual and voluntary organisation to participate in the programme which is immediate need of hour. Hence, to effectively implement the programme Government appeals to the voluntary organisations for their co-operation and active involvement.

Annexure I

Participants of the Workshop

Government organisations :

1. Regional Office for Health and Family Welfare- Bangalore
2. Malaria Research Centre - Bangalore
3. PHC- Kamasamudram
4. PHC - Andersonpet
5. PHC - Budikote
6. PHC - Kyasamballi
7. D.M.Os office Kolar
8. General Hospital - Bangarpet
9. Taluk Medical Officer
10. Department of Preventive and Social Medicine; Bangalore Medical College

Voluntary Organisations :

1. RORES - Srinivasapur
2. Prakruti - Seegenahally ; Mulbagal Taluk
3. Poorna Vikas Samaja - BEML nagar; K.G.F
4. SURD - K.G.F
5. MYRADA - Kamasamudram; Bangarpet Taluk
6. Prayog - Huladenahally ; Malur Taluk
7. SIBS - Health and Rural Development Project: Bangarpet
8. CRUES - Bangarpet
9. TREES - K.G.F
10. Sunanda Maitri Sagar- Gollahally; Bangarpet
11. VHAK - Bangalore
12. CHAI-K - Bangalore
13. CHC - Bangalore
14. S.C.O.P - Bangarpet
15. S.B.M Education Society - Bangarpet
16. Sharada Vidya Niketan - Bangarpet

ANNEXURE -2

Demonstrations at the Workshop

Station 1. **Microscopic examination and identification of vector mosquitoes and its life stages, mode of transmission of malaria.** - *Dr. T.S. Sathyanarayan*

Various stages of life cycle of mosquito were shown to the participants. The mode of transmission of malaria, breeding and resting habits of anopheline and culicine mosquitoes were explained. Specific characters of identifying the anophelines and culicines were shown under microscope. There were many queries from the participants regarding malaria transmission. Few misconceptions such as all mosquitoes transmit malaria, and malaria vectors breed in drain water etc., were cleared.

Station 2. **Preparation of thick and thin smears and staining procedure** - - *A. Bapaiah*

Equipment required:

1. Clean glass slides
2. Rectified spirit
3. Pricking needle
4. Cotton
5. Slide box
6. Register
7. Lead pencil
8. Antimalarials (chlorquine)for presumptive treatment.

Method :

a) Preparation of blood smears :-

1. Take third finger of left hand of the patient and hold it in your left hand between thumb and finger at first phallangial joint.
2. Wipe finger tip with cotton swab dipped in spirit solution.
3. Allow the finger to dry.
4. Hold the pricking needle in right hand and prick the finger gently.
5. Allow the blood drop to ooze out.
6. Take clean slide and take three drops of blood one centimeter from the edge of the glass slide, and take another drop of blood one centimeter away from the first drop of blood.
7. Take another clean slide with smooth edge and use it as a spreader.
8. Make thick smear by rotating the plain slide over three drops of blood and thin smear by spreading the one drop of blood at 45^0 angle.

9. Allow the blood to dry
10 Note the serial number of the patient over the thin smear by lead pencil.

b) Staining of thick and thin smears :-

i) Staining the thick smear :

1. After dehaemoglobinisation (by putting few drops of distilled water over thick smear and remove the excess water after one minute and allow the slide to dry)
2. Dip the thick smear in **JSB II** stain (two to three times).
3. Wash the thick smear to remove the extra stain in buffer water by gently dipping it.
4. Keep the thick smear in **JSB I** stain for 45-60 secs.
5. Wash the thick film in buffer water.
6. Allow the slide to dry then examine the slide under oil immersion under 100X compound microscope using blue filter.

ii) Staining the thin smear :

Thin film should be fixed in methyl alcohol (by putting 2 drops of methanol over the thin smear, but care should be taken not to allow the methanol to pass over the thick smear) . Then follow the steps 2-6 of thick smear staining procedure.

Station 3. Bio-environmental control of malaria - *Dr. A.K. Kulshrestha*

Bioenvironmental control methods are those that utilise the naturally occurring biological agents in controlling the disease without endangering the natural balance. In the control of malaria at Kamasamudram PHC area, locally available larvivorous fishes (guppy available at KGF) were released in all the breeding sites such as irrigation wells, draw wells, irrigation pits and temporary ponds that were specifically identified as the breeding sites for malaria vectors. Care should be taken that no garbage or leaves should be thrown in these water bodies as that would hamper the larval feeding by the fishes.

Station 4. Poster session on malaria control. - *C.B. S. Reddy*

Various strategies used in malaria control and their limitations were explained in detail to all the participants. All the participants were highly enthusiastic and freely exchanged their views.

Duties and responsibilities of village Health Guides :

1. The village health guide will make the thick and thin smear on glass slide from all fever cases reporting to him for treatment.
2. Administration of a single dose of antimalaria drug to the patient (recommended dosage) as a presumptive treatment .
3. Keeping a detailed record of individual cases in duplicate along with the case history.
4. Report any death due to fever in the village to the PHC medical officer.
5. Assisting the spray teams during Insecticidal operations by motivating the community to accept the Insecticidal spray.
6. Imparting health education to the community on malaria- the disease, its symptoms and its control for minimising the mosquito breeding and for observing the personal protection methods

In the quiz programme the participants answered well showing that they understood most of what was taught to them.

Annexure - III

Quiz

Questions:

1. What do you mean by malaria ? What are the symptoms of the disease ?
2. What will you do when you are attacked by malaria ?
3. What is the root cause of malaria ?
4. If malaria is spread through mosquito is it culex or Anopheles mosquito that transmits the disease ?
5. Whether both male and female mosquito spread malaria ?
6. Where do malaria mosquitoes breed ?
7. What do male and female mosquitoes eat and Why ?
8. What is the approximate life span of a mosquito ?
9. During its life cycle how many days does a mosquito spend in water ?
10. In what type of waters does the malaria mosquito prefers to breed ?
11. Which method do you suggest to control adult mosquito breeding ?
12. What method do you suggest to control mosquito larvae ?
13. What is the meaning of bioenvironmental control ?
14. Where do you find malaria fishes ?
15. When there is malaria problem if you are given malaria fishes, in where all do you release them ?
16. What precautions would you take before and after release of malaria fishes in mosquito breeding sites ?
17. Are the malaria fishes introduced in water are of edible type ?
18. Where can you put EPS beads (Expanded polystyrene beads) and how does it control mosquito menace ?

Annexure IV

DISTRICT MALARIA CENTRE : KOLAR DISTRICT

* Malaria indices in Kolar District

Year	Pop.	B.S.Ex	Pos.	P.f.	ABER	SPR	API	P.f. %	R.T	Spray
1992	2081532	419308	29586	7269	20.4	7.0	14.4	24.5	97.2	48.7
1993	2211300	395490	23830	3852	17.8	6.0	10.7	16.1	97.3	45.8
1994	2211300	339139	19200	3736	17.4	4.9	8.6	19.1	96.8	33.7
1995	2234545	387213	16563	4154	17.3	4.2	7.4	25.0	96.3	21.7
1996	2290942	413903	18600	4775	18.0	4.4	8.1	25.6	94.5	.....

Taluk - wise malaria problematic PHCs (18 PHCs)

1.	Bangarpet Taluk	-	Kamasamudram	
		-	Budikote	
		-	Adersonpet	
		-	Kyasamballi	4
2.	Malur Taluk	-	Malur	1
3.	Mulbagal Taluk	-	Devarayasamudra	1
4.	Srinivasapura	-	Kooregapally	1
5.	Chintamani	-	Kaiwara	
		-	Batlahally	2
6.	Sidlaghatta	-	Bassettyhalli	
		-	Sadali	2
7.	Chikkaballapura	-	Dibbur	
		-	Peresandra	2
8.	Gudibande	-	Gudibande	1
9.	Bagepally	-	Gulur	
		-	Bagepally	
		-	Pathapalya	
		-	Chelur	4

Vacancy Positions in Kolar district :

S. No	Name of the Post	Sanctioned	Working	vacant
1	Junior Health Asst. (M)	282	199	83
2	Senior Health Asst. (M)	72	30	42
3	Senior Malaria Inspector	4	1	3
4	Health Supervisors	4	1	3
5	J. H. A (F)	552	515	37
6	S. H. A (F)	90	66	24
7	Jr. Lab Technician	77	14	63
8	Sr. Lab Technician	10	2	8
9	Jr. Pharmacist	126	57	69
10	Sr. Pharmacist	18	12	6

12.1.97 to 19.1.97

PHC	MF - 1 (Pos.)	P.v	P.f
Kamasamudram	11	10	1
Kyasambally	20	18	2
Adersonpet	17	12	5
Budikote	2	2	-

* * *

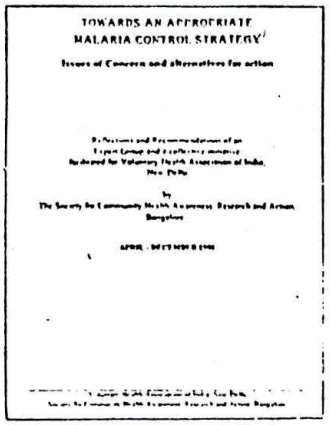
To:

Malaria Expert Group, VHAI
Malaria Reference Group
Study, Reflection Action Group - Karnataka.

A MALARIA MONTH COMMUNICATION
June 1997

Dear Friends,

This newsletter comes to you in the 'Malaria month (June 1997) to keep in touch with all of you and keep you informed about initiatives and developments since the March 7th meeting at VHAI when the Malaria Expert Group (MEG) presented the key findings and recommendations of the MEG Report to policy makers from NMEP, MRC, VCRC.

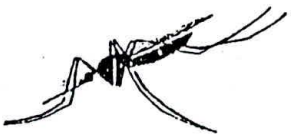

TOWARDS AN APPROPRIATE MALARIA CONTROL STRATEGY

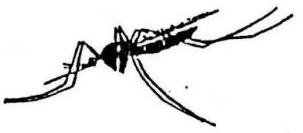
1. MEG REPORT PUBLICATION

The process of publication of this report, to disseminate our findings and recommendations and to lobby for change has been undertaken by VHAI. An executive summary of the report and a report on the 7th March meeting have been incorporated into the publication. This is expected to be out of the press shortly. Write to Dr. Sehgal or Dr. Mira Shiva at VHAI, New Delhi, for further details.

KARNATAKA

2. MEETING WITH VOLUNTARY AGENCIES IN BANGALORE DISTRICT





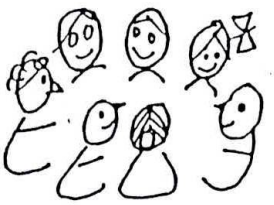
CHC (along with VHAI, CMAI, CHAI-KA, MRC and Regional Office for Health and Family Welfare) organised a days workshop on 22nd March 1997 for all the voluntary agencies and institutions in Bangalore district to explore ways and means to increase their involvement in Malaria control. The chapter of the MEG report on "The Role of Voluntary agencies in Malaria control" was distributed as a background. Dr. Murugendrappa, Joint Director - Malaria & Filaria, Dr. S.K. Ghosh - Officer Incharge, Malaria Research Centre, Bangalore, and Dr. Ravi Kumar of the Regional

Office for Health and Family Welfare were resource persons for the workshop. The participants explored various ideas for the involvement of their institutions in Malaria control (separate report available on request from CHC, Bangalore.)

3. CME IN RATIONAL MALARIA TREATMENT

CHC organised a CME programme for postgraduates from all the medical colleges in Bangalore on 26th May 1997 and one of the themes requested by them was Rational Malaria Treatment. Drs. Cecil Ross (Department of Medicine, St. John's Medical College) and Dr. Ravi Narayan (Coordinator, CHC) covered this topic. The chapters of MEG - 'Towards a Rational Drug Policy for Malaria' and 'The Mefloquin issue' were distributed as background paper.

4. HEALTH COMMUNICATION WORKSHOP AT BANGARPET



Dr. Uma, freelance health trainer who has evolved her own creative method of training grass root health workers through innovative communication methods, games and group activity took a special 3 day session with ANMs and health workers of government and voluntary agencies at Bangarpet in April 1997, in collaboration with VHA-Karnataka. While Malaria was the focus of the training, Dr.Uma's methods can be adapted to different problems and situations.
(For further details write to CHC or Thread - Orissa for copies of her 6 volume training manual (Rs. 600-00) which covers:

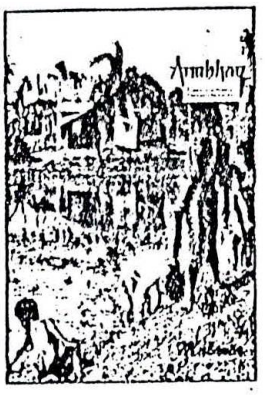
- Volume 1 - Community Organisation and Participation
- Volume 2 - Preschool Education
- Volume 3 - Community Health & Immunisation
- Volume 4 - Nutrition
- Volume 5 - Women and Child
- Volume 6 - Water and Diseases

5. LAB TECHNICIANS ORIENTATION COURSE

As a follow up to the Bangalore district meeting (see 2) and with special reference to improving the Malaria diagnostic skills of Laboratory technicians in the voluntary agencies / hospital network in the State, the first of a series of orientation and skill development training programme was organised for 10 lab technicians from 8 institutions of the voluntary sector at the Regional Office for Health and Family Welfare, Bangalore, particularly at the initiative of Dr. Ravi Kumar of the Regional Office and Dr. Sukant Singh of CMAI. This was a small but meaningful initiative in government-voluntary agency collaboration and we hope there will be many more of such events in the months ahead.

(For a copy of the programme and or a small booklet for lab technicians on Malaria diagnosis in Kannada, write directly to Dr. Ravi Kumar, Chief Medical Officer, Regional Office for Health & Family Welfare, II Floor, 'F' Wing, Kendriya Sadan, Koramangala, Bangalore - 560 034).

6. MALARIA MONTH - JUNE 1997 - PREPARATIONS FOR CELEBRATION



You must have all received a letter from Dr. P.N. Sehgal of VHAI informing you in March 1997 about the decisions of NMEP/Ministry of Health and Family Welfare to designate June 1997 as Malaria Month and also some suggestions for action initiatives. I am sure many of you are involved in such initiatives during this month and we look forward to getting news from you to include in the next occasional newsletter.

In Karnataka, the Directorate of Health constituted a special Committee to plan activities for the Malaria month in which CHC and VHAK were included.

VHAK has also sent a letter to all its members to observe the month through awareness building activities. Our focus has been particularly on Bangarpet Taluk of Kolar District where two workshops held for NGOs in May 1997(orientation) and then June 1997 (planning local action plan) has led to a generation of enthusiasm in this sector and the

potential of increasing government - NGO collaboration.

(Copies of the proceedings of the Planning workshop are available on request from CHC or VHAK Bangalore).

RESURGENCE ??

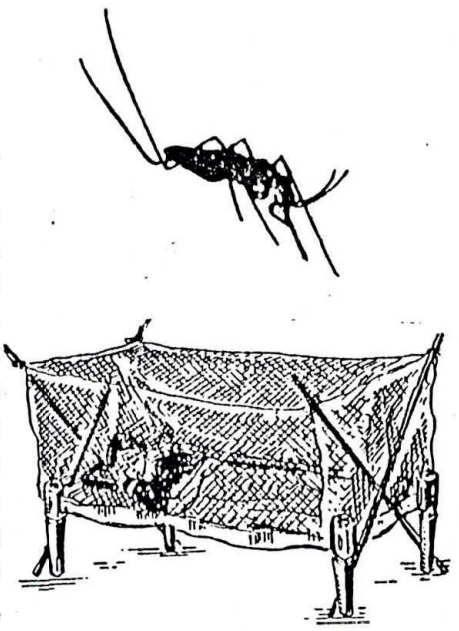
CAUSES ??

7. MEDICO FRIEND CIRCLE PLANNING SESSION ON ANNUAL MEETING ON RESURGENCE OF INFECTIOUS DISEASES.

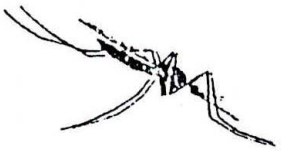
A small group of southern members of medico friend circle organized a day's brainstorming at CHC on 5th April 1997 to explore the various factors that are contributing to the resurgence of infectious diseases in India including Malaria, Dengue, TB and a host of others. The Annual Meeting which is proposed to be organised at Sevagram, Wardha, in December 1997 will explore particularly the socio-epidemiological aspects that are contributing to this resurgence.

(For further particulars and a copy of the perspective document for the meeting, kindly contact Dr. Anand Zachariah, Lecturer, Department of Medicine, Christian Medical College, Vellore - 632 002).

8. THE ITMN WORKSHOP AT BHUBANESHWAR (MARCH 1997)

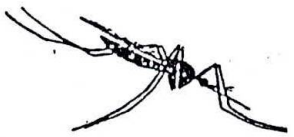


A workshop was organised by ODA/CARE in Bhubaneshwar in mid March to review the experience of the ODA/CARE project trial of promoting the use of Insecticide treated bed nets in Keonjhar District in Orissa. An independent evaluation had been conducted by a CMAI team which was presented at the Workshop. Experiences of MRC in Assam and Maharashtra government of the Mitra programme at Bissamcuttach (Dr. John Oomen's initiative) was also presented. The MEG report chapter on ITMN's was circulated as a background paper (for a copy of the proceedings of the workshop, please write to Ms. Alison Dembo Rath, Health Officer, Project Management Office, Orissa Health and Family Welfare, 57 Forest Park, Bhubaneshwar - 751 009, Orissa.)



ORISSA

9. PLANS FOR MALARIA CONTROL IN ORISSA (RUHSA)



Dr. Abel of RUHSA has written to us about their initiative of planning with NGO partners in Orissa. Broad objectives have been developed and some long term plans in which 'malaria control activities' will be included are being drawn up. 12 NGOs were trained in smear technology. During malaria month, they plan to distribute messages relating to Malaria in Oriya and disseminate them as much as possible through NGOs. Plans to hold one day malaria workshop for NGO personnel in most districts of Orissa are also evolving.

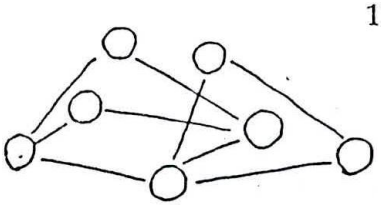
10. INTERNATIONAL MALARIA MEETING AT SECUNDERABAD AND CENTENARY CELEBRATIONS OF RONALD ROSS DISCOVERY (18-22 AUGUST 1997)

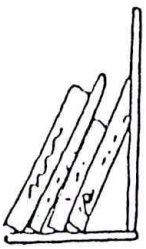
An International Conference on Malaria is being organised from 18-22nd August 1997 at Secunderabad to commemorate the centenary of Ronald Ross's discovery of the Malaria parasite in the female anopheline mosquito. The Conference is expected to have papers on all aspects of malaria. On 20th August, there will be a release of a commemoration stamp, unveiling of a statue of Ross on the lakeside, dedication of a memorial building (which is the renovated laboratory in which the discovery was made) that has been made possible by a partnership between Osmania University, INTACH and British Council. It will be an opportunity for some of us to raise the key issues of concern and suggest alternatives for malaria control from the MEG report and all the evolving action thereafter.

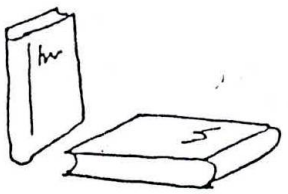
(All those interested to participate or get more details of the Conference should write to Dr. V.P. Sharma, Director, Malaria Research Centre, 22 Sham Nath Marg, Delhi - 110)

If any of you have published a book/booklet/newsletter/journal or article on Malaria

that needs wider circulation, this may be a good opportunity. Perhaps you should write to Dr. V.P. Sharma and explore this possibility further.







11. THE NEXT PUBLICATION FROM THE MEG PROCESS

With the assistance of Dr. Madhukar Pai, a Community Health Physician, a malaria enthusiast, who recently completed his M.D. - Community Medicine from Christian Medical College - Vellore and is presently with Sundaram Medical Foundation in Chennai, we are in the process of editing the next publication arising out of the enthusiastic, original responses received from so many of you to the Malaria Expert Group process we facilitated last year. The publication presently entitled "Malaria in India - Reflections, responses and the quest for alternatives" consists of all the experiential and innovative action oriented articles that have been further edited to highlight a range of ideas and alternatives. The editorial team consists of Madhukar Pai, Dr. C.M. Francis and myself. We are all happily surprised at the continuing enthusiasm and the prompt responses from so many of you to our suggestions for modification of the article or approval of the edited version of the chapters. We have identified a potential source of funds for this publication and we hope that the final manuscript can reach the press by early July 1997.

12. HFM - SPECIAL ISSUE ON MALARIA AND TUBERCULOSIS

The Health for the Millions special issue on Malaria and Tuberculosis has just arrived (Vol. 23 No.2, March-April 1997). It includes articles by Dr. Mira Shiva (Policy concerns), Dr. P.N. Sehgal (Executive summary of MEG report). A brief report on Malaria outbreak in Mewat and a book review of 'Netgain' an IDRC/WHO publication.

(If you have not already received a copy, please write to the Editor, Health For the Millions, Voluntary Health Association of India, 40 Institutional Area, South of IIT, New Delhi - 110 016.)

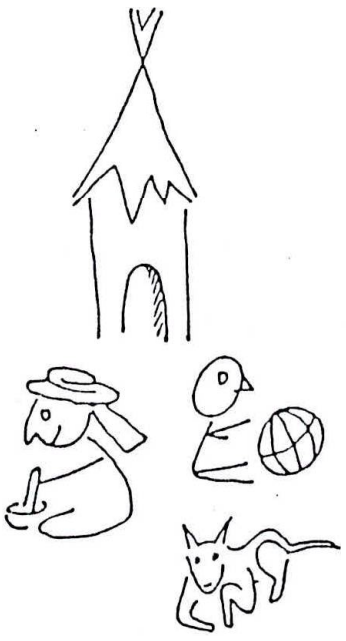
13. HEALTH ACTION, SPECIAL ISSUE ON PEOPLE -VS- MALARIA (Vol.10, No.6 June 97)

has just been released. It consists of a cover story Malaria Control : People -Vs- Malaria that outlines the recommendations of the MEG, an interview that emphasises that 'Topdown solutions won't do', a review of the bio environmental option, a case report from the Mitra People's Programme for Malaria in Bissamcuttack, Orissa and an overview of Herbal remedies for Malaria.

(If you have not seen a copy, please write to the Editor / Circulation Manager, Health Action, Post Box No.2153, 157/6 Staff Road, Gunrock Enclave, Secunderabad - 500 003).

14. CLEARING HOUSE FOR MALARIA RELATED PUBLICATION

CHC continues to receive Malaria related publications from all over the country and the world. A list of recent arrivals is enclosed (seeAppendix A). For further details or copies write to the authors/publisher directly, or to CHC for further information. Please also post us any publication, papers, handouts, that you produce during your continuing involvement in Malaria control so that we can include them in future communication.



15. TOWARDS AN ALTERNATIVE NMEP

Prof. N.S. Deodhar, Retired Director of All India Institute of Hygiene and Public Health, Calcutta, has written to us in response to the receipt of the MEG report with some provocative and valuable suggestions based on years of experience in Public Health in India . We circulate his comments (see Appendix B)to stimulate a discussion on his suggestions. Please send your response to him (Dr. N.S. Deodhar, Consultant, Health Science Services, Management and Research, 134/1/20, Banar Road, Aundh, Pune - 411 007, Maharashtra) with a copy to CHC.

We may use the opportunity of the medico friend circle Annual Meeting to work on a more definitive alternative based on his suggestions as the next step of the collective process.

Finally, you must have read recently that World Bank has okayed a loan of around 163 million dollars for the Malaria programme in India. Being a loan, it is even more important that the funds obtained are used for the most meaningful, relevant and effective strategies for malaria control, in areas of greatest need. The NMEP project report "Strengthening Malaria Control in India" already outlines the main framework of this World Bank supported project. All of us need to be involved in whatever way we can organise our involvement to make sure that the project is effective - be it through collaboration as health activist, awareness builder, issue raiser, alternative trainer, researcher, policy maker or grass roots health action initiator. Through our efforts, we could help to evolve an alternative NMEP that works. Every small effort will be a contribution to the grand strategy of Malaria Control that is urgently required. We would like to be involved and informed about all that you and your network of associates do. The MEG report and each of its chapter can be freely used in all your actions. The published version from VHAI will also be available soon to help in your efforts.

We hope that through this Newsletter we can do our little bit to keep you all in touch with each other.

With best wishes from the CHC team and hoping our solidarity in health action including malaria control will grow.

Yours sincerely,

Ravi Narayan

Ravi Narayan,
Coordinator.

APPENDIX - A

Publications on Malaria received by CHC in recent months

1. Souvenir and Abstracts of Third National Seminar on Malaria and other Tropical Diseases (UGC/Bangalore University), February 1997
   (for a copy, write to Prof. N.R. Shetty, Society for Applied Genetics, Centre for Applied Genetics, Gnana Bharathi, Bangalore University, Bangalore - 560 056)

2. Health Action Special issue People -Vs- Malaria, Vol.10, No.6, June 1997 (Rs. 15/-)

3. Health for the Millions Special issue on Malaria and Tuberculosis, Vol.23, No.2, March-April 1997.

4. Public Health Technical Information Series No.12, by Bayer AG Germany. Main theme : Use of impregnated bednets for Malaria Control.

5. An AHRTAG/PATH directory of Insecticide Treated Nets for Malaria Control for Subsaharan Africa (suppliers of insecticide mosquito nets), AHRTAG, London, 1997.

6. Muraleedharan V.R. & Veeraraghavan D., (1992) - Anti Malaria Policy in the Madras Presidency:An overview of the early decades of the Twentieth Century. Medical History, 1992, 36, 290-305.

7. Hamare Chitti Apke Naam (HCAN) - A newsletter for Health workers - special issue on Malaria, July-September 1996 (Hindi version). Write to VHAI for a copy. Or to VHAK- Bangalore, for a copy of the Kannada version.

8. 'Malaria' - an Anubhav series publication (experiences in Health and Community Development) from VHAI, New Delhi. Write to VHAI for a copy.

9. Malaria Control - capacity building in community based NGOs / workers - a booklet in English/Hindi from VHAI, New Delhi.

10. Malaria Control - An attempt - a booklet from NMEP/DGHS, Ministry of Health & Family Welfare (Government of India), 1996.

11. Videos from Malaria Research Centre, Delhi for Health Education.

    (The topics include: (a) Fighting Malaria; (b) Insecticide Impregnated Bed Nets for Malaria Control; (c) Man Made Malaria; (d) Community Participation in Malaria; (e) Life Cycle of Malaria Parasite; (f) Global Malaria Control - An approach Plan; (g) The Microscope; (h) How to make a blood smear & stain for Malaria Parasite; (i) How to treat Uncomplicated Malaria; (j) Cerebral Malaria; (k) Malaria in Pregnancy; (l) Laboratory Diagnosis of Malaria; (m) Malaria - Spread the Knowledge).

Appendix B

Towards an Alternative NMEP

. . . . . I feel that it is essential for some of us to meet and deliberate on important and critical issues. Just one illustration. What is the role of "surveillance" in the current situation? Always one desires to go back to old days surveillance. NMEP goal of eradication is no more. The old surveillance was designed to detect each and every case of malaria and treat it radically. The aim was to wipe out the parasite plasmodia - thing that we did to smallpox virus. We wanted to reach a stage when we might have the vector mosquitoes, but no parasite, and malaria is gone. Incidence figures, we got, but as a bye-product. Coverage was near complete in mid-1965. Now nothing holds good. MPW approach and integration cannot be taken back. In fact, it will be a great mistake, a blunder, strategically and epidemiologically.

There are two things we have to attain. One is to treat cases, reduce morbidity and eliminate malaria deaths. Secondly, prevent epidemic outbreaks, and control malaria transmission so that the disease loses its public health importance. In other words, learn to live with malaria at a very low ebb. If so, what do we do?

a) Separate out "curative" management from the "control" operations.
b) Fully integrate the services/programme into general health services.
c) We can easily work out "curative" portion (with the above objectives), fully involving the people, panchayats, LSGs, NGOs and decentralization of operations.
d) "Control" components need to be considered afresh. We have to give up once for all, control of adult vectors with sole emphasis on insecticides. In fact, we have to shift from malaria control to vector control programme. We have to largely depend on the engineering interventions with cumulative impact, and the control of breeding has to be the main thrust. We have the technology.
e) Strategy and preparedness for early detection and abatement of malaria outbreaks and epidemics.
f) IEC drive, integrated, to inform the people on prevention and minimizing man-mosquito contact.

. . . . . We have to be specific and on focus. Patch work will not do.

Prof. N. S. Deodhar.