

Summer Training at



NRHM, Andhra Pradesh

**Strengthening of Routine Immunization in Urban & Peri-Urban Areas of
Visakhapatnam District (Planning and Implementation)**

**By
Priyamvada**

**Under the guidance of
Dr. Vivek Lal**

**Post Graduate Diploma in Hospital and Health Management
2011-2013**



**Institute of Health Management Research,
Jaipur
2012**

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Certificate

This is to certify that Priyamvada has undergone summer training in NRHM, Andhra Pradesh from 9th April to 1st June, 2012

The candidate carried out all the studies related to summer training herself. Her approach to the studies has been sincere, scientific, and analytical. This summer training in partial fulfillment of the course requirement is recommended for the award of Post Graduate Diploma in Hospital & Health Management.

I wish her success in all future endeavors.

Dr .P. R.Sodani

(Dean Academics and student affairs)

Dr. Vivek Lal

(Assistant Professor)

Certificate of Completion

This certificate has been awarded to

DR. PRIYAMVADA

(Institute of Health Management Research, Jaipur)

For successfully completing the her summer internship and the project on

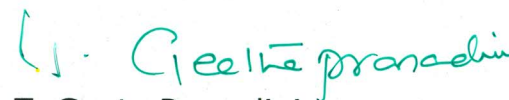
**“STRENGTHENING OF ROUTINE IMMUNIZATION IN URBAN AND PERI-URBAN AREAS
(PLANNING AND IMPLEMENTATION)”**

Under the Guidance of



Sri K.R. Kishore

(Principal Secretary, Dept. of HM&FW, Govt. of AP)



Dr. T. Geeta Prasadini

(Addl. Director, DCP, Director of PH&FW, Govt. of AP)



National Rural Health Mission, Andhra Pradesh



Acknowledgement

I hereby offer my sincere and profound thanks to National Rural Health Mission, Andhra Pradesh for giving me an opportunity to learn and experience the from such a challenging project and also for the guidance provided to us throughout our project. I would single out Shri. K.R. Kishore, Principal Secretary, Department of Health & Family Welfare for providing me this opportunity and Dr. T. Geetha Prasadini, Additional Director (DCP), Director of Public health & family welfare and my project mentor, for her constant guidance and support without whom my project would have reflected my inexperience and lacked present quality.

I would also like to thank our esteemed faculty members and my project guides Dr. P.R. Sodani and Dr. Vivek Lal. Without their constant guidance and suggestions would have lacked polish and direction.

Dr. Priyamvada

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INTRODUCTION

India's Immunization Program is one of the largest in the world in terms of quantities of vaccines used, numbers of beneficiaries, and the numbers of immunization sessions organized, the geographical spread and diversity of areas covered. Under the immunization program, six vaccines are used to protect children and pregnant mothers against Tuberculosis, Diphtheria, Pertussis, Polio, Measles and Tetanus. Poor routine immunization coverage in India has led to a large burden of vaccine-preventable diseases borne by children under 5 years of age. Despite efforts to strengthen infrastructure and service delivery in the past decade, immunization coverage rates have reached a plateau. This project reviews the immunization coverage in the urban and peri-urban areas and examines the potential contribution strengths towards strengthening immunization services in urban and peri-urban India. Delivering effective and safe vaccines through an efficient delivery system is one of the most cost effective public health interventions. Immunization programmes aim to reduce mortality and morbidity due to vaccine preventable diseases (VPDs).

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Literature Review

Effectiveness of Muskaan ek Abhiyan (The Smile Campaign) for strengthening routine immunization in Bihar, India. Goel S, Dogra V, Gupta SK, Lakshmi PV, Varkey S, Pradhan N, Krishna G, Kumar R.

Source

Departments of Health Management, School of Public Health, PGIMER, Chandigarh

In Bihar State, proportion of fully immunized children was only 19% ;in Coverage Evaluation Survey of 2005. In October 2007, a special campaign called Muskaan Ek Abhiyan (The Smile Campaign) was launched under National Rural Health Mission to give a fillip to the immunization program. The campaign aims to evaluate improvement in the performance and coverage of the Routine Immunization Program consequent to the launch of Muskaan Ek Abhiyan. The main strategies of the Muskaan campaign were reviewing and strengthening immunization micro-plans, enhanced inter-sectoral coordination between the Departments of Health, and Women and Child Development, increased involvement of women groups in awareness generation, enhanced political commitment and budgetary support, strengthening of monitoring and supervision mechanisms, and provision of performance based incentive to service providers.

Periodic intensification of Routine Immunization (PIRI)- lessons learned and implications for action, produced by the IMMUNIZATION basics Project.

The paper aims to contribute to the effective planning and implementation of future PIRI-type activities by examining experiences to date and implications for future action. It briefly summarizes key findings and lessons learned from PIRI-type experiences in many countries and offers practical suggestions by program area for health planners and managers who are considering implementing such activities. The paper is based on a review of existing documentation and interviews with people who have carried out such activities.

Expanding immunization coverage in rural India: a review of evidence for the role of community health workers.

Patel AR, Nowalk MP

Poor routine immunization coverage in India has led to a large burden of vaccine-preventable diseases borne by children under 5 years of age. Despite efforts to strengthen infrastructure and service delivery in the past decade, immunization coverage rates have reached a plateau. This article reviews the effectiveness of CHWs in expanding immunization coverage in developing countries and examines the potential contribution of CHWs toward strengthening immunization services in rural India.

‘WHEN WILL THEY EVER LEARN?’: THE GREAT INDIAN EXPERIENCE OF UNIVERSAL IMMUNISATION PROGRAMME

NILANJAN PATRA

The study attempts to analyze the effects of some selected demographic and socioeconomic predictor variables on the likelihood of immunization of a child for six vaccine-preventable diseases covered under Universal Immunization Programme (UIP). It focuses on immunization coverage across India with special emphasis on three groups of states, viz., Empowered Action Group, North-Eastern and Other states. The likelihood of immunization increases with urban residence, mother's education level, mother's age, mother's exposure to mass media, mother's awareness about immunization, antenatal care during pregnancy, SLI or wealth index, household electrification, mother's empowerment index, and caste/tribe hierarchy. Emphasis on these demand enhancing factors is necessary to make the immunization programme universal.

RESEARCH METHODOLOGY

The project mainly focuses on understanding the routine immunization process being followed under the National Rural Health Mission and the key areas to be strengthened to improve its coverage in the urban and peri-urban areas of Visakhapatnam district. So to understand the process and its effectiveness some of the health centers in Visakhapatnam district were visited and studied.

OBJECTIVES

- To find out the key areas to be strengthened during planning and implementation of routine immunization in the urban and peri-urban areas of Visakhapatnam district.
- To suggest effective and efficient ways to strengthen routine immunization.

RESEARCH PLAN

The research consists of a research plan and a pre-defined schedule. The research plan consists of following steps.

1. Data sources
2. Research approaches
3. Research instruments

Data sources

Primary research: questionnaire was designed for the medical officers, auxiliary nurse midwives, anganwadi workers, accredited social health activists and community health volunteers involved in routine immunization sessions at sub-centers/ primary health centers/ urban health centers.

Research Approaches:

Survey methods: the survey was done by visiting three types of health centers (Urban health centers, semi-urban primary health center, rural primary health center and a sub- center). The entire primary data from universal immunization program reports and NRHM monthly reports were recorded in person.

Research instruments:

A questionnaire (annexure-1) consisting of 13 close ended, fully structured questions was used to understand the information, education and communication activities under routine immunization.

The sub- center microplan for planning of routine immunization suggested by National Rural Health Mission was used for estimation of beneficiaries and vaccine doses for the month of march for a given health center.

Health centers under the study

1. Urban health center, Chengalaraopeta
 2. Urban health center, Arilova
 3. Primary health center, Madhurwada
 4. Primary health center, R. Tallavalasa
 5. Sub- center, Ch. Uppada
 6. Gandhi Hospital, Hyderabad
- All the health centers cover mainly the high risk population (fishermen, nomads, slum dwellers with migration, construction workers, others) and hard to reach areas.
 - Gandhi hospital, Hyderabad was studied to understand the routine immunization process at state level mainly in the slum areas.
 - Urban health centers Chengalaraopeta and Arilova come under Greater Visakhapatnam Municipal Corporation.
 - Primary health center, Madhurwada is a semi-urban health center catering to both an urban and a rural population.
 - Primary health center, R. Tallavalasa is completely rural health center.
 - Sub-center, Ch. Uppada was taken to understand the work of routine immunization at micro level.
 - The three types of health centers were chosen with the aim to understand the working at different levels and get an overview of the entire routine immunization process.

Data collected from the five health centers and its analysis

The details of the primary data collected from the five health centers and its analysis is given for each health center.

A comparative study of the routine immunization process at the five health centers is also done.

URBAN HEALTH CENTER, CHENGALARAOPETA

UHC Chengalaraopeta is a high- risk area (fishermen area, slum migration) GVMC hospital catering to a population of 15,456.

Target pregnant women for the month of April, 2012	27
Target infants for the month of April, 2012	18

Beneficiaries for April 2012 for each vaccine and vitamin A	TT	BCG	DPT	OPV	Hepatitis B	Measles	DT	Vitamin A
Calculated number	54	18	72	72	54	18	18	162
Actual number	36	18	70	88	70	24	0	0

- TT immunization among antenatal women is less than calculated number of target pregnant women for the vaccination.
- As there is a floating population in the high risk areas leading to increased in migration and out migration, there are more number of infants vaccinated than the calculated target.
- Also, the target infants registered includes only the newborns registered in the antenatal register. It excludes the infants who were not registered in the antenatal register of the specific area and were not immunized previously.

MAN POWER &IMMUNIZATION SESSIONS

The following chart shows the number of Auxiliary nurse mid-wife (ANMs), Community health volunteers (CHVs) and sessions held in each ward.

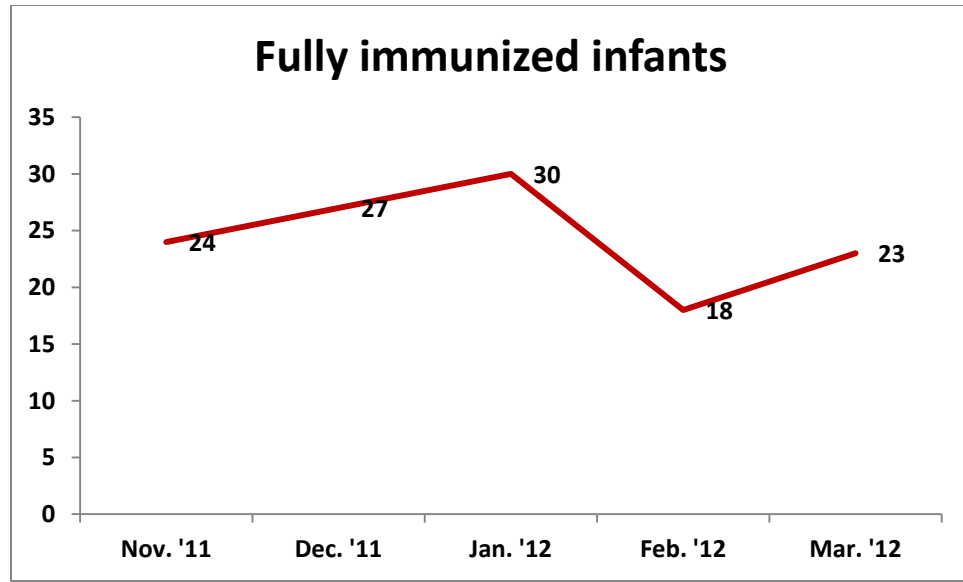
WARD NUMBER	POPULATION	NUMBER OF ANMs	NUMBER of CHVs	NUMBER OF SESSIONS HELD
21	7808	1	2	4 Wednesdays & 4 Saturday s(8)
22	7648	1	2	4 Wednesdays & 4 Saturdays (8)

- From the chart we can see that there is 1 ANM and 2 CHVs for each ward and each ANM is supervising an equal population of more than 7000. This has made the task of registration and recording easier and more efficient.
- The number of sessions held is in accordance with the requirement.

DROP-OUT RATE

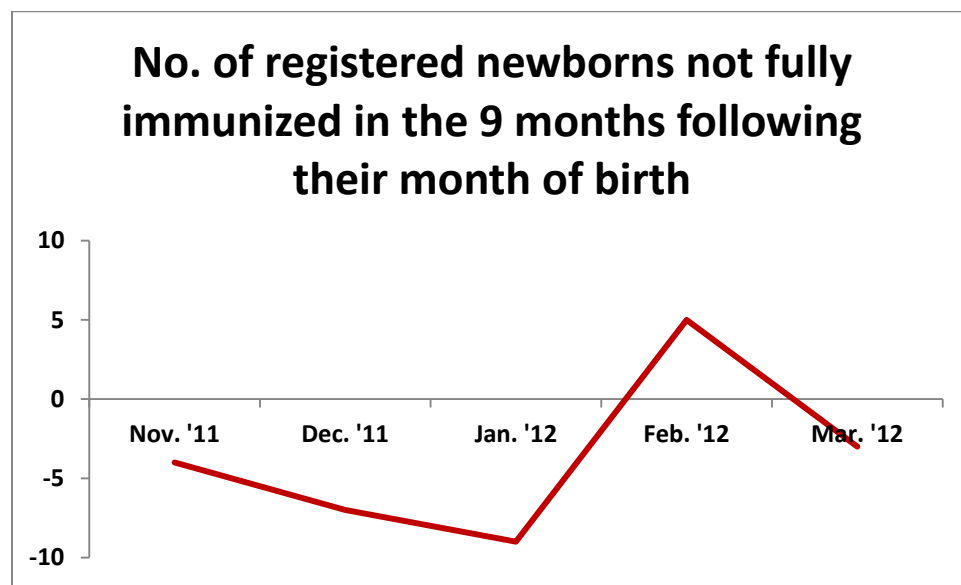
DATA NOT AVAILABLE.

Fully immunized infants between 9 and 11 months.	Total live births 9 months before the corresponding fully immunized month	No. of registered newborns not fully immunized in the 9 months following their month of birth
March 2012 - 23	July 2011 - 20	-3
February 2012 - 18	June 2011 - 23	5
January 2012 - 30	May 2011 - 21	-9
December 2011 - 27	April 2011 - 20	-7
November 2011 - 24	March 2011 - 20	-4



GRAPH-1

- Graph 1 represents a gradual rise in the number of fully immunized infants but in February there was a steep decline followed by an increase in the month of March.
- Chengalaraopeta is mostly resided by fishermen and there is a continuous in migration and out migration as per changing occupational seasons.



GRAPH-2

- Graph 2 represents a decreased number of not fully immunized infants from November 2011 to January 2012 but there is an abrupt increase in the month of February followed by a decrease in the month of March, 2012.
- The UHC caters to a population comprising mostly of floating population leading to an increased in migration and out migration of population. As a result, there is always a difference between the registered births 9 months prior to complete immunization and the fully immunized infants following it.

VACCINE SUPPLY, CONSUMPTION AND WASTAGE

Vaccine	Total stock of the vaccine	Total number of beneficiaries	Vaccine doses required (based on the number of beneficiaries and wastage factor of 1.33)	Vaccine doses consumed	Wastage
DPT (DPT+ 5yrs DT+ DPT booster)	200	100	133	170	37
OPV (OPV+ OPV booster)	200	86	114	170	56
Hepatitis B	200	70	93	170	77
BCG	100	18	24	60	36
Measles+ booster	100	24	32	70	38
TT+ TT 10yrs+ TT 16 yrs	100	51	68	70	2

- From the above table it is seen that there is a high wastage of OPV and BCG vaccine doses.
- This high wastage is attributed to intermittent live births due to which entire vial need to be disposed off for one or two newborns.

URBAN HEALTH CENTER, ARILOVA

UHC Arilova is a GVMC hospital catering to a high risk population of 93,700 in Visakhapatnam district.

Target pregnant women for the month of March, 2012	47
Target infants for the month of March, 2012	43

Beneficiaries for March 2012 for each vaccine and vitamin A	TT	BCG	DPT	OPV	Hepatitis B	Measles	DT	Vitamin A
Calculated number	94	43	172	172	129	43	43	387
Actual number	61	61	210	270	186	93	0	0

- TT immunization among antenatal women is less than calculated number of target pregnant women for the vaccination.
- As there is a floating population in the high risk areas leading to increased in migration and out migration, there are more number of infants vaccinated than the calculated target.
- Also, the target infants registered includes only the newborns registered in the antenatal register. It excludes the infants who were not registered in the antenatal register and were not immunized previously in the specific area.

MAN POWER & IMMUNIZATION SESSIONS

The following chart shows the number of auxiliary nurse midwives (ANMs), community health volunteers (CHVs) workers and sessions held in each ward.

WARD NO.	POPULATION	NUMBER OF ANMs	NUMBER CHVs	NUMBER OF SESSIONS HELD
1	17,294	1	2	4 Wednesdays, 4 Saturdays (8)
2	19,566	1	2	4 Wednesdays, 4 Saturdays (8)
7	15,803	1	2	4 Wednesdays
8	7,303	1	2	4 Wednesdays

- As compared to UHC Chengalaraopeta where there is 1 ANM and 2 CHVs per 7000 population, UHC Arilova has 1 ANM and 2 CHVs for more than 15000 populations. This leads to inefficiencies in recording and registrations.
- The number of sessions held is in accordance with the requirement.

DROP- OUT RATE

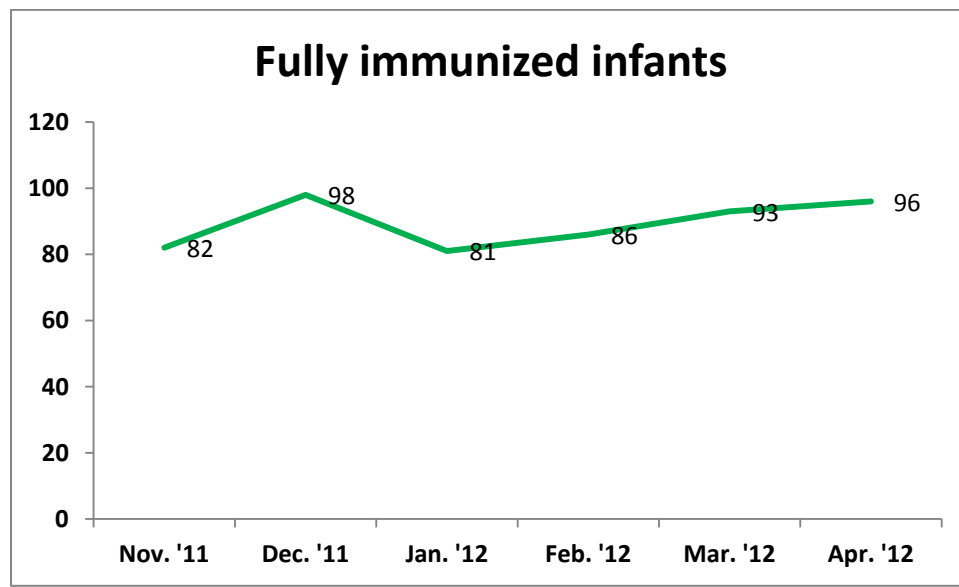
Drop- out rate= (Cumulative DPT1- Cumulative DPT3) /DPT1 Cumulative total

$$= (608- 599)/ 608$$

$$= \mathbf{1.54\%}$$

A drop- out rate of 1.54% is significant of the fact that there are 1.54 drop- outs for every 100 population.

Fully immunized infants between 9 and 11 months.			Total live births 9 months before the corresponding fully immunized month	No. of registered newborns not fully immunized in the 9 months following their month of birth
April 2012	-	96	DATA NOT AVAILABLE	DATA NOT AVAILABLE
March 2012	-	93		
February 2012	-	86		
January 2012	-	81		
December 2011	-	98		
November 2011	-	82		



GRAPH-3

- Graph 3 represents a gradual increase in the number of fully immunized infants from November 2011 to April 2012.

VACCINE SUPPLY, CONSUMPTION AND WASTAGE

Vaccine	Total stock of the vaccine	Total number of beneficiaries	Vaccine doses required (based on the number of beneficiaries and wastage factor of 1.33)	Vaccine doses consumed	Wastage
DPT (DPT+ 5yrs DT+ DPT booster)	270	311	414	210	-204
OPV (OPV+ OPV booster)	800	316	420	400	20
Hepatitis B	380	186	247	140	-107
BCG	150	61	81	30	-51
Measles+ booster	140	93	124	30	-94
TT+ TT 10yrs+ TT 16 yrs	490	103	137	120	-17

- From the above table it is seen that there is a discrepancy in the number of beneficiaries vaccinated at the health center and the total number of vaccines consumed.

PRIMARY HEALTH CENTER, MADHURWADA

This is a primary health centre located in the semi- urban area of Visakhapatnam district. It covers a population of 81,529 spanning over 48 villages.

Target pregnant women for the month of April, 2012	162
Target infants for the month of April, 2012	108

Beneficiaries for March 2012 for each vaccine and vitamin A	TT	BCG	DPT	OPV	Hepatitis B	Measles	DT	Vitamin A
Calculated number	324	108	432	432	324	108	108	108
Actual number	185	81	370	423	370	85	0	0

As we can see the calculated beneficiaries are more than the actual number of beneficiaries who have received immunization. This is mainly attributed by the following factors.

- As the PHC caters to a population more than 80000 (IPHS norm- 30000 population for 1 PHC in plain areas), there are serious problems associated with registration and field recordings.
- The former proforma for calculating the target pregnant women, was removed which led to inclusion of reduced number of pregnant women for TT vaccination while recording.
- In the calculated number for DPT beneficiaries 4 doses of DPT are taken whereas primary data provides beneficiaries for 3 doses of DPT.

MAN POWER & IMMUNIZATION SESSIONS

The following chart shows the number of auxiliary nurse midwives (ANM), accredited social health activist (ASHA) workers and sessions held at each sub- centre..

SUB- CENTER	POPULATION	NUMBER OF ANMs	NUMBER ASHA WORKERS	NUMBER OF SESSIONS HELD
Madhurwada-1	14,916	Vacant (1 hiring ANM)	13	4 Wednesday s, 4 Saturday s (8)
Madhurwada- 2	12,856	1	10	4 Wednesday s, 4 Saturday s (9)
Chandrapalem	6,944	1	4	1 st Wednesday, 4 Saturday s (5)

Endadda- 2	10,944	1	7	1 st Wednesday, 3 Saturday s (4)
Endadda- 1	6,940	1	4	1 st Wednesday, 4 Saturdays (5)
Adarshnagar	12,705	Vacant	3	1 st Wednesday, 4 Saturday s (5)
Sagarnagar	6,394	Vacant (1 hiring ANM)	4	1 st Wednesday, 3 Saturdays (4)
Vishalakshinagar	9,830	Vacant	4	1 st Wednesday, 3 Saturday s (4)

- From the chart we can see that there are 4 vacant posts for ANMs, which needs to be filled immediately so as to strengthen the registration process.
- Adarshnagar and Vishalakshinagar sub- centers are facing an acute man power shortage with no ANM and only 3 and 4 ASHA workers for a population of over 12000 and 9000 respectively.
- The number of sessions held is in accordance with the requirement.

DROP- OUT RATE

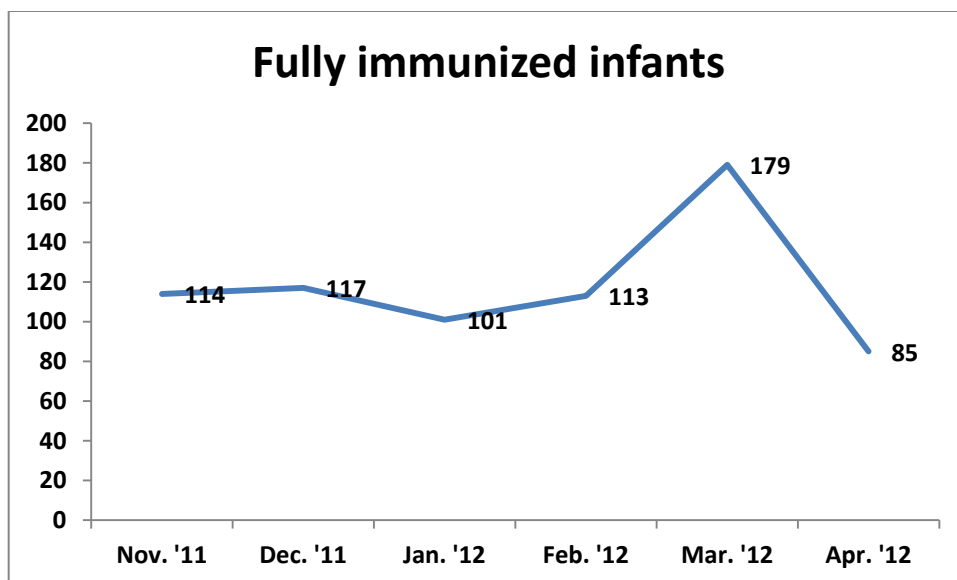
Drop- out rate= (Cumulative DPT1- Cumulative DPT3) /DPT1 Cumulative total

$$= (1270- 1405)/ 1270$$

$$= -10.6\%$$

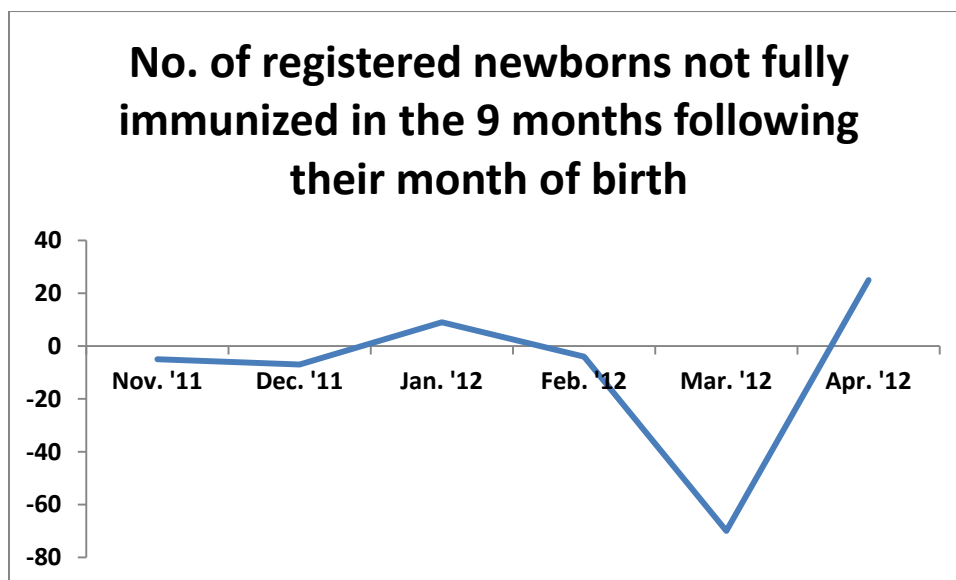
A drop- out rate of -10.6% is significant of the fact that the drop- out rate is nil and instead there is greater immunization coverage than the target by 10.6%.

Fully immunized infants between 9 and 11 months.	Total live births 9 months before the corresponding fully immunized month	No. of registered newborns not fully immunized in the 9 months following their month of birth
April 2012 - 85	August 2011 - 110	25
March 2012 - 179	July 2011 - 109	-70
February 2012 - 113	June 2011 - 109	-4
January 2012 - 101	May 2011 - 110	9
December 2011 - 117	April 2011 - 110	-7
November 2011 - 114	March 2011 - 109	-5



Graph-4

- The graph4 represents total number of fully immunized infants between 9 and 11 months of age from November 2011 to April 2012.
- The total number remained constant from November 2011 to February 2012 but there was a steep rise in the number in March 2012 followed by a steep decline in April 2012.
- The steep increase was attributed by the inclusion of registrations of infants who were fully immunized at the PHC but originally were from outside the catchment area.



- The graph 5 represents number of registered newborns not fully immunized in 9 months following their birth.
- The PHC caters to a large population comprising mostly of floating population leading to an increased in migration and out migration of population. As a result, there is always a difference between the registered births 9 months prior to complete immunization and the fully immunized infants following it.

VACCINE SUPPLY, CONSUMPTION AND WASTAGE

Vaccine	Total stock of the vaccine	Total number of beneficiaries	Vaccine doses required (based on the number of beneficiaries and wastage factor of 1.33)	Vaccine doses consumed	Wastage
DPT (DPT+ 5yrs DT+ DPT booster)	900	515	685	660	-25
OPV (OPV+ OPV booster)	1720	423	563	700	137
Hepatitis B	540	370	492	430	-62
BCG	720	55	73	170	97
Measles+ booster	515	185	246	270	24
TT+ TT 10yrs+ TT 16 yrs	1370	296	394	380	-14

- From the above table it is seen that there is a high wastage of OPV and BCG vaccine doses.
- This high wastage is attributed to intermittent live births due to which entire vial need to be disposed off for one or two newborns.

PRIMARY HEALTH CENTER, R. TALLAVALASA

PHC R. Tallavalasa is a primary health center located in the rural area of R.Tallavalasa catering to a population of 48,973 spanning over 76 villages.

Target pregnant women for the month of March, 2012	57
Target infants for the month of March, 2012	60

Beneficiaries for March 2012 for each vaccine and vitamin A	TT	BCG	DPT	OPV	Hepatitis B	Measles	DT	Vitamin A
Calculated number	114	60	240	240	180	60	60	540
Actual number	71	52	82	134	82	71	0	0

- TT immunization among antenatal women is less than calculated number of target pregnant women for the vaccination.
- As there is a floating population in the high risk areas leading to increased in migration and out migration, there are less number of infants vaccinated than the calculated target.
- In the calculated number for DPT beneficiaries 4 doses of DPT are taken whereas primary data provides beneficiaries for 3 doses of DPT.

MAN POWER & IMMUNIZATION SESSIONS

The following chart shows the number of auxiliary nurse midwives (ANM), accredited social health activist (ASHA) workers and sessions held at each sub- centre.

SUB- CENTER	POPULATION	NUMBER OF ANMs	NUMBER ASHA WORKERS	NUMBER OF SESSIONS HELD
R. Tallavalasa	6,224	1 second ANM	5	1 ST Wednesday, 3 Saturday s (4)
K. Uppadda	6,734	1 regular ANM	7	1 ST Wednesday, 4 Saturdays (5)
Ch. Uppadda	5,612	1 regular ANM	5	1 ST Wednesday, 4 Saturday s (5)
Santhapeta	4,315	1 regular ANM	4	1 ST Wednesday,

				3 Saturdays (4)
Thatiuru	5,262	1 regular ANM	6	1 st Wednesday, 3 Saturdays (4)
Chippada	5,725	1 regular ANM & 1 second ANM	5	1 st Wednesday, 3 Saturdays (4)
Singanabanda	6,279	1 regular ANM & 1 second ANM	11	1 st Wednesday, 3 Saturdays (4)
Dakamarri	3786	1 regular ANM & 1 second ANM	5	1 st Wednesday, 3 Saturdays (4)
Amanaar	4856	1 second ANM	6	1 st Wednesday, 3 Saturdays (4)

- As per requirement each sub-center must have one regular ANM and one second ANM. From the chart we can see that out of 9 sub-centers only 3 sub-centers fulfill this requirement.
- The number of sessions held is in accordance with the requirement.

DROP- OUT RATE

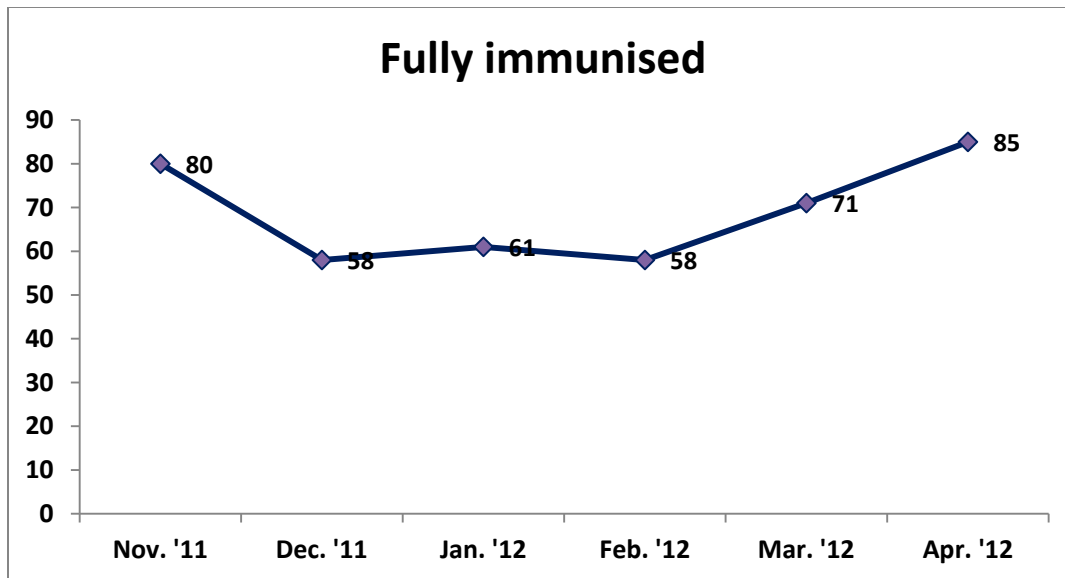
Drop- out rate= (Cumulative DPT1- Cumulative DPT3) /DPT1 Cumulative total

$$= (879- 910)/ 879$$

$$= -3.52\%$$

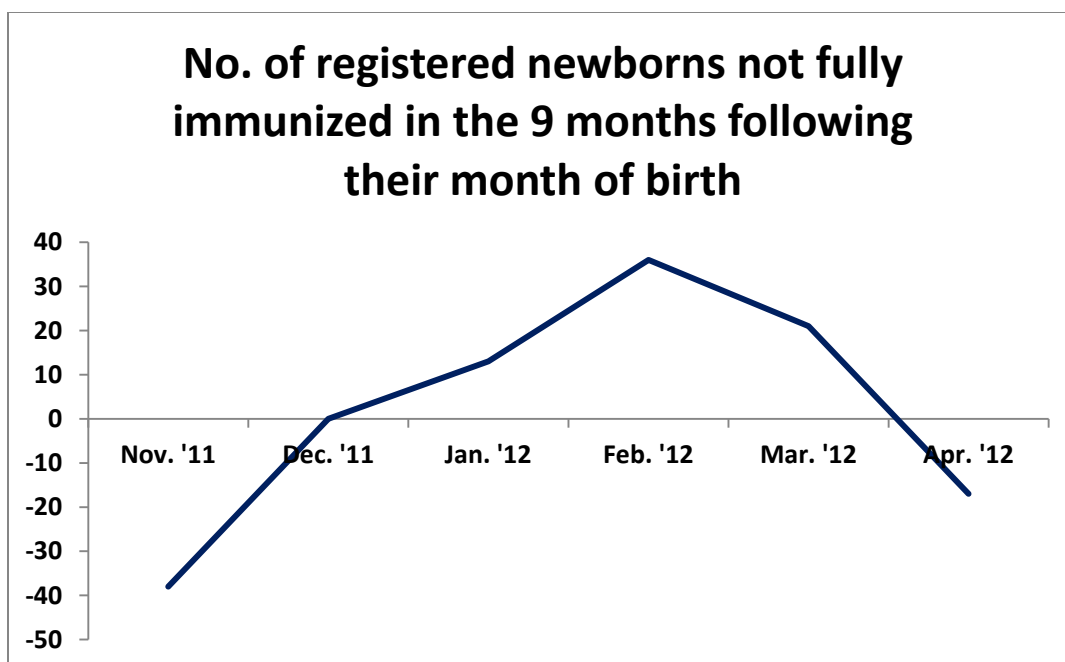
A drop- out rate of -3.52% is significant of the fact that the drop- out rate is nil and instead there is greater immunization coverage than the target by 3.52%.

Fully immunized infants between 9 and 11 months.	Total live births 9 months before the corresponding fully immunized month	No. of registered newborns not fully immunized in the 9 months following their month of birth
April 2012 - 85	August 2011 - 68	-17
March 2012 - 71	July 2011 - 92	21
February 2012 - 58	June 2011 - 94	36
January 2012 - 61	May 2011 - 74	13
December 2011 - 58	April 2011 - 58	0
November 2011 - 80	March 2011 - 42	-38



GRAPH-6

- Graph 6 represents a steep decline in the number of fully immunized infants but from March 2012 there is an increase.
- R. Tallavalasa is mostly resided by fishermen and there is a continuous in migration and out migration as per changing occupational seasons.



GRAPH-7

- Graph 7 represents a gradual increase in numbers of not fully immunized infants from November 2011 to February 2012 followed by a gradual decline till April 2012.
- The PHC caters to a population comprising mostly of floating population leading to an increased in migration and out migration of population. As a result, there is always a difference between the number of registered births 9 months prior to complete immunization and the fully immunized infants following it.

VACCINE SUPPLY AND CONSUMPTION

Vaccine	Total stock of the vaccine	Total number of beneficiaries	Vaccine doses required (based on the number of beneficiaries and wastage factor of 1.33)	Vaccine doses consumed	Wastage
DPT (DPT+ 5yrs DT+ DPT booster)	540	301	400	460	60
OPV (OPV+ OPV booster)	840	338	450	560	110
Hepatitis B	400	257	342	330	12
BCG	530	52	69	210	141
Measles+ booster	345	115	153	170	17
TT+ TT 10yrs+ TT 16 yrs	710	320	426	390	-36

- From the above table it is seen that there is a high wastage of OPV and BCG vaccine doses.
- This high wastage is attributed to intermittent live births due to which entire vial need to be disposed off for one or two newborns.

SUB-CENTER: Ch. UPPADDA

Auxiliary nurse midwife: Mrs. Mangalaveni

Sub-center, Ch. Uppadda comes under PHC, R. Tallavalasa. It covers two panchayatis namely, Ch. Uppadda and Nidigattu covering a total population of 5612.

Target pregnant women for the month of March, 2012	7
Target infants for the month of March, 2012	8

Beneficiaries for March 2012 for each vaccine and vitamin A	TT	BCG	DPT	OPV	Hepatitis B	Measles	DT	Vitamin A
Calculated number	14	8	32	32	24	8	8	72
Actual number	8	7	11	11	11	8	0	0

- In the calculated number for DPT beneficiaries 4 doses of DPT are taken whereas primary data provides beneficiaries for 3 doses of DPT.
- The number of antenatal TT vaccination received is less than the calculated number as many women after being registered reside outside the village in their maternal homes.

Outreach centers	Distance from the nearest ILR point (PHC R. Tallavalasa) in Kms	ASHAs	Sessions held on
Ch. Uppada	8	1	1 st Wednesday
Kothuru	10	1	1 st Saturday
Nerallavalasa	6	1	2 nd Saturday
Nidigattu	5	1	3 rd Saturday
INS Kalinga		1	4 th Saturday

- The sub-center has 4 out-reach centers and conducts one fixed session at the center.

GANDHI HOSPITAL, HYDERABAD

Gandhi hospital is an urban area hospital covering a slum population of 65,529.

Sub-center	Padmaraonagar	Boiguda	IDH colony	Bholakpur
Target pregnant women April, 2012	26	23	23	23
Target infants April, 2012	24	21	21	21

Sub-centere								
Beneficiaries for March 2012 for each vaccine and vitamin A	TT	BCG	DPT	OPV	Hepatitis B	Measles	DT	Vitamin A
Calculated number	114	60	240	240	180	60	60	540
Actual number	71	52	82	134	82	71	0	0

Sub-centers	Padmaraonagar		Boiguda, IDH Colony & Bholakpur				
Vaccines	Calculated beneficiaries	Actual beneficiaries	Calculated beneficiaries	Actual beneficiaries			
				Boiguda	IDH Colony	Bholakpur	
TT	52	31	46	34	34	36	
BCG	24	14	21	15	16	18	
DPT	96	63	84	70	58	81	
OPV	96	63	84	70	58	81	
Hepatitis B	72	49	63	55	42	63	
Measles	24	14	21	18	17	24	
DT	24	0	21	0	0	0	
Vitamin A	216	0	189	0	0	0	

- From the table above we can see that Padmaraonagar and IDH colony have shown poor immunization more specifically for DPT, OPV & Hepatitis B.
- The target set by the program may be low for the sub-centers as a result, the achievement is low.
- The population mostly comprises of slum migrant population as a result there is poor tracking of the infants.
-

DROP- OUT RATES

Padmaraonagar:

Drop- out rate= (Cumulative DPT1- Cumulative DPT3) /DPT1 Cumulative total

$$= (183-221)/ 183$$

$$= \mathbf{-20.7\%}$$

A drop- out rate of -20.7% is significant of the fact that there are no drop- outs for every 100 population and the coverage is higher by 20.7%.

Boiguda:

Drop-out rate = (214-240)/214

$$= \mathbf{-12.4}$$

A drop- out rate of -12.4% is significant of the fact that there are no drop- outs for every 100 population and the coverage is higher by 12.4%.

IDH Colony

Drop-out rate= (208-213)/208

$$= \mathbf{-2.4\%}$$

A drop- out rate of -2.4% is significant of the fact that there are no drop- outs for every 100 population and the coverage is higher by 2.4%.

Bholakpur

Drop-out rate= (266-259)/266

$$= \mathbf{2.6\%}$$

A drop- out rate of 2.6% is significant of the fact that there are 2.6 drop- outs for every 100 population.

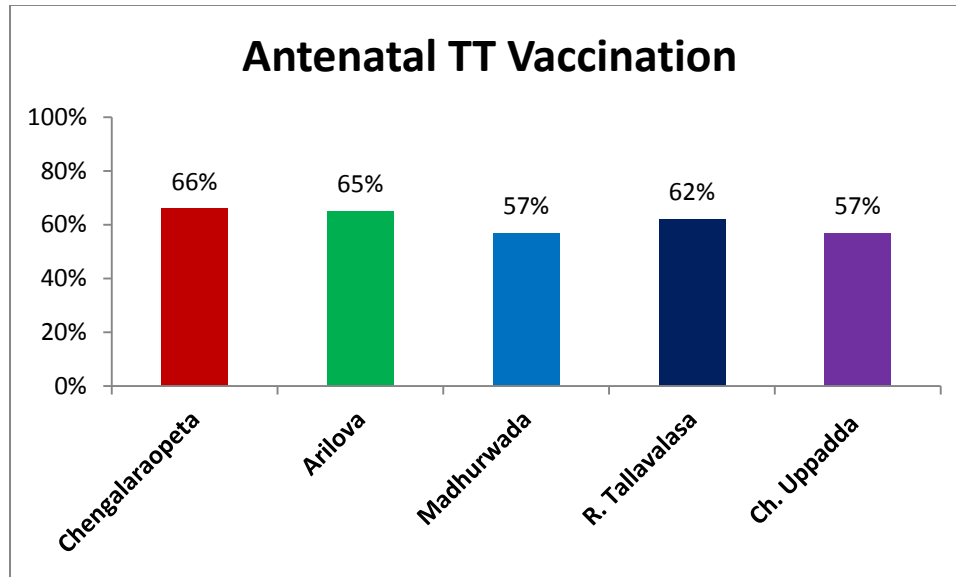
MAN POWER & IMMUNIZATION SESSIONS

The following chart shows the number of auxiliary nurse midwives (ANM), accredited social health activist (ASHA) workers and sessions held at each sub- centre.

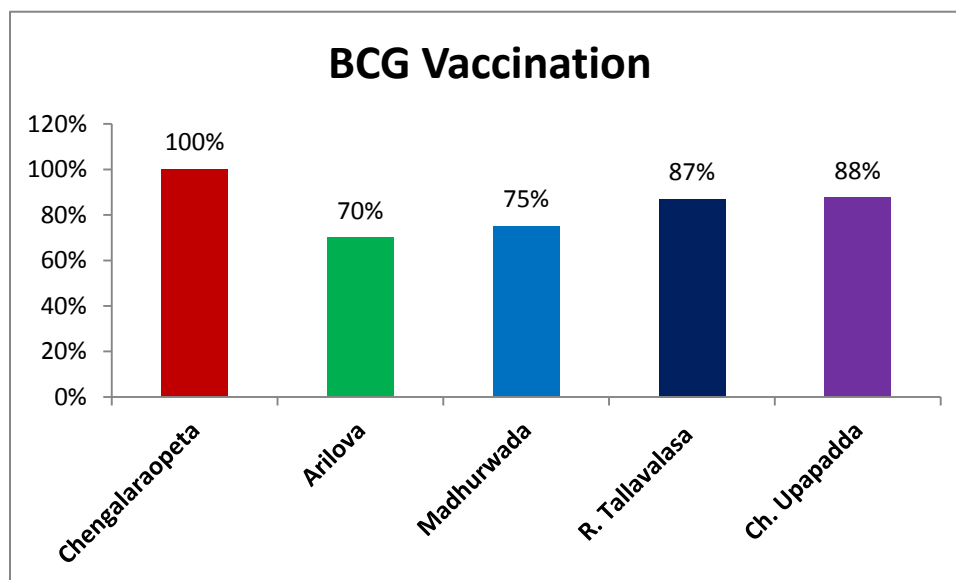
SUB- CENTER	POPULATION	NUMBER OF ANMs	NUMBER ASHA WORKERs	NUMBER OF SESSIONS HELD
Padmaraonagar	17,037	1 ANM	5	4 Wednesday, 4 Saturday s (8)
Boiguda	14,852	1 ANM	7	4 Wednesday, 4 Saturdays (8)
IDH Colony	15,150	1 ANM	5	4 Wednesday, 4 Saturday s (8)
Bholakpur	15,150	1 ANM	4	4 Wednesday, 4 Saturdays (4)
Gandhi Hospital	62,529			All working days

COMPARISON BETWEEN THE HEALTH CENTERS UNDER STUDY

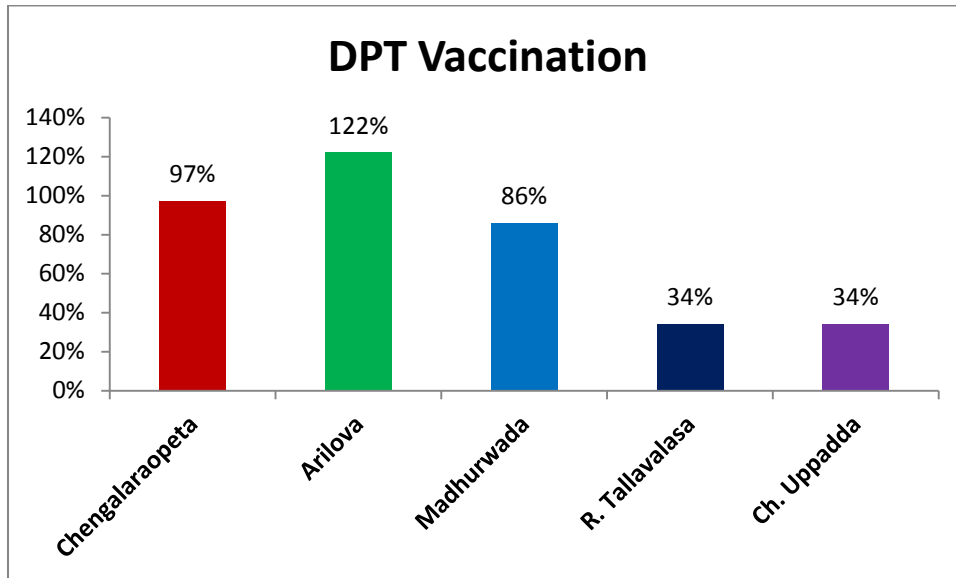
Comparison based on percentage achievement of particular vaccination



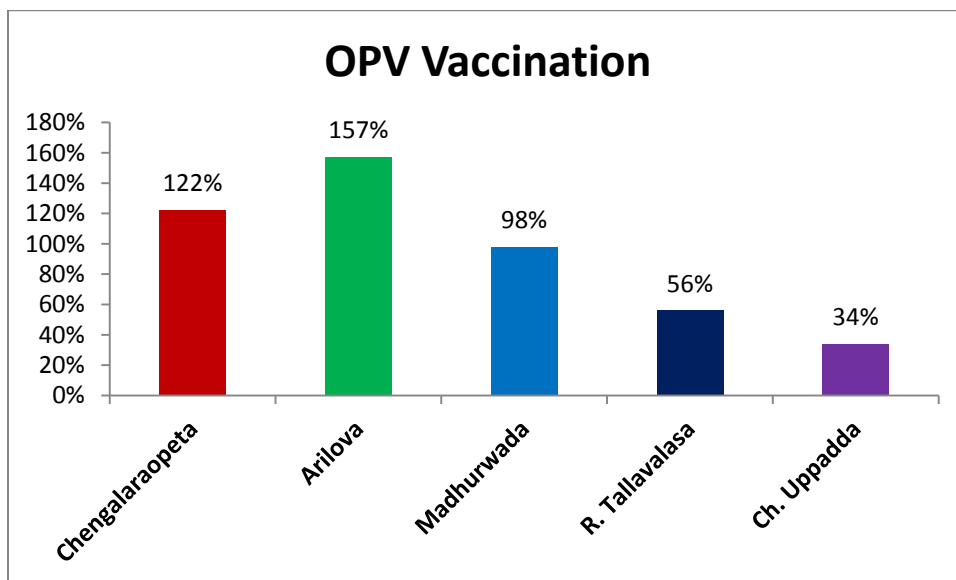
- Percentage achievement in all the health centres is almost the same near to 60%.
- Antenatal TT vaccination should be strengthened and no mother during the antenatal period must be missed out.



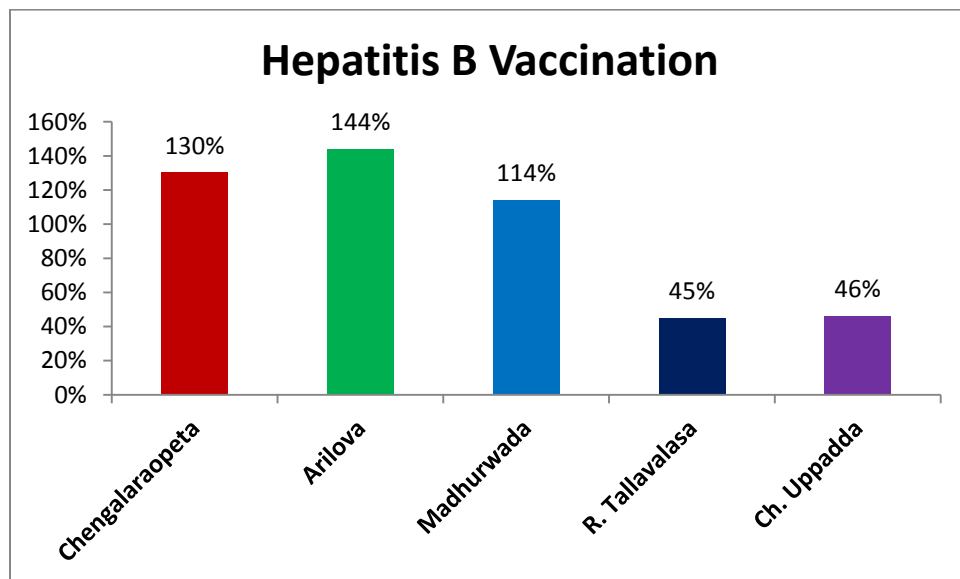
- UHC, Chengalaraopeta has achieved 100% vaccination whereas the other UHC Arilova has reached only 70%. The manpower at UHC Arilova must be increased as it has got a population of 93,700 as compared to Chengalaraopeta of approx. 15,000.
- PHC, R. Tallavalasa has a higher achievement percent than PHC Madhurwada. PHC Madhurwada again faces the same problem of huge population of 81,000 with shortage of manpower.



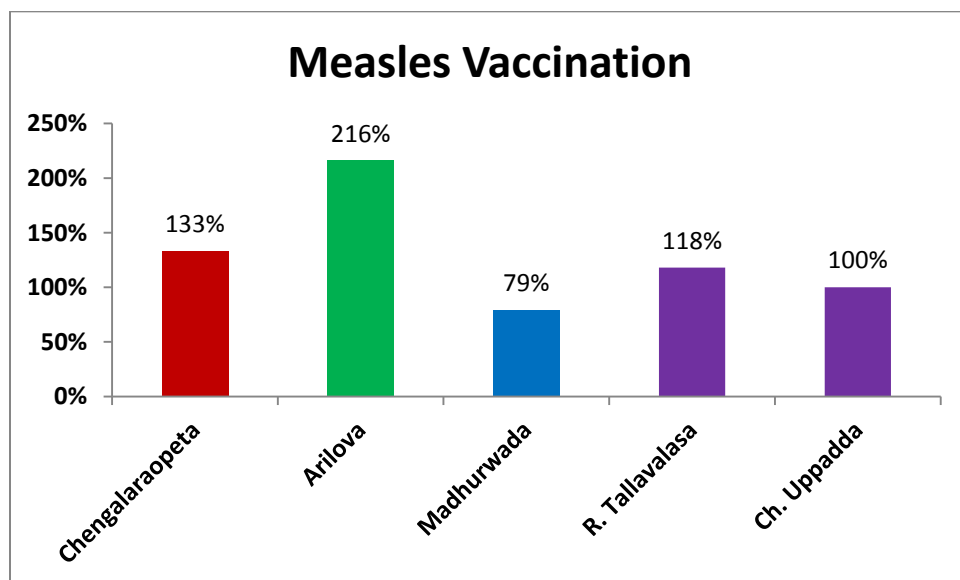
- From the above bar graph it is seen that DPT vaccination is very poor in PHC R. Tallavalasa and its Sub- center Ch. Uppadda.



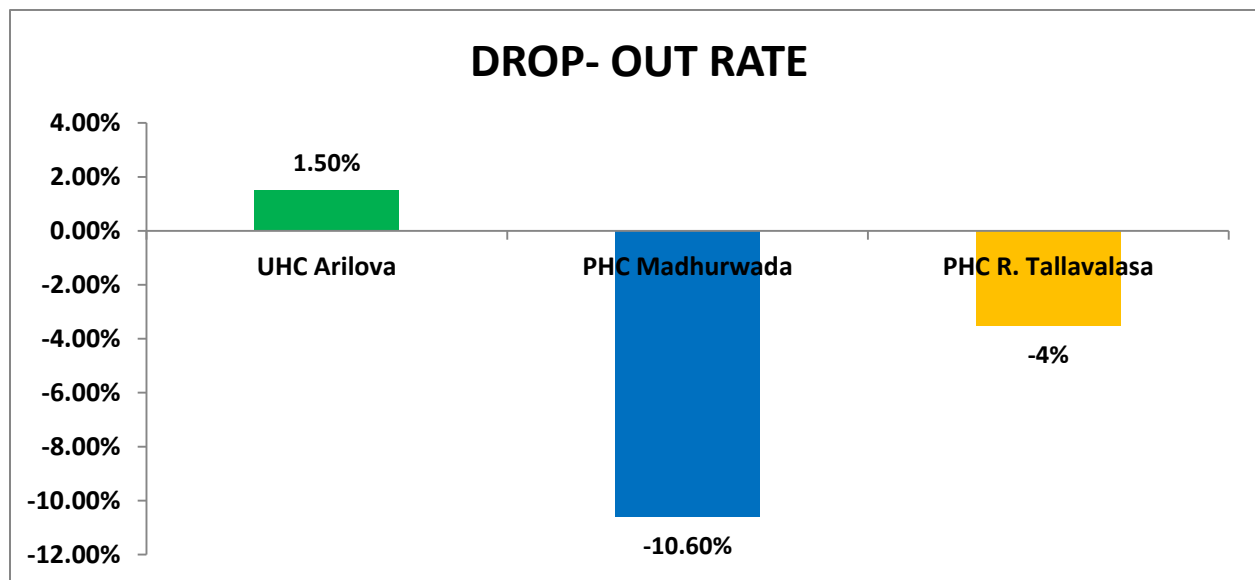
- From the above bar graph it is seen that OPV vaccination is very poor in PHC R. Tallavalasa and its Sub- center Ch. Uppadda.



- From the above bar graph it is seen that Hepatitis B vaccination is very poor in PHC R. Tallavalasa and its Sub- center Ch. Uppadda.

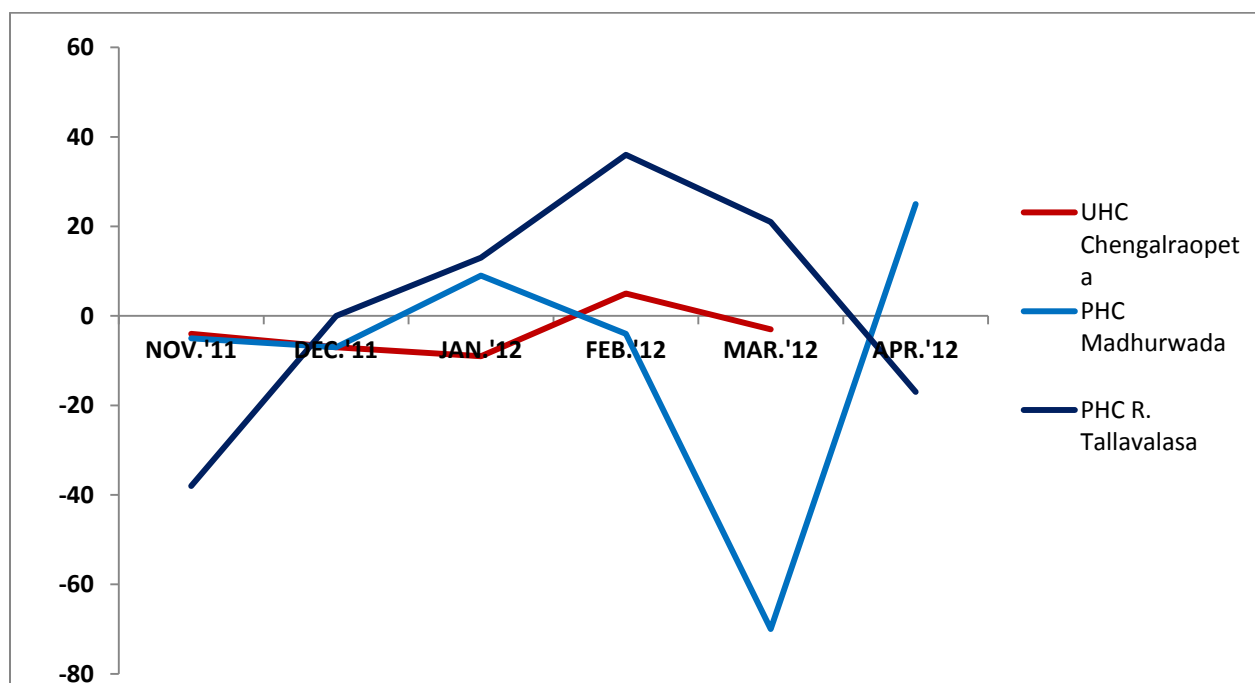


COMPARISON BASED ON DROP-OUT RATES



- Drop-out rate is least for PHC, Madhurwada and highest for UHC, Arilova.

NUMBER OF INFANTS NOT FULLY IMMUNISED 9 MONTHS FOLLOWING THEIR MONTH OF BIRTH



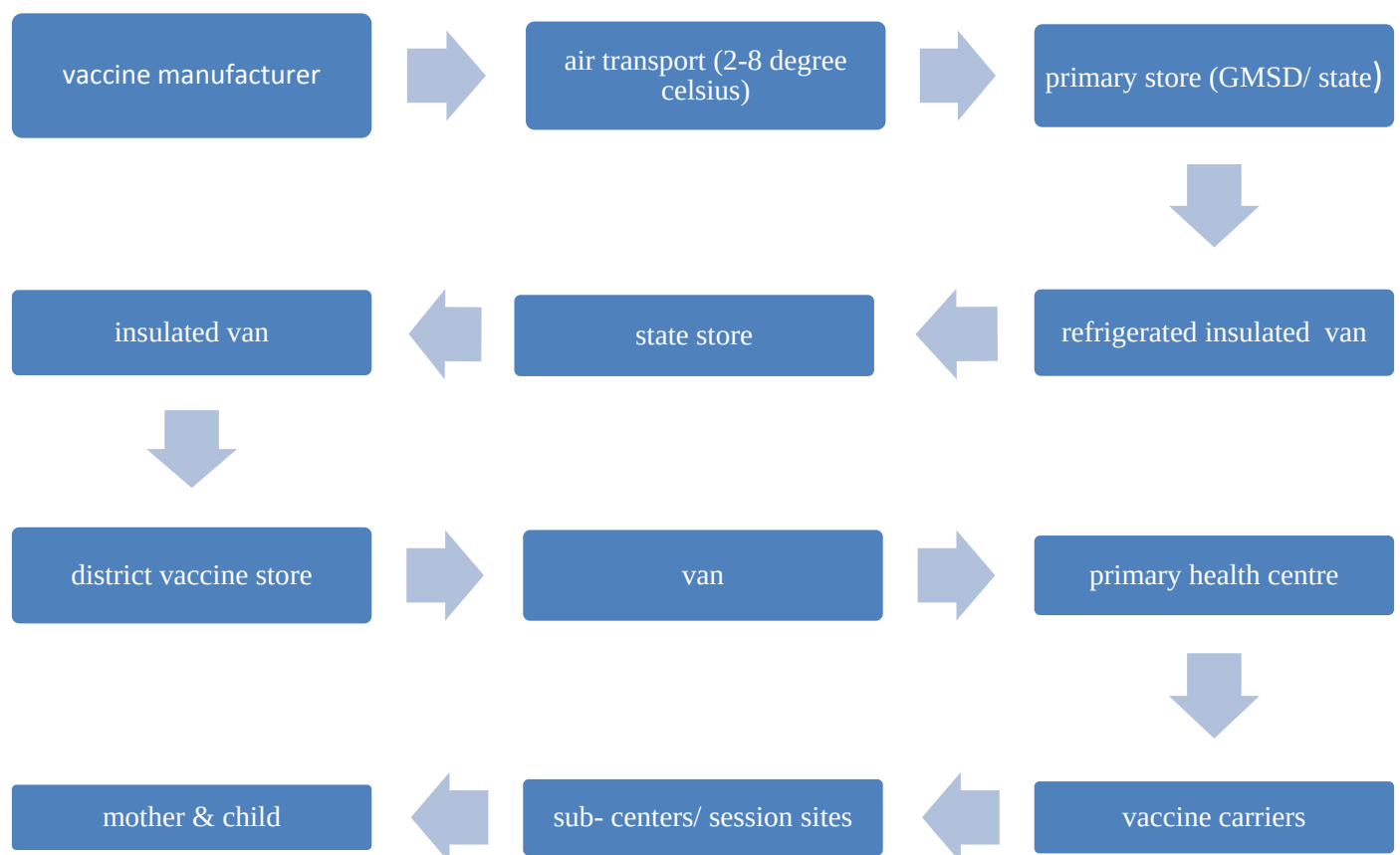
- The number of infants not fully immunized is the least and consistent over last six month from November 2011 to April, 2012 is for UHC, Chengalaraopeta.

VACCINE AND COLD CHAIN MANAGEMENT AT STATE LEVEL

Cold chain is a system of storing and transporting vaccine at the recommended temperature range from the point of manufacture to point of use. In order to provide potent and effective vaccine to the beneficiaries a vast cold chain infrastructure is required, which should have a network of the following, from national to states up to the out reach sessions.

- Vaccine Stores
- Walk-in-coolers (WIC)
- Walk-in-freezers (WIF)
- Deep Freezers (DF)
- Ice Lined Refrigerators (ILR)
- Refrigerated trucks
- Vaccine vans
- Cold boxes
- Vaccine carriers
- Icepacks

The Cold Chain System and Vaccine Flow in the Country:



Key areas of activities that have strengthened communication in the routine immunization program

- A due list of all the existing and new beneficiaries is prepared by anganwadi worker, ANM and ASHA/ CHV worker before every session and an indent is prepared for the required vaccine vials and injections.
- All the beneficiaries in the due list are informed through door to door service on the day before the routine immunization session.
- New pregnant women and infants in the area are identified while informing door to door and through ante natal registrations.
- Drop-outs are identified mainly through prepared due-lists and the counter-foils used.
- Drop-outs are given special emphasis and are reminded repeatedly of the immunization.
- Parents migrating to other areas are advised to take their remaining vaccination doses at their new area.
- Effective use of anganwadi schools as session sites for outreach sessions.
- Immediate and effective treatment given for any AEFI cases by asking parents to stay back at session site for at least half an hour after vaccination.
- parents are advised to stay at the center for atleast half an hour after vaccination to manage any kind of AEFI cases.
- Observing the parents who have missed the session and motivating and mobilizing them for next session by ASHA workers.
- A Village Health and Sanitation Day is conducted between health workers/ANMs/ ASHAs and group of parents during every routine immunization session.
- Group discussions are held between health workers and small group of parents during every outreach session.
- Key influential persons of the local area such as mahila mandals/ youth organizations/ local leaders/ sarpanch are also involved in IEC activities

RECOMMENDATIONS

After the entire analysis, among the 5 health centers under the study, UHC, Chengalaraopeta has shown the best performance.

- UHC Chengalaraopeta which covers a population of 15,456 has got an adequate manpower.
 - 1 ANM and 2 CHVs for every 7000 population, which leads to an efficient recording and registration of field data.
 - The number of sessions required is designed according to the requirement.
 - As the manpower is adequate according to the population the communication between the health workers and the parents is more effective leading to a higher coverage.
-
- UHC, Arilova and PHC, Madhurwada face the problem of huge population and shortage of manpower.
 - An increase in manpower can improve the registration system providing more authentic immunization coverage results.
 - The problems related to increased expenditure of vaccines can also be overcome.
 - Maintenance of antenatal register must also be improved so as to identify effectively the number of drop-outs and left-outs.
 - Health centers are mainly dependent on due-lists prepared on the day before the immunization session. Usage of tracking bags and counter-foils must be encouraged.
 - Cases of missed mother and child protection cards were detected at the session sites. The health centers must therefore have the counterfoils of the beneficiaries so as to keep a track of the doses and also issue a new card to the parents.
 - The health workers/ ASHA workers/ ANMs must be trained about the four key messages of immunization. Rather than giving detailed information to a few parents it would be advisable to inform about the four key messages to all.
 - A special register to register the parents migrating outside or migrating inside the specific area must be maintained.

The following table presents the strengths, problems, probable reasons and recommendations for the problems with respect to the routine immunization program at each health center under the study:

Name of the health center	Strengths	Problems/ weak areas	Probable reasons	Suggestions
UHC, Chengalaraopeta	Number of ANMs, CHVs and sessions in accordance with the population	High wastage of vaccine doses.	-No proper due lists prepared. - Target pregnant women and infants improperly estimated.	-Vaccine doses must be supplied according to the indent prepared for outreach sessions. - vaccine supply must according to exactly estimated target population.
UHC, Arilova	Appropriate number of immunization sessions held for the target population.	-discrepancy in the number of beneficiaries for the vaccine doses and the supply of vaccine doses.	-improper registration and recordings. -manpower not in accordance with the target population and number of sessions.	-increasing the manpower to improve the efficiency in recording and registrations and overall immunization coverage.
PHC, Madhurwada	Appropriate number of immunization sessions held for the target population.	High wastage of vaccine doses.	-improper registration and recordings. -manpower not in accordance with the target population and number of sessions.	-increasing the manpower to improve the efficiency in recording and registrations and overall immunization coverage.
PHC, R. Tallavalasa	Appropriate number of manpower and immunization sessions held for the target population.	Low achievement of immunization compared to the target.	-high migration of mothers from in-laws home to maternal home. -high migration due to occupational reasons.	-maintaining a special register to track families/ mothers who have migrated inside/ outside the village. -use of tracking bags to keep a track of drop-outs.

HEALTH IT SOLUTION TOWARDS STRENGTHENING ROUTINE IMMUNIZATION

The key areas that are to be strengthened in the Routine Immunization process are:

- Effective identification and registration of antenatal cases and infants to be immunized within the catchment area of the UHC/ PHC/ SC.
- An efficient mechanism to track the drop-outs and identify the left-outs.
- An efficient mechanism to monitor of the requirement, supply and optimal consumption of vaccine doses on a regular basis.
- Need to improve transparency and accountability in the routine immunization process.

CONCEPT

- As a result to strengthen these key areas a unique bar coded mother and child health card is suggested which can be utilized for 5 years to track the ante natal registration status of the mother and immunization status of the child.
- Bar-coded mother and child health card will consist of optical machine readable unique bar-code.

Wireless and Programmable Portable Barcode Data Terminal

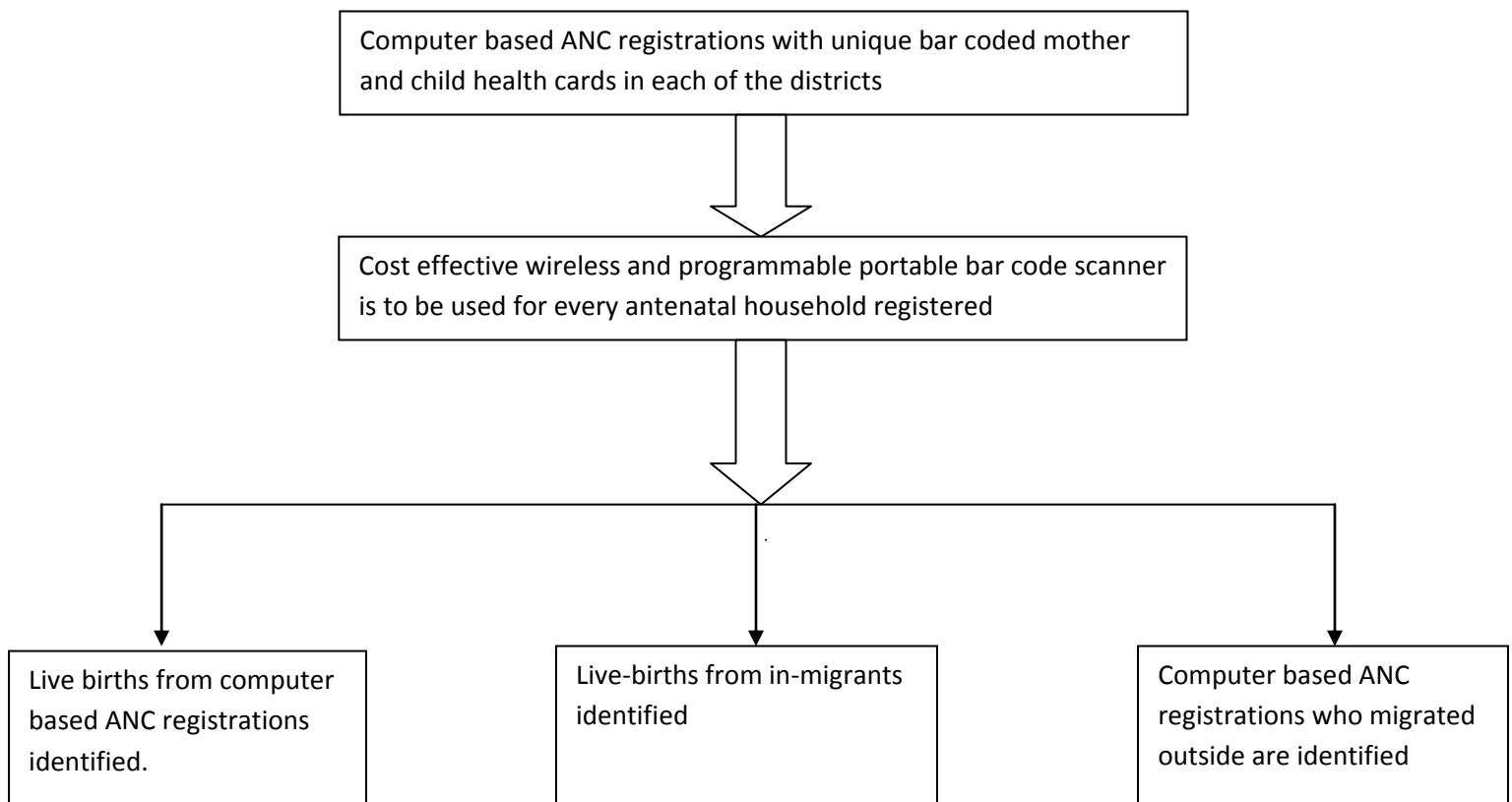
A wireless and programmable portable barcode data terminal is to be used which can be carried and used with ease also at the sub-centers and anganwadi centers.

The main features of this barcode data terminal are:

- It enables wireless data transmission. When the immunization session is going on the data can be transferred online to the fixed centre (PHC/ UHC/ SC). Hence, reduces the time lag between service delivery and data transfer.

- The barcode scanner can be used in offline mode when the data (upto 60000 barcodes) can be saved which can later be transferred to the mother and child tracking system at the fixed centers.
- It supports programmable to custom applications and can support upto 64 items of program attributes. This feature facilitates us to design a program according to our requirements.
- It is supported with auto-data protection on power failure. This protects its usage in remote and far-flung areas.
- It has a colour LCD display with power saving mode.

The Hypothetical Model



- During every immunization session/ antenatal check-up the unique bar-coded mother and child card of the mother is to be scanned as an indication of the vaccination is being given as per the schedule of the particular mother and her child.

- The data can then be transferred to the mother and child tracking system (MCTS), either real time data transfer can be done or it can be saved in the offline mode and transferred into the MCTS after the immunization session.

ADVANTAGES:

- The new infants and antenatal cases can be identified.
- The left-outs and drop-outs can be identified in a more effective manner.
- Effective due-lists can be prepared which will enable optimal vaccine usage and minimal wastage
- Higher accountability and transparency in the functioning of the routine immunization process.
- An integrated tracking system can be developed to track the mother and the infant to the original location.
- Will enable more efficient house to house monitoring and further improve the coverage and reduce the number of drop-outs.

CHALLENGES

- The technology must be made user- friendly in order to increase its ready acceptability.
- The personnel must be trained in the new technology
- The maintenance of the equipment is also to be considered.

Annexure-1

QUESTIONNAIRE TO IDENTIFY THE COMMUNICATION PROBLEMS AMONG VULNERABLE GROUPS IN ACHIEVING COMPLETE IMMUNISATION

- 1) How frequently are discussions held between HWs and small groups of parents?
 - Every outreach session
 - Alternate outreach session
 - Once in 3 sessions
 - Never done

- 2) How frequently ANM/ CHV/ MPW are involved in identifying the lists of newborns and children in their specific community?
 - Every Tuesday
 - Every Friday
 - Every Tuesday and Friday
 - Never done

- 3) How are they identified?
 - Ante-natal registers
 - Due lists
 - Identifying new residents
 - Others (specify)

- 4) How frequently are the drop- outs identified?
 - Once a week
 - Once in two weeks
 - Once in a month
 - Never done

- 5) Who are the key influential persons of the specific area being involved in IEC activities?
 - ASHA workers/ CHVs
 - ANMs
 - Mahila mandals
 - Youth organizations
 - Others (specify)

- 6) How regularly is the list of left-out children prepared?
- Once in a month
 - Once in two months
 - Once in 3 months
 - Never
- 7) How many of the low socio- economic/ vulnerable group parents come to the immunization session after being informed?
- Almost all of them
 - Moderate number
 - Very few of them
 - Almost none
- 8) What are the mediums of IEC in these areas?
- Informing door to door
 - Drama and songs
 - Wall paintings
 - Television and radio
 - Posters and banners
 - meetings
- 9) How frequently are the tracking bags used for outreach sessions?
- Every session
 - Every alternate session
 - Once in 3 sessions
 - Never used
- 10) How are AEFI cases being addressed in the outreach areas?
- Counseling the parents about AEFI and its management
 - Treated and managed immediately
 - Follow up on the next day
 - Others (specify)

11) What locations are used for outreach sessions?

- AW schools
- Community halls
- Temples
- Others (specify)

12) What is the counter-check mechanism to inform parents/ families who have missed the immunization sessions?

- Informing the neighbors of the family on the next day
- Reminding the family of the missed sessions during next session
- Leaving a written message on the door or wall of the house
- Making a phone call to the particular family
- Others (specify)

13) Difficult areas covered during an awareness campaign before a session?

- Makeshift camps
- Slums
- Unrecognized residing places (eg. Garages, servant houses,
- Residing on public places(eg. footpaths, bus stands, temples)
- Others (specify)