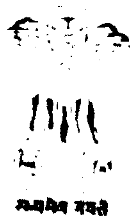
P. A. C. No. 311

PUBLIC ACCOUNTS COMMITTEE
(1971-72)

(FIFTH LOK SABHA)

TWENTY-FIRST REPORT

[Action taken by Government on the recommendations of the Public Accounts Committee contained in their 101st Report (Fourth Lok Sabha) relating to National Malaria Eradication Programme (Ministry of Health, Family Planning, Works, Housing and Urban Development Department of Health)].



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NEW DELHI

August, 1971/Bhadra 1893 (Saka)

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PUBLIC ACCOUNTS COMMITTEE
(1971-72)

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Shri Era Sezhiyan

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3. Shrimati Mukul Banerji
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22. Shri Sheel Bhadra Yajee

SECRETARIAT

Shri B. B. Tewari—*Deputy Secretary.*
Shri T. R. Krishnamachari—*Under Secretary.*

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*Declared elected to the Committee on 3rd August, 1971 *vice* Shri Niranjan Varma, resigned.

INTRODUCTION

I, the Chairman of the Public Accounts Committee, as authorised by the Committee, do present on their behalf this Twenty-first Report on the Action Taken by Government on the recommendations of the Public Accounts Committee contained in their Hundred and First Report (Fourth Lok Sabha) relating to National Malaria Eradication Programme.

2. On the 8th July, 1971, an "Action Taken" Sub-Committee was appointed to scrutinise the replies received from Government in pursuance of the recommendations made by the Committee in their earlier Reports. The Sub-Committee was constituted with the following Members:

1. Shri B. S. Murthy—*Convener*.

2. Shri Bhagwat Jha Azad
3. Shri Ram Sahai Pandey
4. Shri C. C. Desai
5. Shri Thillai Villalan
6. Shri Shyam Lal Yadav

} *Members*.

3. The Action Taken Notes furnished by the Government were considered by the Action Taken Sub-Committee of the Public Accounts Committee (1970-71) at their sitting held on the 17th November, 1970. Consequent on the dissolution of the Lok Sabha on the 27th December, 1970, the Public Accounts Committee ceased to exist from that date. The Action Taken Sub-Committee of the Public Accounts Committee (1971-72) considered and adopted this Report at their sitting held on the 4th August, 1971 based on the suggestions of the Sub-Committee of PAC (1970-71). The Report was finally adopted by the Public Accounts Committee on the 31st August, 1971.

4. For facility of reference the main conclusions/recommendations of the Committee have been printed in thick type in the body of the Report. A statement showing the summary of the main recommendations/observations of the Committee is appended to the Report (Appendix).

5. The Committee place on record their appreciation of the commendable work done by the Convener and the Members of the Action

Taken Sub-Committee (1970-71) in considering the Action Taken notes and offering suggestions for this Report which could not be finalised by them because of the sudden dissolution of the Fourth Lok Sabha.

6. The Committee place on record their appreciation of the assistance rendered to them in this matter by the Comptroller and Auditor General of India.

NEW DELHI;
August 31, 1971.
Bhadra 9, 1893 (*Saka*).

ERA SEZHIYAN,
Chairman,
Public Accounts Committee.

CHAPTER I

REPORT

This Report deals with action taken by Government on the recommendations contained in the Hundred and First Report of the Public Accounts Committee (Fourth Lok Sabha) on Audit Report (Civil), 1969 relating to National Malaria Eradication Programme (Ministry of Health, Family Planning, Works Housing and Urban Development —Department of Health), which was presented to the House on 31st March, 1970.

1.2. Replies to all the 33 recommendations contained in the Report have been received from Government.

1.3. The Action Taken Notes|Statements on the recommendations| observations of the Committee contained in the Report have been categorised under the following heads:—

(i) Recommendations/observations that have been accepted by Government.

S. Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32 and 33.

(ii) Recommendations/observations which the Committee do not desire to pursue in view of the replies of Government.

S. Nos. 15 and 17.

(iii) Recommendations/observations replies to which have not been accepted by the Committee and which require reiteration.

Nil.

(iv) Recommendations Observations in respect of which Government have furnished interim replies.

S. Nos. 13 and 14.

1.4. The Committee hope that final replies in regard to recommendations/observations to which interim replies have been furnished will be submitted to them expeditiously after getting them vetted by Audit.

1.5. The Committee will now deal with action taken by Government on some of the recommendations/observations.

Set-back suffered by National Malaria Eradication Programme—Paragraphs 1, 21, 1, 22, 1.23, 1.88 and 1.89 (*Sl. Nos.* 1, 2, 3, 31 *and* **32**).

1.6. Commenting on the set-back suffered by the National Malaria Eradication Programme, the Committee made the following observations in paragraphs 1.21, 1.22, 1.23, 1.88 and 1.89 of their 101st Report:—

"1.21. The Committee are perturbed over the setback suffered by the National Malaria Eradication Programme. The Scheme, which was started in 1958-59, made satisfactory progress till 1963-64, but lost ground thereafter. The figures of positive cases detected from an examination of blood smears reflect this position. The number of cases which was 87,306 in 1963, rose to 1,12,942 in 1964, with a marginal fall in 1965 when it was 1,00,185. The number rose again to 1,48,156 in 1966 and nearly doubled to 2,78,621 in 1967, with no appreciable reduction in a subsequent year. As a result, the programme underwent a fairly drastic re-phasing in 10 out of 17 States. 71.30 Malaria Eradication Units operating in these States and constituting well over a fourth of the total number of units were switched back to the 'attack' or preliminary phase of the programme from the 'consolidation' and 'maintenance' phases. What a major set-back this was would be apparent from the fact that the scheme which Government had expected to complete by 1968-69 would now be prolonged till 1974-75. The outlay for completion of the scheme during the 4th Plan period has in consequence increased from Rs 19.21 crores, estimated in 1966, to Rs. 91.74 crores."

"1.22. In the Committee's opinion, a number of deficiencies in the programme contributed to this setback. The principal contributory factors were:

(i) Patchy and poor spraying, resulting in what a team of T.C.M. experts had in 1960, characterised as "less than complete coverage of many villages and less-than-complete treatment of sprayable surfaces.'

(ii) Failure to develop on the required scale the surveillance or vigilance mechanism, which could have helped in the timely detection of persistence or recrudescence of malaria.

(iii) Failure to provide adequate diagnostic facilities and rural health services to cope with the deteriorating epidemiological situation."

"1.23. A number of agencies who appraised the working of the scheme at various stages had drawn Government's attention to these and other weak points in the scheme. A team of T.C.M. consultants who reviewed the working of the scheme as early as 1960 reported that 'the future of malaria eradication in India is dependent almost entirely on the ability of the individual spraymen and the individual surveillance worker to carry out his duties in an acceptable manner and to his supervisors to provide the leadership and directions of eradication activities'. Subsequent appraisals of selected areas in the country which were done annually had also warned Government of 'unsatisfactory spraying', 'unstable surveillance', 'inadequate facilities', and 'lack of epidemiological investigation', to cite just a few of the drawbacks mentioned by these teams. In spite of those repeated warnings, there was not enough appreciation either on the part of the State Government, who were implementing the scheme, or on the part of the Government of India, who acted as the co-ordinating agency, of the need for rectifying the deficiencies in the programme and implementing it in a purposeful manner."

"1.88. The findings in this report will show that, while the scheme progressed satisfactorily till 1963-64, set-backs have occurred since then with focal outbreaks of malaria in a number of States. In the result the completion of the programme has been delayed by over six years. The outlay for completion of the scheme has in consequence undergone an enhancement from Rs. 19.21 crores to Rs. 91.74 crores."

"1.89. Though this situation has been brought about by a variety of reasons, the Principal, contributory factors that affected the progress of the operations were these:—

(i) Failure to ensure that spraying coverage was total, complete, sufficient and regular.

(ii) Absence of timely provision of staff at certain levels, particularly at diagnostic centres and of insecticides and anti-malaria drugs.

(iii) Inadequate emphasis on surveillance techniques.

(iv) Failure to develop a sound health infrastructure in the field to take over the Scheme at the consolidation stage."

1.7. In a note dated 4-1-1971 the Ministry of Health, Family Planning, Works, Housing and Urban Development (Department of Health) have offered the following c[illegible]nts on the foregoing observations:—

"1.21. It is true that the National Malaria Eradication Programme made satisfactory progress upto 1963-64. Focal outbreaks started in 1964 resulting in reversions of 11.59 units areas in 1965. Subsequently, focal outbreaks extended further and during 1966 and 1967, 16.66 and 23.95 unit areas were temporarily reverted, respectively. The population involved in such temporary reversions were 12, 17 and 31.80 million during 1965, 1966 and 1967, respectively. These reversions were, however, not reflected in phasing of the programme and the additional requirements of funds and supplies were met out of sanctioned budget allotment of National Malaria Eradication Programme by internal adjustment. This was not effective as would be evident from the fact that there had been further spread of the focal outbreaks. This necessitated realistic rephasing of the programme during 1968-69. In an attempt to realistically rephase the programme, 71.385 unit areas were reverted to attack phase from consolidation and maintenance phases. This realistic rephasing was done with a view to giving logistic and budget support to the programme and to checking further spread of focal outbreaks. The bulk of these reversions (67 per cent) was from 3 States namely Gujarat, Madhya Pradesh and Rajasthan only and another 27 per cent was contributed by the States of Maharashtra, Uttar Pradesh, Orissa and Bihar bordering these three States. Thus, 94 per cent of the total reversions were from these 7 States.

It was possible to halt the focal outbreaks and there was no further spread. This stands supported by the fact that during the year 1967, 86 per cent of the total cases in the country were from these seven States which subsequently dropped down to 76 and 74 per cent, during the years 1968, 1969 respectively. In all these States there had been decline in the incidence during 1969 as compared to that in 1968 except in Gujarat and Maharashtra States where the rising cases were due to a large number of cases being

detected in Bulsar & Palghar units due to vectors developing resistance to DDT and the operations with a substitute insecticide (malathion) which had to be suspended on account of its toxic effect on the workers. This insecticide in the form of emulsion concentrate has been in use in many countries of the world with no untoward symptom. This was used in consultation with the World Health Organisation. The toxic symptoms were because of the workers not following rigidly the protective measures required to be taken. The use of emulsion concentrate is however, being replaced by Malathion W.D.P.

To cite an example, the trend of decline in the positive cases in the areas reverted to attack from maintenance phase in U.P. is as under:—

No. of districts involved	Population involved in Million	Total No. of cases 1967	1968	1969
12	6·81	3284	1947	337

From the above tabe, it would be seen that during the year 1969 there had been reduction by about 90 per cent compared to the incidence of the disease in 1967. It is to be expected that most of these areas would qualify for passing into their original phase of maintenance after internal assessment during early 1971. Initially National Malaria Eradication Programme was envisaged to be completed by end of 3rd Plan period, thereafter the completion target was revised from time to time and target year for completion was changed over to 1967-68, then to 1970 and now to 1975-76. Had this rephasing not been effected, it was feared the completion target would have got further extended because there would have been continued focal outbreaks hardly possible to check due to the absence of realistic logistic and budget support to the programme. This could have ultimately led to wide-spread epidemic in the country as had happened in Ceylon in recent past due to similar reasons and in several other countries.

The provision of Rs. 19.21 crores as estimated in 1966 for the 4th Five Year Plan period is considered to be hardly realistic in the sense that the entire amount was not even sufficient for two years *viz.* 1966-67 & 1967-68. But for the

realistic rephasing of the programme as undertaken in 1968-69, the outlay for the completion of programme could have been much more than what has been estimated now."

"Paragraph 1.22. The number of deficiencies which brought about the set-back in the programme as enumerated by the Committee have been and are being looked into and all possible measures are being taken to remedy the defects.

Efforts have been made for placing advance indents for imports from abroad of insecticides to enable the supplies to reach the country in time. The proper supervision of the X-ray operation and necessary health education measures are also being geared up.

As for improvement in the surveillance and vigilance machinery in the 4th Plan, one worker for 10,000 population or 35 sq. miles area has been recommended for approval for surveillance operations. In the 4th Plan there is a provision for one worker for 10,000 population but now the new proposal has delineated the areas as well. Regarding these vigilance operations, the basic health services have been made 100 per cent centrally sponsored for strengthening the peripheral staff by supplying additional workers at the rate of one worker for 10,000 population and one Inspector for such workers. The vigilance is entirely the responsibility of the States and with the Centrally sponsored assistance, this would also improve."

"Paragraph 1.23. The Government of India were fully seized of the situation as recommended by the T.C.M. Between 1966 and 1967 all efforts were made to improve the work of the individuals in the field by constant visits of the staff from the State Malariologists office, Regional Offices and the National Malaria Eradication Programme Directorate. From 1962 onwards, annual independent appraisal of the programme in the various States was undertaken. The recommendations of the Appraisal Teams were communicated to the States by the Ministry of Health, F.P., W.H. & Urban Development for necessary implementation. However, in order to get further insight of the lacunae in the programme, the Government of India had appointed a Special Committee

(Madhok Committee) in the year 1967-68 who have reviewed the working of the programme and recommended measures for improvement. The recommendations of the Committee have since been considered for implementation. Further the persistent transmission areas in about 40 unit areas, distributed over 12 States and 6 Union Territories, contributed over 50 per cent of the total cases recorded in 1969. These areas in spite of over 11 to 17 years of spray and about 8 years of surveillance, could not progress to the next phase of the operations *i.e.* Consolidation phase. In order to ascertain the reasons of persistent transmission in these areas as also to indicate the possibilities or otherwise of eradicating malaria from such areas, evaluation in depth is being arranged with assistance of USAID and WHO experts during 1970-71. This team will make detailed studies of various reasons for persistent transmission, ascertaining feasibility or otherwise of controlling malaria effectively and recommend measures to eradicate malaria if it is possible. As such, it would be seen that the Government of India appreciated the need for rectifying the deficiencies in the programme and for implementing it in a purposeful manner.

It may, however, be indicated that the execution of the Programme rests with the States who are constantly advised by the Regional Coordinating Organisation and N.M.E.P. Directorate to enhance the tempo of activities in order to complete the programme by 1975-76, as scheduled. The programme is also annually reviewed in the Central Council of Health meeting and States lagging behind are requested to gear up their activities.

Moreover, it is required to be clearly understood that in a biological programme like this where men, mosquitoes and parasites are involved, the time limit is provisional and cannot be precise for various reasons."

"Paragraph 1.88. This note has been explained against serial No. 1 and paragraph 1.21 of the report. The total outlay for this programme during the 4th Five Year Plan as now agreed to, is Rs. 72.20 crores."

"Paragraph 1.89. (i) Instructions have been issued to all the States to maintain records of the spray room-wise and not house-wise and the supervisors have been requested that whenever they visit the field, they should work out the

percentage of surface on the basis of the rooms sprayed and bring to the notice of the State authorities, if there are any deficiencies. Moreover, the supply of insecticides per unit has been raised from 90 tons to 110 tons of 75 per cent DDT. Efforts are being made to ensure the supply in time.

(ii) The concurrent supervision of the programme is being carried out by the Director, NMEP and the RCO staff by visiting field operations as frequently as possible in different States. During their visit, they also take note of the vacant posts and make a report to the State authorities to fill the vacancies urgently. The NMEP Headquarters also have chalked out a proforma to get regular information of the vacant posts of the programme in each State and necessary action is taken, as soon as such reports are received.

(iii) Both active and passive surveillance are checked in the field and whenever these are not upto the mark the attention of the authorities is invited by pointed out the missed visits of the surveillance workers to the houses.

(iv) Ample emphasis has been laid on the necessity of adequate basic health services on the ground for taking over the responsibility of the maintenance phase. In this respect, in the 4th Plan, the strengthening of the peripheral staff by employing additional staff has now been made 100 per cent centrally sponsored. With this step, the basic health services in areas in maintenance phase of malaria will be staffed adequately in due course. Further, it has been made clear to the States that for units, which would be ripe for entry into maintenance phase, if States fail to effect that entry no Central assistance will be provided for such units and the State would bear the entire cost for keeping it in consolidation phase. This step was taken to stimulate the States to lay the basic health services on the ground in time before the entry of the units into maintenance."

1.8. The Committee note that Government are taking steps to rectify the deficiencies in the National Malaria Eradication Programme. They trust that closer co-ordination will be maintained

with State Governments who are the executing agency and hope that the Programme will be completed by 1975-76 according to the revised schedule without any further set-back.

1.9. The Committee would also like to emphasise the need for preparation of Budget estimates for the National Malaria Eradication Programme realistically in future so that there is no set-back to the programme for want of adequate funds.

Delay in supplies of insecticides—Paragraph 1.50 (*S. No.* 13)

1.10. Commenting on the delay in the supplies of insecticides, the Committee made the following observations in paragraph 1.50 of the Report:

> "The data furnished to the Committee show that every year since 1964-65 it took anything from 7 months to 2 years for supplies of insecticides to materialise, after proposals for their purchase were mooted. It is a matter of regret that it took Government such a long time to become alive to this situation and start the procedure of placing advance orders. The Committee hope that adequate care would be taken to ensure that "administrative bottlenecks" do not interfere with the timely supply of insecticides to the operational areas. As pointed out by the WHO Expert Committee whenever a country decides to undertake malaria eradication. funds should be *"budgeted for the whole programme, available at the planned date and be managed with necessary flexibiity."* The Committee would also like it to be considered whether buffer stocks of insecticides would help to ease any difficulty caused by unexpected delays in transit of suplies.

1.11. In their note dated 4.1.1971, the Department of Health replied as under:—

> "It has been decided that even the indents for insecticides and drugs to be procured indigenously against 1971-72 be placed in advance on DGS&D in 1970.
>
> The suggestion of the P.A.C. that the funds to be budgeted for the whole programme and available at the planned date be managed with the necessary flexibility has been noted and the matter is being referred to the Finance for their concurrence.

The Government has considered the question of maintaining buffer stocks to take care of any delays in the receipt of the essential supplies of insecticide. Such a maintenance of buffer stock would certainly ease the difficulties caused by delay in receipt of supplies."

1.12. The Committee note that the suggestion that the funds should be "budgeted for the whole programme, available at the planned date and be managed with necessary flexibility" is being examined in consultation with the Ministry of Finance. The Committee desire that an early decision should be taken in the matter and that they should be informed of it.

Increasing establishing indigenous production of insecticides anti-malarial drugs—Paragraph 1.51 (*S. No.* 14)

1.13. In paragraph 1.51, the Committee made the following observations regarding the requirements of insecticides and anti-malarial drugs for the implementation of the Programme and their availability indigenously:

"The information furnished by Government to the Committee shows that the country has, between 1964-65 and 1968-69, spent Rs. 1,067 lakhs on imports of insecticides and anti-malarial drugs. The projected requirements of insecticides over the five years ending 1972-73 is 58,524 tons, out of which only 25,464 tons, *i.e.* less than half is expected to be indigenously available. Similarly, against the requirements of 720 million tablets of chloroquine/amodiaquine over the next five years indigenous procurement on present indications would be possible only to the extent of 50 million tablets a year, there being no indigenous production to meet the estimated demand of 70 million tablets of primaquine. This situation underlines the urgent need for Ministry of Health, in consultation with Directorate General of Technical Development, to explore the scope for increasing/establishing indigenous production of insecticides and anti-malarial drugs. The Committee would like a plan of action to be drawn up for this purpose immediately."

1.14. In their note dated 4.1.1971, the Department of Health stated:

"Further increase in the indigenous production of insecticides (DDT) is under consideration of Ministry of Petroleum

and Chemicals and DGTD and it is understood there is a proposal to start a new plant in Bombay for producing 700 tons of DDT.

For drawing a plan of action for increasing indigenous production of anti-malarials, a meeting was held between the officers of NMEP Directorate, Drugs Controller, DGS & D on 13.1.70. The DGS&D indicated that 54 million chloroquine/amodiaquine tablets could only be made available through indigenous sources and for the balance of 66 million tablets necessary foreign exchange has to be provided to the firms for importing ingredients."

1.15. The Committee note that the question of further increase in the indigenous production of insecticides is under the consideration of the Ministry of Petroleum and Chemicals and DGTD. The Committee desire that serious attention should be paid to step up production of both insecticides and anti-malarial drugs in order to attain self-sufficiency at an early date.

Surveillance machinery—Paragraph 1.67 (*S. No.* 20)

1.16. With regard to the cost of the present surveillance machinery for detection of malaria cases the Committee had made the following obervations in paragraph 1.67 of the Report:—

"1.67. From the information furnished by Government the Committee gather the impresion that the present surveillance machinery for detection of malaria cases is 'very expensive'. The Committee would like Government seriously to undertake research studies to simplify methods of detection and bring down the cost in this regard."

1.17. In a reply dated 4-1-1971, the Department of Health have stated as follows:

"As for the cost of surveillance machinery, this is an essential component of eradication as so far no other way has been found to substitute this method of detection of case in the developing countries. However, under National Malaria Eradication Programme—India, the cost has been kept at a minimum by allotting one house visitor for 10000 or more population. In fact one worker should be given not more than 5000 population and in certain areas even less.

The W.H.O. in their research programmes has already included such studies for evolving cheaper methods with no success yet."

1.18. The Committee hope that as a result of the studies undertaken by the WHO for inter alia **evolving cheaper methods, necessary economy would be effected in the cost of the present surveillance machinery consistent with its efficiency. The Committee desire that in the meantime the expenditure of surveillance machinery should be kept under constant review.**

Deployment of vehicles—Paragraph 1.74 (*S. No.* 23).

1.19. Regarding deployment of vehicles placed at the disposal of the States for the implementation of the National Malaria Eradication Programme, the Committee made the following observations in paragraph 1.74 of the Report:

"In their 42nd Report (Third Lok Sabha) as well as their 71st Report (Fourth Lok Sabha), the Committee have drawn attention to the unsatisfactory position regarding the deployment of vehicles placed at the disposal of the States for the implementation of the National Malaria Eradication Programme. The Committee had drawn attention to the fact that nearly 50 percent of the existing fleet of 2,653 vehicles was off the road. Basically the very poor quality of maintenance of vehicles fleet has strained their efficiency and life and interfered with their optimum utilisation. The Committee note that pursuant to their suggestions in their earlier reports, a Committee has been set up to examine how many vehicles out of the existing fleet could be rendered road-worthy. The Committee hope that this examination would be speedily completed and that, before any proposal for augmentation of the fleet is approved, the scope for pressing into service the maximum number of vehicles out of the existing fleet would be carefully examined, taking into account the economics of their repairs.

1.20. The Department of Health in their note dated 4.1.1971 replied as under:

"From the ages of the vehicles, it may be seen that the finest maintenance service cannot keep the vehicles road-worthy for such a long time as the fleet under the National Malaria

Eradication Programme organisation on rough roads in rural areas. The ages of the vehicles is as under:

No. of vehicles	Age in years
1813	11—16
837	8—10
3	4

Total—2653

The States have been asked to form Condemnation Board under M.O.H. letter F. 8-9/67-C&CD dated September, 19 and October 8, 1969.

The Board comprises State Malariologist, State Health Transport Officer, and the Regional Deputy Director, National Malaria Eradication Programme. So far only one State Committee has surveyed vehicles. However, they are being expedited to carry out the survey expeditiously and the N.M.E.P. Directorate is pursuing the matter vigorously. The full augmentation of the fleet will be done after surveying the fleet already in existence.

Part augmentation of vehicles is being made keeping in view the minimum requirements, and the availability of funds in areas with acute transport position in attack and consolidation phase units."

1.21. The Committee note that more than two-third of the total number of 2653 vehicles placed at the disposal of the States for the implementation of the National Malaria Eradication Programme are 11 to 16 years old. The Committee would urge Government to impress upon the States the necessity to complete the survey of the vehicles expeditiously so that action could be taken thereafter to discard the vehicles which have outlived their life and replace them by new vehicles early.

CHAPTER II

RECOMMENDATIONS OBSERVATIONS THAT HAVE BEEN ACCEPTED BY GOVERNMENT

Recommendation

The Committee are perturbed over the setback suffered by the National Malaria Eradication Programme. The Scheme, which was started in 1958-59 made satisfactory progress till 1963-64, but lost ground thereafter. The figures of positive cases detected from an examination of blood smears reflect this position. The number of cases which was 87,306 in 1963, rose to 1,12,942 in 1964, with a marginal fall in 1965 when it was 1,00,185. The number rose again to 1,48,156 in 1966 and nearly doubled to 2,78,621 in 1967, with no appreciable reduction in subsequent year. As a result, the programme underwent a fairly drastic re-phasing in 10 out of 17 States. 71.30 Malaria Eradication Units operating in these States and constituting well over a fourth of the total number of units were switched back to the 'attack' or preliminary phase of the programme form the 'consolidation' and 'maintenance' phases. What a major set-back this was would be apparent from the fact that the scheme which Government had expected to complete by 1968-69 would now be prolonged till 1974-75. The outlay for completion of the scheme during the 4th Plan period has in consequence increased from Rs. 19.21 crores, estimated in 1966, to 91.74 crores.

[S. No. 1 (Paragraph 1.21) of Appendix V to 101st Report—4th Lok Sabha]

Action Taken

It is true that the National Malaria Eradication Programme made satisfactory progress upto 1963-64. Focal outbreaks started in 1964 resulting in reversions of 11.59 units areas in 1965. Subsequently, focal outbreaks extended further and during 1966 and 1967, 16.66 and 23.95 unit areas were temporarily reverted, respectively. The population involved in such temporary reversions were 12, 17 and 31.80 million during 1965, 1966 and 1967, respectively. These reversions were, however, not reflected in phasing of the programme and the additional requirements of funds and supplies were met out

of sanctioned budget allotment of National Malaria Eradication Programme by internal adjustment. This was not effective as would be evident from the fact that there had been further spread of the focal outbreaks. This necessitated realistic rephasing of the programme during 1968-69. In an attempt to realistically rephase the programme, 71.385 units areas were reverted to attack phase from consolidation and maintenance phases. This realistic rephasing was done with a view to giving logistic and budget support to the programme and to checking further spread of focal outbreaks. The bulk of these reversions (67%) was from 3 States namely Gujarat, Madhya Pradesh and Rajasthan only and another 27% was contributed by the States of Maharashtra, Uttar Pradesh, Orissa and Bihar bordering these three States. Thus, 94% of the total reversions were from these 7 States.

It was possible to halt the focal outbreaks and there was no further spread. This stands supported by the fact that during the year 1967, 86% of the total cases in the country were from these seven States which subsequently dropped down to 76 and 74 per cent. during the years 1968, 1969 respectively. In all these States there had been decline in the incidence during 1969 as compared to that in 1968 except in Gujarat and Maharashtra States where the rising cases were due to a large number of cases being detected in Bulsar & Palghar units due to vectors developing resistance to DDT and the operations with a substitute insecticide (malathion) which had to be suspended on account of its toxic effect on the workers. This insecticide in the form of emulsion concentrate has been in use in many countries of the world with no untoward symptom. This was used in consultation with the World Health Organisation. The toxic symptoms were because of the workers not following rigidly the protective measures required to be taken. The use of emulsion concentrate is however, being replaced by Malathion W.D.P.

To cite an example, the trend of decline in the positive cases in the areas reverted to attack from maintenance phase in U.P. is as under:—

No. of districts involved	Population involved in Million	Total No. of Cases. 1967	1968	1969
12	6·81	3284	1947	337.

From the above table, it would be seen that during the year 1969 there had been reduction by about 90 per cent compared to the

incidence of the disease in 1967. It is to be expected that most of these areas would qualify for passing into their original phase of maintenance after internal assessment during early 1971. Initially National Malaria Eradication Programme was envisaged to be completed by end of 3rd Plan period, thereafter the completion target was revised from time to time and target year for completion was changed over to 1967-68, then to 1970 and now to 1975-76. Had this re-phasing not been effected, it was feared the completion target would have got further extended because there would have been continued focal outbreaks hardly possible to check due to the absence of realistic logistic and budget support to the programme. This could have ultimately led to widespread epidemic in the country as had happened in Ceylon in recent past due to similar reasons and in several other countries.

The provision of Rs. 19.21 crores as estimated in 1966 for the 4th Five Year Plan period is considered to be hardly realistic in the sense that the entire amount was not even sufficient for two years viz. 1966-67 and 1967-68. But for the realistic rephasing of the programme as undertaken in 1968-69, the outlay for the completion of programme could have been much more than what has ben estimated now.

[Department of Health O.M. No. F.1-25|70-C&CD dated 4-1-1971].

Recommendation

In the Committee's opinion, a number of deficiencies in the programme contributed to this setback. The principal contributory factors were:

(i) Patchy and poor spraying, resulting in what a team of T.C.M. experts had in 1960, characterised as "less than-complete coverage of many villages and less-than-complete treatment of sprayable surface."

(ii) Failure to develop on the required scale the surveillance or vigilance mechanism, which could have helped in the timely detection of persistenance or reorudescence of malaria.

(iii) Failure to provide adequate diagnositic facilities and rural health services to cope with the deteriorating epidemiological situation.

[S. No. 2 (Paragraph 1.22) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

The number of deficiencies which brought about the set-back in the programme as enumerated by the Committee have been and are being looked into and all possible measures are being taken to remedy the defects.

Efforts have been made for placing advance indents for imports from abroad of insecticides to enable the supplies to reach the country in time. The proper supervision of the X-ray operation and necessary health education measures are also being geared up.

As for improvement in the surveillance and vigilance machinery in the 4th plan, one Worker for 10,000 population or 35 sq. miles area has been recommended for approval for surveillance operations. In the IVth Plan there is a provision for one worker for 10,000 population but now the new proposal has delineated the areas as well. Regarding these vigilance operations, the basic health services have been made 100 per cent centrally sponsored for strengthening the peripheral staff by supplying additional worker at the rate of one worker for 10,000 population and one Inspector for 4 such workers. The vigilance is entirely the responsibility of the States and with the Centrally sponsored assistance, this would also improve.

[Department of Health O.M. No. F.1-25|70-C&CD dated 4-1-1971].

Recommendation

A number of agencies who appraised the working of the scheme at various stages had drawn Government's attention to these and other weak points in the scheme. A team of T.C.M. consultants who reviewed the working of the scheme as early as 1960 reported that "the future of malaria eradication in India is dependent almost entirely on the ability of the individual spraymen and the individual surveillance worker to carry out his duties in an acceptable manner and to his supervisors to provide the leadership and directions of eradication activities". Subsequent appraisals of selected areas in the country which were done annually had also warned Government of "unsatisfactory spraying", "unstable surveillance", "inadequate facilities", and "lack of epidemiological investigation", to cite just a few of the draw backs mentioned by these teams. In spite of these repeated warnings, there was not enough appreciation either on the part of the State Government, who were implementing the

scheme, or on the part of the Government of India, who acted as the co-ordinating agency, of the need for rectifying the deficiencies in the programme and implementing it in a purposeful manner.

[S. No. 3 (Paragraph 1.23) of Appendix V to 101 st. Report—4th Lok Sabha].

Action Taken

The Government of India were fully seized of the situation as recommended by the T.C.M. Between 1960 and 1967 all efforts were made to improve the work of the individuals in the field by constant visits of the staff from the State Malariologists office, Regional Offices and the National Malaria Eradication Programme Directorate, From 1962, onwards annual independent appraisal of the programme in the various States was undertaken. The recommendations of the Appraisal Teams were communicated to the States by the Ministry of Health, F.P., W.H. & Urban Development for necessary implementation. However, in order to get further in-sight of the lacunae in the programme. the Government of India had appointed a Special Committee (Madhok Committee) in the year 1967-68 who have reviewed the working of the programme and recommended measures for improvement. The recommendations of the Committee have since been considered for implementation. Further the persistent transmission areas in about 40 unit areas, distributed over 12 States and 6 Union Territories, contributed over 50 per cent of the total cases recorded in 1969. These areas inspite of over 11 to 17 years of spray and about 8 years of surveillance, could not progress to the next phase of the operations i.e. Consolidation phase. In order to ascertain the reasons of persistent transmission in these areas as also to indicate the possibilities or otherwise of eradicating malaria from such areas, evaluation in depth is being arranged with assistance of USAID and WHO exports during 1970-71. This team will make detailed studies of various reasons for persistent transmission, ascertaining feasibility or otherwise of controlling malaria effectively and recommend measures to eradicate malaria if it is possible. As such, it would be seen that the Government of India appreciate the need for rectifying the deficiencies in the programme and for implementing it in a purposeful manner.

It may, however, be indicated that the execution of the programme rests with the States who are constantly advised by the Regional Coordinating Organisation and N.M.E.P. Directorate to enhance the tempo of activities in order to complete the programme by 1975-76. as scheduled. The programme is also annually reviewed in the Central Council of Health meeting and States lagging behind are requested to gear up their activities.

Moreover, it is required to be clearly understood that in a biological programme like this where men, mosquitoes and perasites are involved, the time limit is provisional and cannot be precise for various reasons.

[Department of Health O.M. No. F. 1-25|70-C&CD dated 4-1-1971].

Recommendation

One factor that lent particular urgency to the implementation of the scheme was not adequately appreciated by Government. This was the phenomenon of anopheline resistance of insecticides which became apparent even in the early stages of implementation of the scheme. In 1960, the team of T.C.M. consultants had said that "one of the most compelling arguments for the immediate accomplishment of malaria eradication in India is the evidence that loss of susceptibility to residual insecticides is occuring among various specios of malaria-transmitting mosquitoes." They pointed out that though this had occurred "in the limited portions of the country", "widespread development of this phonomenon will greatly change and complicate the technique to be employed, with vastly increased cost." In 1962, an expert Committee of WHO drew attention to this problem and observed that in a number of programmes all over the world, this had "impeded the progress of Work", and "may result in an increase in the financial burden of the campaign". As would be evident from data given later in this report, subsequent developments in the country have proved these fears to be true.

[S. No. 4 (Paragraph 1.24) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

As a routine, susceptibility tests to determine the susceptibility status of the malaria vectors in different parts of the country is being carried out from the year 1960. As a result of those observations it has been possible to map out the areas of resistance to insecticides in the vector. There are small pockets of such resistance in Maharashtra and Gujarat, which are being treated by an alternative insecticide.

In general, appearance of resistance as indicated by standard tests is not an indication of total failure of the insecticides in the field of interrupt transmission. It is an indication that the vector is showing lowered susceptibility to the insecticide. in other words the tests disclose a change in the response of the vector. The failure of the insecticide, however, in the field should be based on entomological and epidemiological data. This procedure has been adopted in

the National Malaria Eradication Programme and wherever it has been proved definitely that resistance in the vector to insecticide is responsible for non-interruption of transmission, alternate insecticide has been put into use.

The resistance in vector species to insecticides is being constantly kept in mind, and after careful investigations suitable measures are being taken to overcome this.

As far the alternative insecticide so far, use of malathion has been made in small pockets of such vector resistance in the States of Maharashtra and Gujarat. On the recommendations of the W.H.O. this insecticide was put into use on trial basis as emulsion concentrate in 1968 and later on was given up due to appearance of toxic symptoms in spraymen in one of the 4 squads employed in Maharashtra. Presently malathion 25 per cent wdp is being used in lieu of malathion emulsion concentrate and there are no reports of any toxic symptoms so far.

[Department of Health O.M. No. F. 1-25|70-C&CD dated 4-1-1971].

Recommendation

A redeeming feature in the present situation however, is that the outbreak have occured in the main in seven contiguous States in Central India. Since this is a compact area, the Committee hope that the situation can be tackled by Government without great difficulty. In any plan of action that Government may draw up for this purpose, the following points should receive adequate emphasis:

(i) Improvement in the quality of spraying operations and intensification of field supervision on this activity at all levels.

(ii) Intensification, improved coverage and tighter supervision over surveillance operations in the programme.

(iii) Parallel and correlated development of rural health services.

[S. No. 5 (Paragraph 1.25) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

The points indicated by the Committee to draw up the plan of action have been noted and the State Governments have already been requested.

(i) to improve the quality of spray operation and to intensify field supervision at all level;

(ii) to intensify and improve coverage through surveillance operation under strict supervision; and

(iii) to give priority for development of rural health services in areas which are in the maintenance phase of the programme.

In this connection the extract from Resolution No. 13 at the 16th meeting of the Central Council of Health reads as follows:—

"The States, especially those with bulk of reversions of unit areas to attack phase should improve the tempo of implementation of the programme to complete the same within into target year 1975-76.

Adequately staffed basic health services in the maintenance phase areas of the programme be ensured to prevent any resurgence of disease in such areas. Morals of the staff employed on the programme be boosted by ensuring the continuity of their services after the completion of the programme in the general health services in suitable mannner.

That plans of operations be reviewed periodically with a view to adopting the plans of action to the changing epidemiological situation and sufficient flexibility be provided in the financing of malaria Eradication Programme in order to meet unforeseen problems. That plans of operations in the individual States should be drawn keeping in view the requirements of individual States as demanded by terrain and communications and the allocation of funds be made accordingly allowing necessary flexibility in making adjustments in the organization and staffing pattern to suit the local conditions."

In the Fourth Plan the Scheme of strengthening of peripheral staff at the Prime Health Centres located in maintenance phase of

malaria Eradication has been categorised as 100 per cent Centrally sponsored which would encourage the States to undertake such strengthening in due course.

[Department of Health O.M. No. F.1-25/70-C&CD dated 4-1-1971]

Recommendation

The Committee further feel that to make the programme effective and ensure its success it is essential to obtain community support for it especially in the rural areas. The Civil groups local influential citizens, block development officers should be approached for co-operation and guidance. Their backing will facilitate greater co-ordination and cooperation in the conduct of the programme and will also act as a check on the proper discharge of duties by the field staff.

[S. No. 6 (Paragraph 1.26) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

It is true to some extent that the programme was working in isolation in the absence of adequate publicity needed for the support, of the community to the programme. However, efforts are being made to get full and constant support through civil groups, local influential people, Block Development Officers etc. for further participation in the successful implementation of the programme.

Ministry of Health and Family Planning and Works, Housing and Urban Development have already requested the State Health Departments to ensure that the zonal and unit officers should be the members of Zila Parishad and Panchayat Samiti for enlisting the support and cooperation of the District Administrative machinery.

[Department of Health O.M. No. F.1-25/70-C&CD dated 4-1-1971].

Recommendation

In the opinion of the Committee, a definite plan for basic health services is crucial for the successful implementation of the Malaria Eradication Programme. In adequate appreciation of this point has been responsible for the setback to the programme in recent years. The Committee not that, as part of the Fourth Plan Scheme, State Governments are proposed to be assisted to set up health centres at a cost of Rs. 44 crores. The Committee hope this plan would be imaginatively planned and executed, so as to provide a "health infrastructure" which would provide the foundation on which the elementary services can be expended in an orderly manner. The Committee hope that while implementing this scheme the guidelines laid

down by the W.H.O. Expert Committee in their 9th Report would be borne in mind. As pointed out by the Expert Committee "the Scheme cannot be too elaborate but must be realistic and adapted to the economic possibilities of the country". Special attention should be given to those functions likely to produce the best possible return in terms of reducing morality, morbidity and disability, work being executed on the basis of "a list of priorities and a firm determination to concentrate action on the most important ones."

[S. No. 7 (Paragraph 1.36) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

In India the preparation for *entry* into the Maintenance Phase has been under the consideration of the Government of India since 1962 when a Sub-Committee formed by the Government recommended that a Special Committee should consider the preparations to be made for entry of units into maintenance phase, keeping in view that the plan be realistic and within the economic possibioities of the country. A special Committee popularly unknown as 'Chadha Committee" was appointed in 1963 when some of the units were ready to enter the maintenance phase next year. The Committee recommended the establishment of vigilance services under the general health services to cater not only to the needs of maintenance of freedom from malaria but also for other health care services on a phased and priority basis. The vigilance activities under the maintenance phase were carried out as per recommendation of the 'Chadha' Committee' during 1964-65 and 1965-66. In order to overcome the financial difficulties, the States were also given Central assistance to the tune of 50 per cent of the total expenditure on the additional staff as recommended by the Committee.

In 1966, with the increasing importance of family Planning and the necessity to implement this as a crash programme, the malaria maintenance activities were de-linked from family planning programme and health assistance (Family Planning) were withdrawn from supervision over basic health workers. In view of the above situation, the staffing pattern of primary health centres was given again reviewed by a Special Committee appointed by the Government of India. The Committee known as "Mukherjee Committee", recommended the minimum staff required at the different levels within the district so as to provide an integrated health services for catering to the needs of vigilance services for the maintenance phase of malaria and small-pox eradication programme For the basic health services for maintenance phase of malaria which are to form an integral part of the health services during the IV Plan

period a provision of Rs. 43.98 crores has been made. In 2424 primary health centres basic health workers are in position. During the year 1969-70 Rs. 172.53 lakhs was spent on this service and Rs. 400 lakhs has been provided for the current year, 1970-71.

[Department of Health O.M. No. F.1-25/70-C&CD dated 4-1-1971].

Recommendation

Inadequate laboratory facilities in the country have cramped the provision of diagnostic services to people living in malarious areas. The deficiency in this respect has been repeatedly pointed out by several teams which appraised the working of the Scheme. The Committee note that dufficulties are being experienced in getting trained para-medical staff to man these laboratories. The Committee would like to stress the need for a crash programme to recruit the necessary staff and train them adequately.

[S. No. 8 (Paragraph 1.37) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Augmentation of laboratory service under National Malaria Eradication Programme is receiving the attentation of the Government of India. The microscopists provided to the laboratories have been trained and refresher/training courses are being held in the States with the help of Regional Coordinating Organisations under National Malaria Eradication Programme.

[Department of Health O.M. No. F.1-25/70-C&CD dated 4-1-1971].

Recommendation

One point that should receive particular attention is the need to get blood smears examined in the laboratories very quickly. The data given earlier in this report would show that a large backlog to unexamined slides accumulated in the laboratories between 1961 and 1963. Rapid and correct examination of blood smears of great importance both for purposes of treatment and epidemiological investigation. The Committee hope that a strict watch would be kept on the laboratories in this regard, as otherwise, the investment of funds in this service will be rendered purposeless.

[S. No. 9 (Paragraph 1.38) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

With the provision of microscopists on the basis of one microscopist for about 1.2 lakhs of population (on the basis of 50 slides per worker per day) for which a proposal has been made, the blood smears would be examined promptly. For rapid and correct examination of the blood smears in the laboratories, a strict watch is being kept by the Unit Officers. Further 10 per cent of the negative and 100 per cent of positive blood smears examined in the Unit laboratories are cross-checked in the State laboratories and in the laboratories of the Regional Coordinating Organisations. With this system of cross-checking there would hardly be any chance for missing a positive blood smear.

[Department of Health O.M. No. F.1-25/70-C&CD dated 4-1-1971].

Recommendation

The Expert Committee of the WHO have pointed out that slide examination as a diagnostic technique suffers from certain inherent limitations which may render it "Insufficiently sensitive" in certain situations. They have, therefore, suggested that "practical serological methods" for case detection "should be given the fullest encouragement". This is a matter which calls for research support and the Committee would like Government to initiate studies in this regard with the support of the WHO, so that reliable diagnostic methods are ultimately employed in the laboratories.

[S. No. 10 (Paragraph 1.39) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Various Developments with regard to seriological tests in National Malaria Eradication Programme are being watched and will be introduced in the programme when such methods could be applicable in the field situation. Moreover if and when possible these techniues would be practicable only in the Central Laboratories.

[Department of Health O.M. No. F.1-25/70-C&CD dated 4-1-1971].

Recommendation

One other point that has come to the notice of the Committee from the information furnished to them deserves mention. Nearly three-fourths (3,924 Nos.) of the total stock of microscopes with the laboratories (4,259 Nos.) have been giving "poor performance" due to all immersion lenses getting "hazy", a situation which even repairs have

not been able to improve. All these miscroscopes have been obtained from a particular firm overseas, with whom arrangements for their repairs were discussed by Government in July, 1968. The Committee would like to be informed whether these microscopes have been repaired and been given saatisfactory performance. The Committee note that there is a programme for the procurement of 1,271 microscopes representing the requirements over the next four years ending 1972-73. The Committee hope that careful selection of instrucents will be made in future keeping in view the past experience. It would appear to be better to go in for microscopes which give trouble free and uninterrupted service.

[S. No. 11 (Paragraph 1.40) of Appendix V to 101st Report -4th Lok Sabha].

Action Taken

The question for the repair of defective microscopes and oil immersion lenses under N.M.E.P. was taken up with M/s Olympus Optical Company Ltd., Tokyo, Japan, from whom bulk supply of the euipment was imported. They had agreed to detail their technical experts to India for check up of certain miscroscopes and oil immersion lenses, giving a detailed note on causes of defects and demonstration for rectification of defects as for as practicable subject to cost of repairs being paid by the Government of India and six technicians being sent to JAPAN to receive training from M/s Olympus Optical Co. Ltd., the expenses being borne by the Government of India.

Though the arrangements for deputing air Indian Technicians to Japan could not be finalised nor could Team of Japanese Technicians visit India to take up repair job, two firms in India are undertaking satisfactory repairs of microscopes and lenses. However, 550 oil immersion lenses were obtained through WHO in the year 1968 and were distributed in various States which eased the situation. Further efforts are being made to get more lenses on Rupee reimbursement basis through UNICEF. No demand for microscopes from the States is pending with N.M.E.P. as they are meeting their requirements with surplus miscroscopes due to their areas entering into maintenance phase. In maintenance areas, UNICEF has supplied requisite number of microscopes.

There is no proposal for the procurement of 1271 microscopes under National Malaria Eradication Progamme, as indicated therewith.

[Department of Health O.M. No. F. 1-25/70-C & C D dated 4-1-1971].

Recommendation

The Committee note that one of the factors that retarded spraying operations under the National Malaria Eradication Programme was the belated supply of insecticides. The representatives of Government attributed this belated supply to the "late arrival of imports" and "difficulties in finalising deals with foreign firms" and pleaded that advance orders could not be placed due to "difficulties ......about budget allocation and getting clearance from Finance to place orders in advance." The Committee observed that advance indents are now being placed for insecticides required for the programme.

[S. No. 12 (Paragraph 1.49) of Appendix V to 101st Report — 4th Lok Sabha].

Action Taken

Until 1963-64, DDT and Antimalaria drugs from USA and USAID were received as grant-in-aid. There were no delays in the receipt of the drugs and insecticide till the period. From 1964-65 insecticides and drugs have been received from U.S.A. against long term loan agreement. The indents on USAID until 1968-69 were placed after obtaining the budget sanction which resulted in the late arrival of the shipments from U.S.A. Advance indents in anticipation of the budget were placed on USAID against 1969-70 requirements and the imported supplies of insecticides were received in time. The indent for imported supply of DDT against 1970-71 requirements could only be placed in December, 1969 for various reasons. Administrative bottlenecks are being removed and all care will be taken for placing indents in advance in future. A proposal to allow 1000 tons of 75 per cent DDT as reserve stock handy during the year 1971-72 is engaging the attention of the Government.

[Department of Health O.M. No. F. 1-25 70-C & C D. dated 4-1-1971].

Recommendation

Earlier in this report, the Committee have drawn attention to the problem of resistance on the part of Malaria-transmitting Mosquitoes to insecticides and to the distubing implications of the phenomenon for the future of the programme, both in terms of cost and speed of implementation. The Committee would like Govt. not to lose further time and to establish, through entomological investigations, the causes of persisting transmission in area where insecticide resistance has developed. In particular, the investigations should seek to ascertain whether persisting transmission is in any way due to what the WHO Expert Committee have characterised as the "presence of

unsuspected vector species, not effectively controlled by insecticide". A plan of action for controlling and interrupting transmission in those areas should also be drawn up, having regard to suggestions made by WHO Expert Committee from time to time, due consideration being given to the following measures, subject to operational conditions:—

(i) Supplementing insecticidal attach by larvicidal operations.

(ii) Mass drug administration.

[S. No. 16 (Paragraph 1.57) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Intensive entomological investigations have been undertaken in some of the areas where persisting maaria transmission is occurring in order to elicit if vector resistance to insecticide is posing a problem. Such an investigation in Palghar unit in Maharashtra State showed that the insecticides in use are not effective due to resistance in the vector. Similar investigations have also been done in Gujarat, Rajasthan and Madhya Pradesh. In some of the areas in Maharashtra and Gujrat where due to resistance in vector to insecticide DDT and BHC, malaria transmission has not been interrupted, an alternative insecticide viz. malathion has been put into use.

A Team of International experts has been sponsored to undertake in-depth valuation of N.M.E.P. in India. They would examine the causes of persistent transmission and feasibility of eradication in such areas. They would if necessary recommend change in the approach for speedy achievement of the object of eradication of malaria in the areas.

In urban areas where the vector *A. stephensi* is resistant to insecticide and where malaria transmission continues intensive larvicidal operations are practised. The larvicidal operation would be more economical and effective in urban areas than in rural areas.

Mass drug administration is also undertaken in selective groups in areas with persistent transmission where there is insecticide resistance.

[Department of Health O.M. No. F. 1-25/70 C & C D. dated 4-1-1971].

Recommendation

It will also be necessary for Government to undertake entomological investigations to determine how best the breeding of Malaria mosquitoes coud be checked so that their multiplication is effectively arrested.

[S. No. 18 (Paragraph 1.59) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

The permanent solution for checking the breeding of mosquito lies in the elimination of breeding sites by engineering methods thus launching on effective sanitation and drainage programme. Such measures are however, costly and beyond the reach of developing countries but in the long run save lot of recurrent expenses.

The measures adopted at present generally against mosquitoes breeding in urban areas are of recurring nature consisting of treating the breeding places with oils.

Research on control of mosquitoes by using genetic manipulations (sterile male technique) have been taken up by I.C.M.R. in collaboration with W.H.O. and its results are awaited.

[Department of Health O.M. No. F. 1-25/70 C & C D dated 4-1-1971].

Recommendation

The National Malaria Eradication Programme employs a substantial complement of staff. The total expenditure on the account, including contingent expenditure, amounted to Rs. 95.37 crores during the period 1958-59 to 1967-68. The Committee would like Government to examine whether, consistent with the need to secure effective implementation of the scheme, there is scope for economy. A works or norms study could be conducted for this purpose:

[S. No. 19 (Paragraph 1.66) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

S.I. Unit is proposing to visit some units in field for norm studies for which all facilities are being provided.

Moreover Evaluation in-depth Team would also include examination of economic aspects etc. Such evaluation is being undertaken during 1970-71.

[Department of Health O.M. No. F. 1-25/70 C & C D dated 4-1-1971].

Recommendation

From the information furnished by Government the Committee gather the impression that the present surveillance machinery for detection of malaria cases is "very expensive". The Committees would like Government seriously to undertake research studies to simplify methods of detection and bring down the cost in this regard.

[S. No. 20 (Paragraph 1.67) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

As for the cost of surveillance machinery this is an essential component of eradication as so far no other way has been found to substitute this method of detection of case in the developing countries. However, under National Malaria Eradication Programme—India, the cost has been kept at a minimum by allotting one house visitor for 10000 or more population. In fact one worker should be given not more than 5000 population and in certain areas even less.

The W.H.O. in their research programmes has already included such studies for evolving cheaper methods with no success yet.

[Department of Health O.M. No. F. 1-25/70 C & C D. dated 4-1-1971].

Recommendation

One of the personnel problems that Government are faced with is the "low morale" which should appear to have seriously interfered with the successful implementation of the programme. The representatives of Government also pointed out that there had been instances of "the programme ....not being executed by the staff or "fictitious entries" regarding spraying in certain areas resulting in "complete failure of the programme in respect of certain matters". The Committee would like the Government of India in consultation with the States to draw up a plan for stringent action to deal with cases of dereliction or delinquency. For this purpose a systematic record of such occurance may prove useful and have a salutary effect on the workers. At the same time, the Committee would like Government to appreciate that lack of assured career prospects could greatly dampen morale and lead to neglect and inefficiency. As pointed out by the WHO Expert Committee, a number of Programmes "have suffered from an excessive turnover resulting from unsatisfactory conditions of service and lack of interest." The Committee would like Government to consider how best the

scope for absorption of temporary or seasonal staff could be maximised through training programme calculated to equip them for diverse work in the general health services. The aim should be to assure each employee a reasonable service prospect unless found guilty of incompetence, neglect dis-honesty or other justifiable cause for dismissal.

[S. No. 21 (Paragraph 1.68) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Ministry of Health has addressed to the State Health Departments a letter requesting that a plan be drawn for stringent action against defaulters in the field who try to bring fictitious data.

As for the matter of morale of the worker under the Programme States have been requested that each and every good worker be assured of his absorption in other programme after completion of National Malaria Eradication Programme.

[Department of Health O.M. No. F. 1-25/70 C & C D. dated 4-1-1971].

Recommendation

The work of the spraying staff employed in the scheme involves health hazards arising out of exposuure to insecticides. The Committee would like Government to take adequate steps to protect the staff against such hazards. Their area of work should also be mapped out in such a way as to avoid undue burden or inconvenience.

[S. No. 22 (Paragraph 1.69) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Under National Malaria Eradication Programme India, DDT is being mainly used for spray operation. DDT has very low acute toxicity and is therefore quite safe to handle. Nevertheless all necessary instructions are given to the spray staff to avoid undue exposure and the spray operations are always done under the supervision of trained personnel. During 17 years of NMCT NFEP activities throughout the country no serious sickness or death has been reported amongst spray men employed for spraying DDT. In certain restricted areas where never insecticides like malathion are used every possible care is being taken to avoid toxic hazards, by issue of gloves, overall foot wear, head covers to the spray men. These units are being stocked with specific antidotes to meet any

emergent situation. The supervisory staff have also been specifically instructed to keep a close bigilance on the spray squads to see that all precautions are observed during spray operation. The schedule of spraying for a particular area is drawn up much before the actual spraying is undertaken by taking into account the average surface areas which one pump can spray in one day on an average. Thus the work of each sprayer is carefully worked out and is not on the excess side.

Wherever malathion is sprayed arrangements are ensured for regular examination of blood for cholinesterase content.

[Department of Health O.M. No. F. 1-25/70-C & C D dated 4-1-1971].

Recommendation

In their 42nd Report (Third Lok Sabha) as well as their 71st report (Fourth Lok Sabha), the Committee have drawn attention to the unsatisfactory position regarding the deployment of vehicles placed at the disposal of the States for the implementation of the National Malaria Eradication Programme. The Committee had drawn attention to the fact that nearly 50 per cent of the existing fleet of 2,653 vehicles was off the road. Basically the very poor quality of maintenance of vehicles fleet has strained their efficiency and life and interfered with their optimum utilisation. The Committee note that pursuant to their suggestions in their earlier reports, a Committee has been set up to examine how many vehicles out of the existing fleet could be rendered road-worthy. The Committee hope that this examination would be speedily completed and that, before, any proposal for augmentation of the fleet is approved, the scope for pressing into service the maximum number of vehicles out of the existing fleet would be carefully examined, taking into account the economics of their repairs.

[S. No. 23 (Paragraph 1.74) of Appendix V to 101st Report — 4th Lok Sabha].

Action Taken

From the ages of the vehicles it may be seen that even the finest maintenance service cannot keep the vehicles road-worthy

for such a long time as the fleet under the National Malaria Eradication Programme organisation on rough roads in rural areas.

No. of vehicles	Age in years
1813	11—16
837	8—10
3	4
Total—2653	

The States have been asked to form Condemnation Board under M.O.H. letter F. 8-9/67-C&CD dated September 19 and October 8, 1969.

The Board comprises State Malariologist, State Health Transport Officer, and the Regional Deputy Director, National Malaria Eradication Programme. So far only one State Committee has surveyed vehicles. However, they are being expedited to carry out the survey expeditiously and the N.M.E.P. Directorate is pursuing the matter vigorously. The full augmentation of the fleet will be done after surveying the fleet already in existance.

Part augmentation of vehicles is being made keeping in view the minimum requirements, and the availability of funds in areas with acute transport position in attach and consolidation phase units.

[Department of Health O.M. No. F. 1-25/70-C & CD, dated 4-1-1971].

Recommendation

From the information furnished to the Committee it is observed that there is a plan for purchase of 1,987 vehicles for the period ending 1971-72. The Committee have, in their 97th Report (4th Lok Sabha), pointed out the desirability of phasing the programme of purchase of vehicles as and when they became road unworthy instead of deferring it over years. The Committee would also like Government to scrutinise this requirement very critically and ensure that only the minimum number of vehicles required by operational areas be purchased, purchase for coordinating and headquarters organisation being avoided as far as possible.

[S. No. 24 (Paragraph 1.75) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

The National Malaria Eradication Programme does not propose to purchase 1987 vehicles but only propose a phased programme for 500 vehicles which is 50 per cent of requirement for Attach and Consolidation. 75 vehicles have already been purchased in 1968 and 104 vehicles are being purchased during 1970-71. It is further proposed to purchase more vehicles in a phased programme, according to the requirement of attack and consolidation phase areas.

Vehicles to supervisory staff and headquarters are only being supplied wherever it is absolutely essential after full critical examination of the requirement by the Directorate of National Malaria Eradication Programme, otherwise no vehicles are being supplied.

[Department of Health O.M. No. F. 1—25/70--C&CD dated 4-1-1971].

Recommendation

The Committee would like constant vigil to be maintained in border areas for controlling malaria. The good offices of the WHO should be availed of in deciding the phasing of the Programme in these areas.

[S. No. 25 (Paragraph 1.82) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

As for operations in border areas, constant vigil is being maintained in the 19.30 units bordering Pakistan, Burma and Nepal. Annual meetings for coordination of the problems at the border have been held with Pakistan and Burma as well as Nepal. The last Burma-India-Pakistan meeting was held in January, 1970. These meetings are being attended by WHO representatives also.

[Department of Health O.M. No. F. 1—25/70--C&CD dated 4-1-1971].

Recommendation

The Committee are concerned to observe that there are about 40 problems areas in the country where transmission of malaria persists. The expert Committee of WHO have laid down guidelines for implementation of the Scheme in such areas, which Government

will no doubt duly take note of. In particular, attention should be directed to "effective attack measures and thorough case investigation" so that persistence of transmission could be eliminated.

[S. No. 26 (Paragraph 1.83) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

In some of the problem areas entomological and epidemiological investigations have been instituted. In areas where DDT and BHC have proved ineffective against vector, malathion organiphosphorous compound has been substituted as in Maharashtra and Gujarat States.

Evaluation in-depth is in progress with specific terms of reference to find out and recommend solution for such areas.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

Recommendation

The Committee note that an overpayment of a sum of Rs. 6.32 lakhs to surveillance workers by way of allowances, occurred in the State of Orissa between 1962-63 and 1966-67. Government have stated that the matter is under investigation in consultation with the State Government. The Committee would like to be apprised of the findings. In case the overpayment is established, appropriate steps for recovery should be speedily taken.

[S. No. 27 (Paragraph 1.84) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

The Orissa State Government has been advised not to pay any special allowance to the surveillance workers in future. With regard to the recovery of the overpayment made, the State Government has been asked to take necessary action.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

Recommendation

The Committee observe that claim for transit losses amounting to 1.11 lakhs in respect of DDT and antimalaria drugs sent by rail

have still to be realised. The Committee would like the matter to be pursued further and recoveries effected.

[S. No. 28 (Paragraph 1.85) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Claims have been prepared by the individual States under the rules. We have also written to the States to inform if any assistance is required so that the matter may be taken up with the railway authorities. The matter is being pursued.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

Recommendation

Malaria is one of the most widespread diseases. Its existence depends on two factors, the mosquito capable of transmitting the parasite and the humans harbouring the parasite in the blood. It can be controlled effectively only when measures are simultaneously applied against the mosquito and the infection present in a human being.

[S. No. 29 (Paragraph 1.86) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Under present eradication measures combined attack against mosquitoes as well as the parasite in human being is being directed through use of insecticides and drugs.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

Recommendation

Over the years, Government have made a substantial investment in the National Malaria Eradication Programme. The data given earlier in this report would show that between 1958-59 and 1967-68, the investment amounted to Rs. 154.64 crores, a little over one fifth of this investment involving expenditure in foreign exchange. The investment in the scheme amounts to 12.72 per cent. of the total Central and State Health budget. Government have, therefore, a vital stake in the scheme and its successful implementation is of paramount importance.

[S. No. 20 (Paragraph 1.87) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

In this respect of special Fact Finding Committee known as Madhok Committee was appointed by the Government of India, Ministry of Health & F.P. & W.H. & U.D. to find out solution for the problems facing the programme. Further in-depth evaluation is being undertaken with the help of international experts from WHO and USAID and a national expert to recommend measures for expediting the eradication of malaria from the country.

The Government of India is fully alive to the importance of the programme and the amount spent on National Malaria Eradication Programme as also to the set-backs in the programme. All necessary measures are being taken to hasten the completion of the programme as scheduled.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

Recommendation

The findings in this report will show that, while the scheme progressed satisfactorily till 1963-64, set-backs have occurred since then with focal outbreaks of malaria in a number of States. In the result, the completion of the programme has been delayed by over six years. The outlay for completion of the scheme has in consequence undergone an enhancement from Rs. 19.21 crores to Rs. 91.74 crores.

[S. No. 31 (Paragraph 1.88) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

This note has been explained against serial No. 1 and para 1.21 of the report. The total outlay for this programme during the IV Five Year Plan as now agreed to is Rs. 72.20 crores.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

Recommendation

Though this situation has been brought about by a variety of reasons, the Principal, contributory factors that affected the progress of the operations were these:—

(i) Failure to ensure that spraying coverage was total complete, sufficient and regular

(ii) Absence of timely provision of staff at certain levels, particularly at diagnostic centres and of insecticides and anti-malaria drugs.

(iii) Inadequate emphasis on surveillance techniques.

(iv) Failure to develop and sound health infra-structure in the field to take over the Scheme at the consolidation stage.

[S. No. 32 (Paragraph 1.89) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

(1) Instructions have been issued to all the States to maintain records of the spray room-wise and not house-wise and the supervisors have been requested that whenever they visit the field, they should work out the percentage of surface on the basis of the rooms sprayed and bring to the notice of the State authorities, if there are any deficiencies. Moreover, the supply of insecticides per unit has been raised from 90 tons to 110 tons of 75 per cent DDT Efforts are being made to ensure the supply in time.

(ii) The concurrent supervision of the programme is being carried out by the Director, NMEP and RCO staff by visiting field operations as frequently as possible in different States. During their visit, they also take note of the vacant posts and make a report to the State authorities to fill the vacancies urgently. The NMEP Headquarters also have chalked out a proforma to get regular information of the vacant posts of the programme in each State and necessary action is taken, as soon as such reports are received.

(iii) Both active and passive surveillance are checked in the field and whenever these are not upto the mark, the attention of the authorities is invited by pointing out the missed visits of the surveillance workers to the houses.

(iv) Ample emphasis has been laid on the necessity of adequate basic health services on the ground for taking over the responsibility of the maintenance phase. In this respect, in the IVth Plan the strengthening of the peripheral staff by employing additional staff has now been made 100 per cent centrally sponsored. With this step, the basic health services in areas in maintenance phase of malaria will be staffed adequately in due course. Further, it has been made clear to the States that for units which would be ripe for entry into maintenance phase, if States fail to effect that entry no central assistance will be provided for such units and the State would bear the entire cost for keeping it in consolidation phase.

This step was taken to stimulate the States to lay the basic health services on the ground in time before the entry of the units into maintenance.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

Recommendation

The Committee have made suggestions earlier in this report to overcome these deficiencies. They trust that Government would take speedy implemental action thereon. As early as 1960 the ACM Malaria Consultants summed up the essence of the strategy for the successful implementation of the Programme in the country in the following words:

> "The Team is convinced that the future of Malaria Eradication in India is dependent almost entirely on the ability of the individual spray-man and the individual surveillance worker to carry out the duties in an acceptable manner and to his supervisors to provide the leadership and directions of eradication activities."

[S. No. 33 (Paragraph 1.90) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

There are no two opinions on the remarks of the T.C.M. Malaria consultants and it is realised that the Malaria Eradication Programme requires perfection in every way. However, within the administrative limitations, all efforts are being made to persuade the workers to become conscious to the duties assigned to them and during the training period lot of emphasis is laid in explaining to them how much it would cost to the nation if they fail to carry out their duties efficiently.

As for the leadership for the programme, ample care is taken in selecting the Senior and experienced officers for this programme in the various States.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

CHAPTER III

RECOMMENDATIONS/OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE REPLIES OF GOVERNMENT.

Recommendation

While drawing up a plan of action for expanding indigenous production of insecticides and drugs, the Committee would like Government to bear in mind two important considerations. The first arises out of the health hazard posed by use of DDT which has led to its being banned in some countries of the world. The Committee would like Government to initiate immediately detailed studies in this regard. These studies should include the use of DDT for malaria eradication as well as a pesticide in agricultural operations. The second consideration has a bearing on reports of resistance of malaria parasites to drugs like chloroquine, primaquine and aminoquinolines which are being used in the country at present and are largely imported. The WHO Expert Committee have suggested that more data should be collected in this regard in different parts of the world through field tests. The Committee would like the Ministry of Health to draw up in collaboration with C.S.I.R. a programme to collect baseline data in the field about the presence of drug resistance and its distribution. The programme should also seek to secure an empirical screening of existing chemical compounds and thorough study of relevant physiological and biochemical phenomena to evolve new drugs, if possible, which would be effective against resistant strains.

[S. No. 15 (Paragraph 1.52) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Regarding stepping up of indigenous production of DDT, due care is being taken. On the question of controversy on ban of DDT, a Committee of Experts has considered this question and has come to the same conclusion as WHO that use of DDT in developing countries for public health measures be continued till an equally effective and economical insecticide is available to replace DDT.

Drug resistance has not been observed in the country. However, field observations are in progress to study such resistance if any. Research support to NMEP on various aspects is being contemplated as under:—

1. Development of resistance in vector species in mosquitoes to the insecticides in use under NMEP.
2. Development of resistance in parasites to the drugs in use under NMEP.
3. Immunity status in the community.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971].

Recommendation

It appears to the Committee that till a solution can be found to this problem a concerted campaign against the acquatic stages of mosquito *i.e.* larval and pupa stages will have to be intensified.

[S. No. 17 (Paragraph 1.58) of Appendix V to 101st Report—4th Lok Sabha].

Action Taken

Antilarval operation in rural areas are neither feasible nor economical and hence has not been undertaken in any area. In rural areas this problem has been overcome by substituting BHC where DDT has failed against the vector and malathion where both DDT & BHC have been ineffective.

However, in the urban areas with problems of malaria due to *A stephensi* resistant to DDT and BHC, antilarval operations are being intensified.

[Department of Health O.M. No. F. 1—25/70- C&CD dated 4-1-1971].

CHAPTER IV

RECOMMENDATIONS/OBSERVATIONS REPLIES TO WHICH HAVE NOT BEEN ACCEPTED BY THE COMMITTEE AND WHICH REQUIRE REITERATION

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CHAPTER V

RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF WHICH GOVERNMENT HAVE FURNISHED INTERIM REPLIES

Recommendation

The data furnished to the Committee show that every year since 1964-65 it took anything from 7 months to 2 years for supplies of insecticides to materialise, after proposals for their purchase were mooted. It is a matter of regret that it took Government such a long time to become alive to this situation and start the procedure of placing advance orders. The Committee hope that adequate care would be taken to ensure that "administrative bottlenecks" do not interfere with the timely supply of insecticides to the operational areas. As pointed out by the WHO Expert Committee whenever a country decides to undertake malaria eradication, funds should be "*budgeted for the whole programme, available at the planned date and be managed with necessary flexibility.*" The Committee would also like it to be considered whether buffer stocks of insecticides would help to ease any difficulty caused by unexpected delays in transit or supplies.

[S. No. 13 (Paragraph 1.50) of Appendix V to 101st Report—4th Lok Sabha].

Action taken

It has been decided that even the indents for insecticides and drugs to be procured indigenously against 1971-72 be placed in advance on D.G.S. & D. in 1970.

The suggestion of the P.A.C. that the funds to be budgeted for the whole programme and available at the planned date be managed with the necessary flexibility has been noted and the matter is being referred to the Finance for their concurrence.

The Government has considered the question of maintaining buffer stocks to take care of any delays in the receipt of the essential

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supplies of insecticide. Such a maintenance of buffer stock would certainly ease the difficulties caused by delay in receipt of supplies.

[Department of Health O. M. No. F. 1—25/70—C & CD dated 4-1-1971].

Recommendation

The information furnished by Government to the Committee shows that the country has, between 1964-65 and 1968-69, spent Rs. 1,067 lakhs on imports of insecticides and anti-malaria drugs. The projected requirements or insecticides over the five years ending 1972-73 is 58,524 tons, out of which only 25,464 tons, i.e., less than half is expected to be indigenously available. Similarly, against the requirements of 720 million tablets of chloroquine/amodiaquine over the next five year indigenous procurement on present indications would be possible only to the extent of 50 million tablets a year, there being no indigenous production to meet the estimated demand of 70 million tablets of primaquine. This situation underlines the urgent need for Ministry of Health, in consultation with Directorate General of Technical Development, to explore the scope for increasing/establishing indigenous production of insecticides and anti-malaria drugs. The Committee would like a plan of action to be drawn up for this purpose immediately.

[S. No. 14 (Paragraph 1.51) of Appendix V to 101st Report—4th Lok Sabha].

Action taken

Further increase in the indigenous production of insecticides (DDT) is under consideration of Ministry of Petroleum and Chemicals and D.G.T.D. and it is understood there is a proposal to start a new plant in Bombay for producing 700 tons of DDT.

For drawing a plan of action for increasing indigenous production of anti-malarias, a meeting was held between the officers of N.M.E.P Direcmtorate, Drugs Controller. D.G.T.&D on 13th January, 1970. The D.G.S.&D., indicated that 54 million chloroquine'amodiaquine tablets

could only be made available through indigenous sources and for the balance of 66 million tablets necessary foreign exchange has to be provided to the firms for importing ingredients.

[Department of Health O.M. No. F. 1—25/70—C&CD dated 4-1-1971]

ERA SEZHIYAN,
Chairman,
Public Accounts Committee

NEW DELHI;
August 31, 1971
Bhadra 9, 1893 (*S*).

APPENDIX

Summary of main conclusions/recommendations

S. No.	Para No.	Ministry/Department concerned	Conclusions/Recommendations
1	2	3	4
1.	1.4	Ministry of Health & Family Planning (Department of Health)	The Committee hope that final replies in regard to recommendations/observations to which interim replies have been furnished will be submitted to them expeditiously after getting them vetted by Audit.
2.	1.8	-do-	The Committee note that Government are taking steps to rectify the deficiencies in the National Malaria Eradication Programme. They trust that closer co-ordination will be maintained with State Governments who are the executing agency and hope that the Programme will be completed by 1975-76 according to the revised schedule without any further set-back.
3	1.9	-do-	The Committee would also like to emphasise the need for preparation of Budget estimates for the National Malaria Eradication Programme realistically in future so that there is no set-back to the programme for want of adequate funds.

4	1.12	-do-	The Committee note that the suggestion that the funds should be "budgeted for the whole programme, available at the planned date and be managed with necessary flexibility" is being examined in consultation with the Ministry of Finance. The Committee desire that an early decision should be taken in the matter and that they should be informed of it.
5	1.15	-do-	The Committee note that the question of further increase in the indigenous production of insecticides is under the consideration of the Ministry of Petroleum and Chemicals and DGTD. The Committee desire that serious attention should be paid to step up production of both insecticides and anti-malarial drugs in order to attain self sufficiency at any early date.
6	1.18	-do-	The Committee hope that as a result of the studies undertaken by the WHO for *inter alia* evolving cheaper methods, necessary economy would be effected in the cost of the present surveillance machinery consistent with its efficiency. The Committee desire that in the meantime the expenditure of surveillance machinery should be kept under constant review.
7	1.21	-do-	The Committee note that more than two-third of the total number of 2,653 vehicles placed at the disposal of the States for the implementation of the National Malaria Eradication Programme are 11 to 16 years old. The Committee would urge Government to

1	2	3	4
			impress upon the States the necessity to complete the survey of the vehicles expeditiously so that action could be taken thereafter to discard the vehicles which have outlived their life and replace them by new vehicles early.

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