

A
REPORT
ON
MEASLES IMMUNISATION

AT

ACTIONAID/ACCORD PROJECT
GUDALUR, NILGIRIS

BY

DR. ROOPA DEVADASAN
DR. N. DEVADASAN

DECEMBER 1987

ACTIONAID, PB 2527, 10/1 BRIDE STREET,
BANGALORE 560 025

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FOREWORD

This report is among the first few technical reports we have received from our projects in S. India in 1987.

Both Dr. Roopa and Dr. N. Devadasan are on their first jobs after graduating from Christian Medical College, Vellore, in 1987. Their enthusiasm, energy and caring work have already won them a special place in the hearts of the tribals of Gudalur taluk where they work.

And in our hearts.

This is an appropriate place to record a word of thanks to Dr. Mona Saxena of CHIRAG for helping us to persuade Roopa and Deva to join us.

STAN THEKAEKARA
MARI THEKAEKARA
SALIL SHETTY
AJIT MANI

11/2/1988

Bangalore

1. INTRODUCTION

Measles (anjampanni/podipanni/chinnamma) is a relatively benign disease in the well-nourished child, but in the under-nourished child it is a veritable killer and is a leading cause of death in the developing countries. Rightly it was considered a "paediatric priority" by J.T.Grayston way back in 1972 but unfortunately its potential as a killer was recognised rather belatedly by the medical profession. In spite of the existence of an effective vaccine since 1964 it was only in the late seventies that WHO included it in among the diseases against which all children should be immunised.

Measles is caused by a RNA virus which is spread via nasal and oral secretions. It is characterised by fever for 4-5 days followed by the appearance of a maculo-popular rash which lasts for 5-7 days. The maximum period of infectivity is 5 days before and upto 5 days after the rash. It is present in epidemic and endemic forms throughout the world; epidemics usually occur once every 2 or 3 years owing to an accumulation of susceptible population. The susceptible population is usually the 3-5 year age group, though in epidemics even 6 months old children have been reported to have the disease.

Measles per se is seldom fatal, the risk of death is due to malnutrition and other secondary complications like bronchopneumonia, diarrhoea, and recrudescence of pulmony tuberculosis (complication rate is 10%). In the developed countries mortality from measles is only 0.002% but in the developing nations mortality rates of 5% have been reported (Krugman). The malnourished child may have a mortality 400 times higher than his well-nourished counterpart. It is in the light of all the above-mentioned facts that we gave priority to the containing of this epidemic.

2. MEASLES EPIDEMIC - ERUMADU (1987)

The first news of this epidemic was brought in by our animator K.G.Bharathan on 16.10.87. He reported that children in Nedungode and Kappala tribal villages had come out in a rash following four to five days of fever. Due to logistic problems we could go there only on 19.10.87. In both the villages we saw children in various stages of measles. While some were still in the rhinitis/fever/koplik's spots stage others had florid rash, and yet others showed the typical brawny desquamation which follows the rash.

On enquiry we managed to trace the epidemic to its source. A family from Nedungode had gone over to Kerala for Onam (5.9.87) and returned by 12.9.87. On questioning, the mother said the children in that Kerala village had measles while they were there. On their return her child, Satish developed high grade fever and soon the full fledged symptoms of measles. A week later the neighbours' child, Chandran, developed the same symptoms. Being a school going boy, he spread the disease to his classmates and in this manner the disease entered the neighbouring tribal village of Kappala - through Suresh. By the time we appeared on the scene, 9 children had been affected at Kappala, 10 at Nedungode and 4 at Muttilmoola a nearby hamlet of the Kattunayacken tribe. This spread occurred through the Balwadi (See Appendix I). The surrounding villages had not been hit by the epidemic yet, but it was just a matter of time, for there were active foci of the disease and susceptible carriers - an ideal combination for the spread of an epidemic. In this case the susceptible population was not the usual 0-5 years age group (a measles epidemic comes once in three years) but 0-12 years (as the last epidemic in the region was 12 years ago). It was the older children who were spreading the disease to the neighbouring villages through their school contact.

In Summary:-

- (i) The measles epidemic was present in 3 villages.
- (ii) There was a danger of spill-over due to the transmission via the older Balwadi and school children.
- (iii) None of the susceptible population had been immunised by the local Government health worker.

3. IMMUNIZATION

The options open to us were :

- (i) Immunising all the under-fives in the surrounding belt; however this would involve a large area, as children from distant villages attend the GTR school.
- (ii) Immunising the susceptible transmitters of the disease i.e. the under-twelves attending the school as well as the under-fives in the immediate neighbourhood.

As the latter seemed logistically more feasible, we opted for this course of action.

The next problem was obtaining the vaccine. The local medical shops did not have the requisite amount and when we approached the local PHC we were requested to come back a week later. It was at this moment of need that the Rotary Club, Gudalur proved most helpful. Through them we were able to obtain 300 vaccines from Rotary Club, Ooty on the 22nd of October.

The first round of vaccination was done on 24th October. As the GTR school was given a holiday that day we started with the under-fives of the surrounding tribal villages. Kappala, Kappala Colony, Nedungode were finished in the morning and Oonimoola, Kothamangalam and Theyakuni by even-

ing. In all the villages we met with excellent co-operation, with one exception. In Oonimoola Paniya Colony, many parents had gone for work and the people available were unwilling to take responsibility for immunising the children. The children meanwhile took to their heels when they realised what we had come for.

The second round of vaccination was done on the 28th when we finished the GTR (Government Tribal Residential) School and the remaining villages - Chomara, Manalvayal Colony and Edapara (Ref. Appendix 2)

AGE-SEX DISTRIBUTION OF CHILDREN WHO HAD MEASLES

Age in months	Males	Females	Total
0 - 36	4	4	8
37 - 60	4	4	8
61 - 120	4	2	6
- 120	1	0	1

Total No. of Children Who had Measles - 23

Total No. of Children who had complications - 3

Bronchopneumonia - 2

Malnutrition - 1

% age of Children with complications - 13 %

Total No. of under-fives in villages covered	-	81
Total under-five population immunized	-	71
Immunization coverage	-	87.65%
Total No. of children immunized	-	161
No. of doses wasted	-	37

4. DISCUSSION

It must be understood that the population that we are talking of in the above-mentioned data refers specifically to the tribal population who form about 40% of the population in the area. The reasons why we limited ourselves to the tribals is mainly because the epidemic appeared to be located specifically among the non-tribal children seemed remote as there was negligible contact between the tribal and the non-tribal children (the tribal children rarely went out of their respective villages and the school children went to special tribal schools and Balwadis where the non-tribals did not come).

The striking fact that appears from the above data is that 7 out of 23 children (30%) were in the older age group. This is a very high figure and also accounts for the mode of spread of the disease.

The male/female ratio is more or less equal, 13/10, and is consistent with what is expected.

The percentage of complications is 13% and is a little higher than the average of 10%. But as the total number of cases is so small, we cannot comment on its statistical significance. Due to appropriate intervention, the cases of bronchopneumonia and malnutrition were treated immediately and there was no mortality.

The WHO recommends a coverage of more than 90% for eradication of measles and our coverage fell short by 2.5%. This was mainly due to the non-cooperation of the Paniya families. It will require much more intensive effort on our part to obtain their co-operation.

It was disheartening to note that though the Government Multipurpose Health Worker had knowledge of the measles epidemic, nothing constructive had been done.

The epidemic curve (Refer Appendix III) shows the typical pattern for an acute highly infectious communicable disease; with a steady increase in the number of cases over a period of time. We intervened before the curve peaked and during the surveillance period (of 2 incubation periods i.e. 20 days) there has been no further report of any new cases, either in the villages which we had immunised or in the surrounding villages. So we can safely conclude that the epidemic has been contained.

5. LIMITATIONS :

- i) The cases of measles could not be serologically confirmed and had to be based on clinical assessment.
- ii) The exact susceptible population could not be computed as the children over 5 years also were susceptible. For the sake of immunisation we immunised all the children under twelve.
- iii) Our surveillance was passive as we told the people to inform our animators if any new cases occurred. As our animators visit the concerned villages regularly we have assumed that the surveillance was fairly reliable.
- iv) The number of doses of measles vaccine wasted was very high as is expected in a field condition using a multi-dose vial which becomes unstable 60 mts after reconstitution.

6. COMMENTS

The purpose of the entire exercise was to contain the epi-

demio thus preventing the disease and its attendant complications in the susceptible population. Many may question the strategy adopted but keeping in view the shortage of time and the vast distances to be covered to reach the individual tribal villages, it was decided to prevent the spread by immunising those who could transmit the disease rather than immunising the "at risk" population. Only time will tell whether we have been successful. In all Kurumba villages there was enough awareness and motivation for the mothers to seek immunisation. At Oonimoola, some mothers had even to go to the fields to catch their fleeing children. The situation was just the opposite in the Paniya villages where the apparent indifference resulted in 10 children not getting the immunisation. More health education will be necessary among them before they are motivated enough. Our animators, Bharathan and Subramani proved invaluable for through their contacts our introduction into each of the villages was easy.

7. ACKNOWLEDGEMENTS

This record will not be complete without thanking the following people:

1. Mr. Philip of Rotary Club - Gudalur.
2. Dr. Ramakrishnan of Rotary Club.
3. Dr. Chandrasekhar of Pandalur P.H.C.
4. Mr. Mohan for driving the Land Rover to the most inaccessible places.
5. Mr. Bharadan.
6. Mr. K.T. Subramani.

Reference:

- (1) Text book of Preventive & Social Medicine - Park & Park
- (2) British Medical Journal July 1987.

APPENDIX - I

CHILDREN WHO HAD MEASLES

No.	Name	Age	Sex	Fathers Name	Mother's Name	Village
1.	Sathish	2½	M	Krishnan	Thangamani	Nedungode
2.	Chandran	6	M	Balan	Sikku	"
3.	Omana	10	F	Balan	Sikku	"
4.	Shobana	4	F	"	"	"
5.	Rathish	5	M	Kariyan	Noom	"
6.	Sathiya	4	F	"	"	"
7.	Sharmila	8/12	F	"	"	"
8.	Vinod	10/12	M	Govindan	Madhavi	"
9.	Sunil	2	M	Balan	Sikku	"
10.	Suresh	10	M	Kunjukannan	Panchali	Kappala
11.	Bindu	7	F	Kumbali	Thanga	"
12.	Rajan	6	M	Raman	Armani	Muttilmoola
13.	Sandhya	1	F	Krishnan	Thangamani	Nedungode
14.	Surendran	13	M	Kunjuraman	Valli	Kappala
15.	Subedara	4	F	"	"	"
16.	Rathish	4	M	Koravan	Madhavi	"
17.	Anish	2	M	Ambadi	Sumitra	"
18.	Murali	4	M	Nambiar	Janaki	"
19.	Santhosh	4	M	Krishnan	Sharada	"
20.	Sandhya	2	F	"	"	"
21.	Bindu	1	F	Raman	Armani	Muttilmoola
22.	Gopi	3	M	Ramakrishnan	Shanta	"
23.	Lakshmi	4	F	Vallithan	Thangamani	"

LAST YEAR

24.	Jayan	4	M	Achuthan	Ruckmani	Theyyakunni
25.	Rajendrakumar	4	M	Raman	Meenakshi	"

APPENDIX - II

CHILDREN WHO RECEIVED MEASLES VACCINE

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
1.	Siddharthan	2	M	Sekaran	Thanga	Kappala
2.	Sundar	4	M	Sekaran	Devi	"
3.	Preetha	3	F	"	"	"
4.	Sajitha	4	F	Kumaran	Sirida	"
5.	Manoj	4	M	Sridharan	Paru	"
6.	Lekha	3	F	Achu	Nani	"
7.	Sindhu	10	F	Damodaran	Madhavi	"
8.	Karunakaran	9	M	Nambiar	Janaki	" "
9.	Rekha	9	F	Achuthan	Nani	"
10.	Vinu	10	M	Nambiar	Janaki	"
11.	Rajesh	2	M	Kariyan	Noom	Nedungode
12.	Sathyaraj	2	M	Sekharan	Madhavi	"
13.	Sunil	1	M	Sankaran	Koyima	"
14.	Vinita	2	F	"	"	"
<u>KAPPALA COLONY</u>						
15.	Baby	1	F	Valli	Leela	K.Colony
16.	Vijayan	6/12	M	Chadayan	Keera	"
17.	Leels's Baby	6/12	M	Valli	Leela	"
18.	Karnan	5	M	Kongula	Onathi	"
19.	Badichi	1	F	Bomman	Devi	Kothamangalam
20.	Ketan	3	M	"	"	"
21.	Bomman	2	M	"	"	"

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
22.	Badichi	4	F	Maran	Mari	"
23.	Sreja	3	F	Velayudhan	Janaki	"
24.	Sindhu	3	F	"	"	"
25.	Latha	4	F	Elumban	Sanna	"
26.	Janagi	2	F	"	"	"
27.	Achuthan	5	M	Chippan	Chakki	"
28.	Naranan	3	M	Chippan	Chakki	"
29.	Sureshbabu	4	M	Balan	Kalyani	"
30.	Raju	3	M	Soman	Ammani	"
31.	Babu	2	M	Sangu	Thangan	"
32.	Bindu	5	F	"	"	"
33.	Saritha	2	F	Chandu	Madevi	Theyyakunni
34.	Ramani	4	F	"	"	"
35.	Binita	4	F	Krishnan	Unni	"
36.	Sowmini	2	F	"	"	"
37.	Sajitha	1	F	Thangappan	Savithri	Theyyakunni
38.	Sumitra	2½	F	Narayana	Shanta	"
39.	Rajanni	3½	F	Thambi	Thangamani	Theyyakunni
40.	Sumitra	4	F	Payyan	Karppai	"
41.	Sibu	3	M	Kokkilan	Karthyani	"
42.	Sheeb	5	F	"	"	"
43.	Sasi	4	M	Madhavan	Kamalakhi	"
44.	Esodha	6	F	Velukkan	Sarada	G.T.R.
45.	Pushpa	3	F	Narayanan	Chivangi	Oonomoola
46.	Dinesh	5	M	"	"	"
47.	Rajani	3	F	Raghavan	Poli	"

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No.	Name	Age	Sex	Father's Name	Mother's Name	Village
48.	Rathish	5	M	"	"	"
49.	Saritha	4½	F	Bottan	Kamala	"
50.	Bandhya	1	F	"	"	"
51.	Sunitha	5	F	Gopalan	Rukmini	"
52.	Sabitha	2½	F	Balla	Thanka	"
53.	Sawemeni	4	F	"	"	"
54.	Pathyva	1½	F	Madhavan	Omana	"
55.	Prakash	5	M	Thondan	Kallyani	"
56.	Sukanthy	5	F	Achuthan	Devaki	"
57.	George	5	M	Kellu	Aemini	"
58.	Jeyan	5	M	"	"	" "
59.	Perumal	5	M	Kumaran	Leela	"
60.	Baby	1½	M	kavelan	"	"
61.	Baby	3	F	Ravi	Manalvayal Colony	
62.	Vasanth	4	F	Ravi		"
63.	Vijayan	4	M	Elumban		"
64.	Susheela	3	F	"		"
65.	Ruckmani	3	F	Vallithan	Nagayani	"
66.	Mani	4	M	Kelukka		"
67.	Shippi	4	F	Kunjan		"
68.	Kallingari	3	F	Elumban		"
69.	Mani	4	F	Chathu		"
70.	Sredevi	3	F	Chathu		"
71.	Thanka	9 months	F	Narayanan	Kalyani	"
72.	Chandran	6 months	M	Baskaran	Leela	"
73.	Gopalkrishnan	6	M	Mallyappan	Saraswathy	Cherangode
74.	Manoju	6	M	Kappchani	Leela	Ma-pela

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
75.	Paramasivan	6	M	Sayandy	Ranthasy	"
76.	Madu	6	M	Baskaran	Janaki	Narivalappu
77.	Venode	6	M	Sreetharan	Paru	Kappala
78.	Rajan	6	M	Raman	Amini	Moodelmala
79.	Manikandan	6	M	Nagarajan	Easwary	Kappala
80.	Palani	6	M	Karian	Nuni	Nedungode
81.	Vasatje	6	M	Krishnan	Malarwely	Kappala
82.	Santhan	6	M	Thampy	Janaki	"
83.	Ragaswamy	7	M	Govintharaj	Sollyam	"
84.	Maran	7	M	Thondan	Karuppy	Somara
85.	Chikunan	8	M	Chadyan	Kalyani	Kudade
86.	Saravanan	7	M	Armugan	Sanda	Kappala
87.	Veluthan	7	M	Chikunan	Seenama	Kappala
88.	Karalan	7	M	Verku	Kanndiche	Somara
89.	Nani	7	M	Kannaran	Karuppy	"
90.	Sevan	7	M	Sindan	Kera	Kappala
91.	Vasu	7	M	Kurukkan	Selve	"
92.	Kovalan	7	M	Chikunan	Sennamma	Kudade
93.	Lalytha	6	F	Kanjekan	Vellura	Nedungode
94.	Pereya	6	F	Sekaran	Devu	Kappala
95.	Sujatha	6	F	Kunjuraman	Vally	Kappala
96.	Mavetha	6	F	Sertharan	Paru	"
97.	Visalakshi	6	F	Nelyappan	Saraswathy	Gudalur
98.	Rajesh	6	M	Kariyan	Nuni	Nedungode

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
99.	Nera	6	F	Velukkan	Podave	Kappala
100.	Deva	7	F	Kumpany	Tanka	"
101.	Girija	6	F	Koravan	Mathavi	"
102.	Manjula	6	F	Armugam	Santa	Nedungode
103.	Latha	6	F	Kanjukkan	Vellura	Ma-pela
104.	Venkadaranan	7	M	Kuppuswamy	Leela	"
105.	Lisa	6	F	Lorense	Mari	Kappala
106.	Nallu	7	F	Elumban	Ammu	"
107.	Thankamani	6	F	Karuppan	Leela	Nedungode
108.	Benu	7	F	Nanjan	Leela	Uluvade
109.	Govalan	6	M	"	"	"
110.	Santa	7	F	Karuppan	Leela	Kappala
111.	Seetha	6	F	"	"	Uluyade
112.	Rathish	5	M	Koravan	Mathavi	Kappala
113.	Rajan	11	F	Paythal	Nani	"
114.	Sakukala	11	F	Koravan	Mathavi	"
115.	Rathi	12	F	Sukura	Devaki	"
116.	Ajeetha	11	F	Nanu	Devaki	Kallichal
117.	Leela	11	F	Sukura	Devaki	Kappala
118.	Kawsalya	10	F	Thampy	Janaki	Kappala
119.	Manjula	10	F	Sekaran	Devi	"
120.	Jayasri	10	F	Mohan	Suseela	Nedungode
121.	Sumathy	10	F	Muniake	Sole	Ma-pela
122.	Jayalakshmi	10	F	Thangavel	Lakshmi	Cherangode
123.	Anade	10	M	Thoraraju	Nan	Ma-pala

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
124.	Ramesh	10	M	Kumaran	Seruda	Kappala
125.	Sasikumar	10	M	Kanjekan	Vellura	Nedungode
126.	Ramesh	10	M	Govindan	Madhavi	"
127.	Janasekaran	10	M	Ramjen	Fakampal	Ma-pela
128.	Alankarasamy	10	M	Muniandi	Sole	"
129.	Venu	8	F	Kumbally	Thanka	Kappala
130.	Sarala	8	F	Karian	Nune	Nedungode
131.	Lakshmi	11	F	Govindasami	Solamma	Kappala
132.	Ganesh	8	M	Kumaran	Sertha	"
133.	Sulakaran	8	M	Kalu	Mena	"
134.	Raju	8	M	Kavelan	Kavery	"
135.	Rajkumar	8	M	Somanathan	Lakshmi	Ma-pala
136.	Sathiyar	8	M	Thampy	Janaki	Kappala
137.	Rajan	8	M	Kanakaraj	Saroja	Kappakunnu
138.	Jayaseelan	8	M	Mohan	Suseela	Nedungode
139.	Sajeetha	9	F	Sekaran	Madhavi	"
140.	Rajami	9	F	Kariyan	Nani	"
141.	Meni	9	F	Sertharan	Paru	Kappala
142.	Vendu	9	F	Sankaran	Devu	Medungode
143.	Kunjanadeva	9	F	Arumugam	Saraka	Kappala
144.	Sera	12	F	Palan	Karuppy	Devala
145.	Devakaram	9	M	Kallu	Meena	Kappala
146.	Kandasami	9	M	Muniande	Ramathy	Ma-pela
147.	Murugesh	9	M	Krishnan	Malavathy	Kappala
148.	Sathyan	11	M	Sekaran	Madhavi	Nedungode

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
149.	Gunasekaran	11	M	Arumugham	Santha	Kappala
150.	Muralidharan	11	M	Sekaran	Devaky	Kallichal
151.	Mohankumar	11	M	Konson	Janu	Modakundu
152.	Rawanan	10	M	Koravan	Mathavi	Kappala
153.	Shanmughan	1½	M	Chipran	Janu	Modakundu
154.	Malu	3	F	Kannaran	Saratha	Komara
155.	Govelan	2	M	Samy	Kampy	"
156.	Meena	5	F	Komaran	Saratha	Komara
157.	Seven	1	M	Kurukkan	Selvy	"
158.	Saryan	3	M	Verukku	Kandichy	"
159.	Malu	1	F	"	"	"
160.	Thanga	9 mts	M	Narayanan	Kalyani Manalvayal Colony	
161.	Chandran	6	M	Bhaskaran	Leela	"

MEASLES IMMUNISATION - CHILDREN WHO RECEIVED VACCINE

ON NOVEMBER 11th 1987

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
1.	Mahesh	10m	M	C.Matha	Thayamma	Kurumbapalayam
2.	Alama	1½	F	Gurmala	Balli	"
3.	Rani	2	F	Krishna	Baswi	"
4.	Bagya	5	F	Gurmala	Balli	"
5.	Sivamma	2½	F	Baswa	Nagi	"
6.	Gopi	4	F	Linga	Shantai	"
7.	Ganga	3	F	Pappa	Kali	"
8.	Kumar	8m	M	Mara	Gopa	"
9.	Vijaya	1	F	Krishna	Baswi	"
10.	Kumar	2	M	Kunmari	Kutty	"
11.	Mahadeva	5	M	Krishna	Baswi	"
12.	Lakshmi	4	F	Kunmari	Kutty	"
13.	Mahadevi	1	F	Jabara	Masani	"
14.	Shiva	1	M	Matha	Kali	"
15.	Basavi	2	F	Jadian	Mara	"
16.	Gopi	4	F	Gopa	Jadamathi	"

KODUMoola ON NOV. 6, 1987

1.	Maran	1½	M	Mathan	Chikkethi	Kodumoola
2.	Mathan	4	M	Mudakethan	Odimari	"
3.	Manbi	10	F	K.Nanjan	Chickmari	"
4.	Mari	3	F	K.Kalan	Sunmathi	"
5.	Kethan	3	M	K.Mathan	Badchi	"

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
6.	Mathan	2	M	C.Bomman	Jaya	"
7.	Mathan	1½	M	M.Kalan	Kirnu	"
8.	Panman	4	M	M.Kalan	Girja	"
9.	Mathi	3	F	M.Kalan	Girja	"
10.	Mari	1	F	B.Banman	M.Shanthi	"
11.	Bonmi	4	F	"	"	"
12.	Maran	4	M	K.Kalan	Sunmathi	"
13.	Badchi	3	F	Muradan	Mari	"
14.	Mathan	1	M	A.Bomman	B.Mari	"
15.	Maran	3	M	Muradan	B.Mari	"
16.	Mari	4		Muradan	B.Mari	"
17.	Bonmi	8	F	Murudan	B.Mari	Kodumoola
18.	Maran	4	M	Mathan	K.Badchi	"
19.	Mathi	4	F	B.Kethan	Manbi	"

2 children in Bokkapuram

2 children in GTR School

1 child (mother away) ran away

1 mother refused to immunise child.

* NAICKER POPULATION REFUSED

WASTED - 1 dose

IMMUNISATION - MEASLES ON 12.11.87

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
1.	Manjili	2	F	Mastha	Chenanji	"
2.	Jaya	1	F	Siddha	Machi	"
3.	Shivappa	1	M	Basava	Madevi	"
4.	Madeva	4	M	Rangaswami	Dundi	"
5.	Ramesh	1½	M	Ramaraj	Manbi	"
6.	Chitra	1½	F	Bojan	Kamala	"
7.	Easwaran	2½	M	Bantan	Lakshmi	"
8.	Sasikumar	3	M	K.Ravi	Thangamani	"
9.	Bommi	3	F	Madan	Manbi	"
10.	Chitra	3	F	Madan	Bommi	"
11.	Badchi	2	F	Krishnan	Madevi	"
12.	Manban	3	M	"	"	"
13.	Sarasu	2	F	Siddha	Jayamma	"
14.	Sathish	4½	M	Mathan	Jaya	"
15.	Kamili	3	F	Jadayan M.	Balli	"
16.	Sarasu	1½	F	"	"	"
17.	Chikki	2	F	Giddan	Pulli	"
18.	Shiva	2	M	Jadayan	Kalli	"
19.	Chandri	1½	F	Madan	Manbi	"
20.	Vijaya	4½	F	Madan	Manbi	"
21.	Shanti	3	F	Rajan	Mara	"
22.	Suresh	7m	M	Banta	Chikai	"
23.	Manju	1½	F	Lingan	Mara	"
24.	Pushpa	3	F	Badra	Lakshmi	"
25.	Sunil	1½	M	"	"	"

No.	Name	Age	Sex	Father's Name	Mother's Name	Village
26.	Masana	4	M	Bomman	Valli	"
27.	Sujatha	3	F	Bomman	Mari	"
28.	Ganesa	2	M	Rangaswami	Dhundi	"
29.	Anbarasi	1	F	Father absent	Lakshmi	"
30.	Vijaya	1½	F	Manban	Rajamma	"
31.	Mathan	4	M	Manban	Rajamma	"
32.	Raman	3	F	Muthu	Kamakshi	"

APPENDIX - III

EPIDEMIC CURVE

REPORT OF MEASLES CASES

MEASLES CONFIRMED

VACCINATION (ROUND 1)

VACCINATION (ROUND 2)

TWO INSUBSTANTIAL PERIODS

SURVEILLANCE MAINTAINED

