

**Summer Training at
Wadhvani Initiative for Sustainable Healthcare
(April 14- June 21, 2014)**

- **To prepare a background situational analysis of the health profile of children under the age of five years among 15 districts of Rajasthan**
- **To determine the association between poverty and mortality indicators in the focus districts**
- **To determine the association between mortality rates and safe deliveries**

**By
HarshaTomar**

**Under the guidance of
Dr. Barun Kanjilal**

**MBA- Hospital & Health Management (MBA-HM)
2013-2015**



CERTIFICATE

This is to certify that Dr. Harsha Tomar has undergone her summer training in Wadhwani Initiative for Sustainable Healthcare, New Delhi from 14-April-2014 to 21-June-2014. The candidate herself carried out all the studies related to her summer training. Her approach to the study has been scientific and analytical.

The summer training is partial fulfillment of the course requirement recommended for the award of MBA in health and hospital management with specialization in health.

I wish her success in all her future endeavors.

Col. (Dr.) Ashok Kaushik

Dean (Academic & Student affairs)

IIHMR Jaipur

Dr. Barun Kanjilal

Professor

IIHMR Jaipur



Wadhvani Initiative for
Sustainable Healthcare

Experience Certificate

Date: 31st July, 2014

To,

Whom So Ever IT May Concern

This is to certify that Harsha Tomar (student of IIHMR, Jaipur) interned at the Wadhvani Initiative for Sustainable Healthcare from April 14 to June 13, 2014. During her internship Harsha worked in the Research Department and reported directly to the Head of Research & Knowledge Hub.

Intelligent and enthusiastic, Harsha took her responsibilities seriously and demonstrated both hard work and a willingness to learn. She undertook quantitative research on 15 districts of Rajasthan and also helped with the qualitative analysis of the health situation in the state, building on her data collection, interpretation and presentation skills. She was quick to pick up new concepts and eager to apply them to her work.

In just two months, Harsha became an integral part of the research team at WISH. Friendly and personable, she participated whole-heartedly in all organizational activities.

Due to her interest and ability, Harsha was invited to participate in the strategy planning process of WISH. Here she learnt about scenario-based planning, value centered innovation and different working styles. She also developed an understanding of organizational structures and processes. During the Strategy Plan exercise, Harsha leveraged her understanding of the health sector and her medical knowledge to provide valuable inputs. She also demonstrated good presentation skills. She studied documents, undertook qualitative and quantitative research to enable the Research department to prepare a situation analysis document on the prevailing Health Innovation landscape in India.

It was a pleasure to supervise Harsha and to have her intern at WISH. We would be happy to work with her in future and wish her all the best in her endeavors.

Soumitra Ghosh
Chief Executive Officer

Accepted

ACKNOWLEDGMENTS

I must acknowledge the guidance and support provided by the entire WISH TEAM during my summer training at WISH. I am thankful to the WISH team and especially to my mentor M/s Gunjan Veda Ma'am (Head department of Research and Knowledge Hub) for guiding me throughout the summer training period and helping me to successfully accomplish all the tasks assigned during the summer training period. The entire WISH team helped me grow as a better professional.

I would also like to thank my family for all the support that they gave me during my summer training period.

I acknowledge the guidance of my mentor Dr. Barun Kanjilal Sir at the IIHMR University while writing the report. I am grateful to Barun sir for all the support.

TABLE OF CONTENT

Organisational profile	4-6
Executive summary	7-9
Report	10
• Background	11
• Assignment objectives	
• Methodology	12
• Data Collection	13
• Data Analysis	
• Findings and Interpretations	14-29
• Limitations	30
• Conclusion	
• Annexure	31-38

ORGANIZATION PROFILE

Wadhvani Initiative for Sustainable Healthcare is a foundation, a Sunil Wadhvani initiative the founder of I-gate and a philanthropist. WISH was established in 2013 and within such a small span of time WISH has built up many partnerships. WISH provides technical and financial assistance to innovations in healthcare and support the scaling up of such initiatives. WISH has also sponsored I-Cure an organisation which runs a mobile medical unit in two districts of West Bengal, in its first year.

WISH MISSION

The mission of WISH is to improve the health of millions of poor families around the world, especially in India and other developing countries. This mission aims to:

- Contribute towards the ultimate goal of universal healthcare coverage that meets significant- targeted needs of rural and urban poor, especially the most under-served and marginalized groups
- Facilitate, strengthen, and streamline the evolving healthcare innovation eco-system, bringing together organizations with diverse interests yet synergistic capabilities
- Reduce inefficiencies & raise the funding % that impacts end-beneficiaries
- Identify, fund, capacitate, and showcase most promising innovators who can make high quality healthcare more affordable, accessible, sustainable
- Channelize the growing energy of people to achieve this mission, as well as the forward momentum of scalable and replicable initiatives
- Ensure that the sector works in tandem with government policy

WISH VISION FOR JANUARY 1, 2020

Based on its tangible achievements and extensive knowledge base, WISH is widely esteemed as the “go to” Centre of Excellence for how to understand, facilitate, enable and resource the scaling-up of innovative healthcare initiatives and enterprises that serve the needs of the population. The expertise and core competency of “scaling HC initiatives and enterprises” defines the unique niche and service that WISH provides to India (and the world) to improve the health of poor families.

The story of the WISH vision is told in terms of its focus, constituents, activities, knowledge creation, and results.

FOCUS: During its first 5 years, WISH has focused on the needs in three EAG states in India - Rajasthan, Orissa and Madhya Pradesh, with a sharp focus on:

1. Reproductive, Maternal, New born and Child Health

2. Primary and Preventative Healthcare

3. Communicable and Non Communicable Diseases

Significant activities undertaken during this period have included:

- ☐ Fostering a healthcare innovation dialogue among stakeholders to align their strategic objectives, support high-impact scalable organizations, mobilize resources, involve end users in the innovation process, and build evidence on interventions that improve health outcomes of the rural and urban poor in India
- ☐ Achieving systemic change by fostering innovation, catalysing interventions, improving health outcomes, and reaching scale with a holistic approach to addressing healthcare needs
- ☐ Identifying and supporting high-impact organizations and innovators who can have a disruptive and transformative effect on the healthcare system through scalable and sustainable models and technologies
- ☐ Developing and implementing innovative financing mechanisms and process-efficiency
- ☐ Provide rigorous, evidence-based technical evaluation, research on healthcare needs, and dissemination of sustainable healthcare models through a Knowledge Hub

WISH VALUES

The current WISH leadership team identified the values below as guiding principles for

- (a) How WISH employees relate to each other (in behaviour and attitudes),
- (b) The criteria by which decisions are made, and
- (c) How WISH as an organization relates to its external constituents.

The importance of “walking the talk” is key to building and sustaining trust and credibility with all stakeholders.

S = Seeing the whole: We seek what’s good for all, with a sense of oneness

C = Commitment: We aim to make a large-scale sustainable impact, and are accountable and trustworthy in keeping our promises

A = Agility: We act with urgency, speed, innovativeness, and efficiency

L = Learning: We listen to, create and share new thoughts and ideas in a spirit of openness, humility, caring and empathy

E = Empowering: We relate to others with integrity, ethics, transparency, and respect

To turn these values into effective operating principles for behaviour, attitudes and decisions, the WISH leadership team is encouraged to take each value and describe what it would look

like to live and work by each value. In this sharing, the team can make agreements and commitments about how each value will be put into practice.

WISH STRATEGIC CRITERIA

Every day, WISH leadership and employees will face decisions about what to do to actualize the WISH mission, vision and strategy. The WISH values are an internal set of guiding principles for making those decisions. The WISH strategic criteria provide a focus on having the highest impact decisions:

S = Serving the BoP: Staying focused on 3 priority states – on-the-ground results are critical to success

C = Commitment: BoP is diverse in terms of needs, expectations and solutions – contextualization is key to success

A = Alliance: No one can do it alone – the right alliances are needed for success

L = Low Cost: Affordable and accessible – innovation with low cost solutions pave the way to success

E = Enterprising: Hi volume - low margin together are the social enterprises that will lead to success

As with the SCALE values, to turn these strategic criteria into effective operating principles, the WISH leadership team is encouraged to take each criteria and describe what it would look like in day to day work. In this sharing, the team can make agreements and commitments about how each strategic criterion will be put into practice.

EXECUTIVE SUMMARY

Internship under the Head of the Department of Research and Knowledge Hub for a period of two months from 14 April 2014 to 21 June 2014 was completed and the following tasks were assigned:

- To participate and contribute in the process of scenario based strategic planning of WISH
- To contribute to the secondary research on 15 districts of Rajasthan and produce a situational analysis report for the same.

Background of the assignment

WISH is under the process of planning its positioning strategy in order to create the maximum impact by serving millions of BOP families by 2020. All the assignments accomplished were designed to meet the needs of achieving its mission and visions keeping in mind its core values and principles.

Purpose

In order to assess the current and the future scenario of the healthcare ecosystem in India the Research team worked to prepare a situational analysis report on the prevailing healthcare innovation ecosystem and also worked to support Program team to prepare a background situational analysis among 15 districts of Rajasthan where WISH is going to introduce programs under partnership with State Ministry of Health and Family welfare. The situational analysis of the healthcare ecosystem was basically done to strategize the positioning strategy of WISH in the coming five years.

Assignment objectives

- To prepare a situational analysis report on the prevailing healthcare innovation ecosystem
- To prepare a background situational analysis among 15 districts of Rajasthan

Methodology and research design

Primary as well as secondary researches both quantitative and qualitative were undertaken to accomplish the tasks assigned. The steps followed were:

Preparation of district profiles:

- Identification of important indicators
- Data collection for all the identified indicators from various district level national surveys viz. Annual health survey reports and district level household survey reports
- Data analysis in excel through graphs and tables
- Report writing containing the key features for all the districts

Strategy planning exercise: It took place in two parts

➤ Part 1

- Value assessment of the WISH team and skill building for the same.
- Based on the values of the team, identification of the mission, vision and values and core principles of the organisation
- Identification of various driving forces for the healthcare ecosystem in India
- Identification of three different scenarios based on the driving forces

➤ Part 2

- Innovation profile assessment of the WISH team and skill building for the same
- Strategic planning for each of the scenarios identified in part one of the workshop by planning about 10 Ps i.e. product, promotion, promise, people, partnership, principles, process, power, prosperity and planet for the organisation under various scenarios

Preparation of situational analysis for healthcare ecosystem

- Secondary research over internet to understand the healthcare ecosystem under which following readings were undertaken: Election Manifesto, Planning commission document Vision 2020, Mckinsey's and Banes report etc.
- Primary data collection through interviews
- Summarization of interviews

Findings and interpretation:

- The district analysis was done in three parts viz. administrative profile, health indicators profile and health seeking behaviour profile.
- On the basis of which 4-5 key features of each of the districts were identified. The findings have been described in detail under the annexures

Conclusive Learning, Limitations and Suggestions For Improvement

Two months of the training at WISH enabled to have an in depth knowledge about the organisational culture and also enhanced understanding of the public health scenario in India.

The scenario based strategic planning was totally a unique experience which helped in understanding the setting up of the organisation right from its inception. The various activities undertaken under the planning exercise enabled to have a better understanding of the entire organisational system. The skill building exercise taught to be more sensitive towards people who have a different working or innovation style to you and thus in turn taught ways of how to nurture interpersonal relationships with the colleagues in future by being sensitive to others style of working and innovation. Interviews with various stakeholders gave opportunity to interact with the senior experienced public health professionals and thus gave wide exposure and opportunity to learn from them. Working

for the situational analysis of 15 districts through secondary data enhanced analytical, technical and data presentation skills. It enabled to identify the hidden stories that the data reveals.

Working with WISH was a perfect blend of both exposure and experience. It has enhanced knowledge and understanding of the subject and also helped in building up confidence and improving communication skills.

Report

Background

WISH is under the process of planning its positioning strategy in order to create the maximum impact by serving millions of BOP families by 2020. All the assignments accomplished were designed to meet the needs of achieving its mission and visions keeping in mind its core values and principles. In order to assess the current and the future scenario of the healthcare ecosystem in India the Research team worked to prepare a situational analysis report on the prevailing healthcare innovation ecosystem and also worked to support Program team to prepare a background situational analysis among 15 districts of Rajasthan where WISH is going to introduce programs under partnership with State Ministry of Health and Family welfare. The situational analysis of the healthcare ecosystem was basically done to strategize the positioning strategy of WISH in the coming five years.

WISH wants to work for improving health of children less than five years of age and thus one of the assignments assigned was to prepare district health profiles of children under the age group of five years. This report focuses on the health profiles of children below five years

The state of interest chosen by the organisation is Rajasthan. They selected a list of 15 districts from the state for which the district health profiles for children below five years was to be made.

Assignment objectives

- To prepare a background situational analysis of the health profile of children under the age of five years among 15 districts of Rajasthan
- To determine the association between poverty and mortality indicators in the focus districts
- To determine the association between mortality rates and safe deliveries

Methodology and research design

Quantitative secondary researches were undertaken to accomplish the task assigned. The steps followed were:

Preparation of district profiles:

- Identification of important indicators
- Data collection
- Data analysis
- Report writing

Identification of important indicators:

The indicators were chosen after analysing the data available in various district level health survey reports on the basis of the relevance of the indicators in the preparation of health profile of children under the age of five years in the focus districts. The indicators chosen were:

1. BPL population
 - a. percentage of BPL population across districts
2. safe deliveries
 - a. percentage of children born safe
3. Mortality rates
 - a. Infant Mortality Rate
 - b. Neonatal Mortality Rate
 - c. Under Mortality Rate
4. Breastfeeding practises
 - a. percentages of children who received colostrum within one hour of birth
 - b. percentages of children who received exclusive breastfeeding for six months
5. Low birth weight babies
 - a. percentages of children born underweight
6. Immunization status
 - a. percentages of children fully immunized
 - b. percentages of children who did not receive any immunization
7. Acute infections & treatment seeking behaviour
 - a. percentage of children from diarrhoea and percentage of those who sought treatment for diarrhoea
 - b. percentage of children from acute respiratory infection and percentage of those who sought treatment for acute respiratory infection
 - c. percentage of children from fever and percentage of those who sought treatment for fever

Data collection

The data was collected from the most recent district level health survey report available of AHS I and AHS II. The two years data was collected in order to see the trend, if any, in the health profiles.

Data analysis

The data for each indicator was analysed in excel through graphs and tables. The indicators were then divided into two categories viz. good indicators and bad indicators.

Good Indicators	Bad indicators
Safe delivery	IMR
Percentage of children receiving colostrum within one hour of birth	NMR
Percentage of children receiving exclusive breastfeeding	U5MR
Percentage of children receiving fully immunized	Percentage of children who did not receive any immunization
Percentage of children availing diarrhoea treatment	LBW
Percentage of children availing ARI treatment	Percentage of children suffering from diarrhoea
Percentage of children availing fever treatment	Percentage of children suffering from ARI
	Percentage of children suffering from fever

The cumulative scores of all the good indicators and cumulative scores of all the bad score were calculated.

The good and bad index was calculated separately by the formula:

Index = Actual value-Minimum value/Maximum value-minimum value

Cumulative Index = Cumulative scores / total no. of indicators

Then the districts were classified as high, medium and low priority districts on the basis of scores obtained. The districts having index for good indicators below 0.5 and index for bad indicators above 0.5 were put in the category of high priority districts. And the districts whose index were between 0.6 – 0.8 for good indicators and 0.3-0.5 for bad indicators were medium priority districts. The districts with a good indicator index 0.9-1 and bad indicator index 0.1-0.2 were low priority districts.

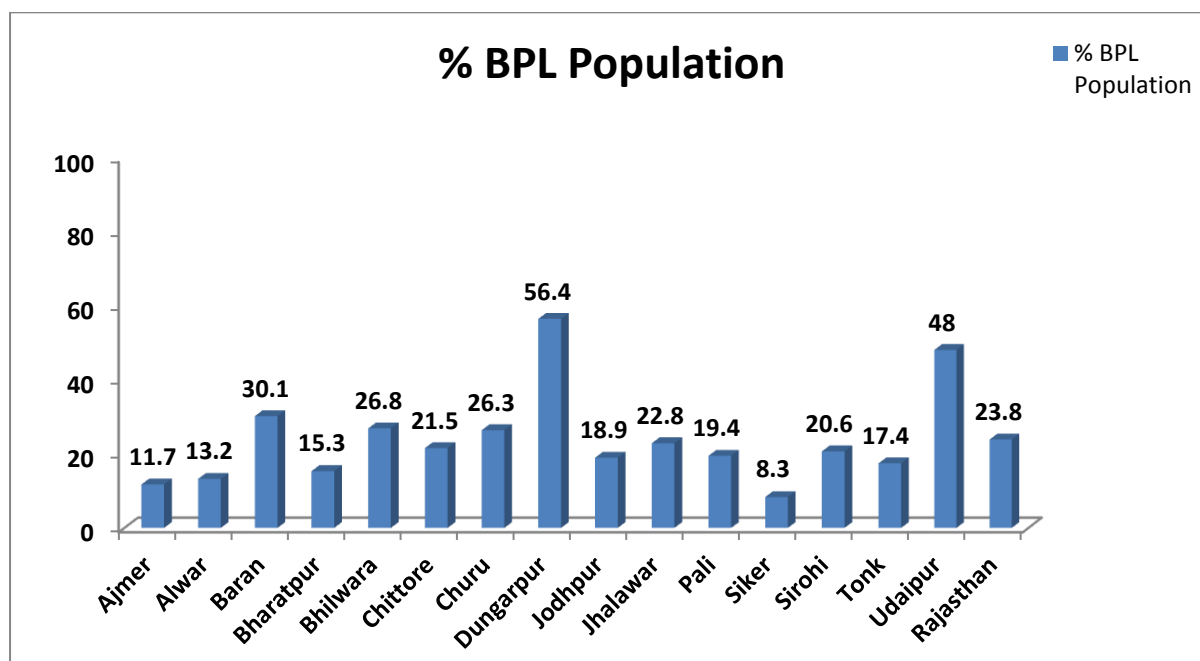
Findings and interpretation:

The data for each indicator was analysed separately.

1. BPL population

Rajasthan has 24% of its total population (68.5 million) below poverty line which accounts for 16.5 million poor people which means that one out of every four individual belongs to below poverty line. This is more than the country's average of 21.92 percent. The population below poverty line is vulnerable and often devoid of basic amenities like food and health. The highest share among the focus districts comes from Dungarpur which has a high share of tribal population, which has more than half of the total population below poverty i.e every second person is poor and cannot afford his basic needs. Udaipur also has approximately half of the population below poverty line. The districts like Baran, Bhilwara and Churu also have BPL population more than the state average. All the other districts also have a considerable share of BPL population lowest being that of the district Sikar (8.3%) which could be one of the reasons for the poor health status of the children below five years across these districts. Below Poverty Line is an economic benchmark and poverty threshold used by the government of India to indicate economic disadvantage and to identify individuals and households in need of government assistance and aid. The graph clearly shows that Rajasthan is in need of government assistance and aid. (Refer fig.1)

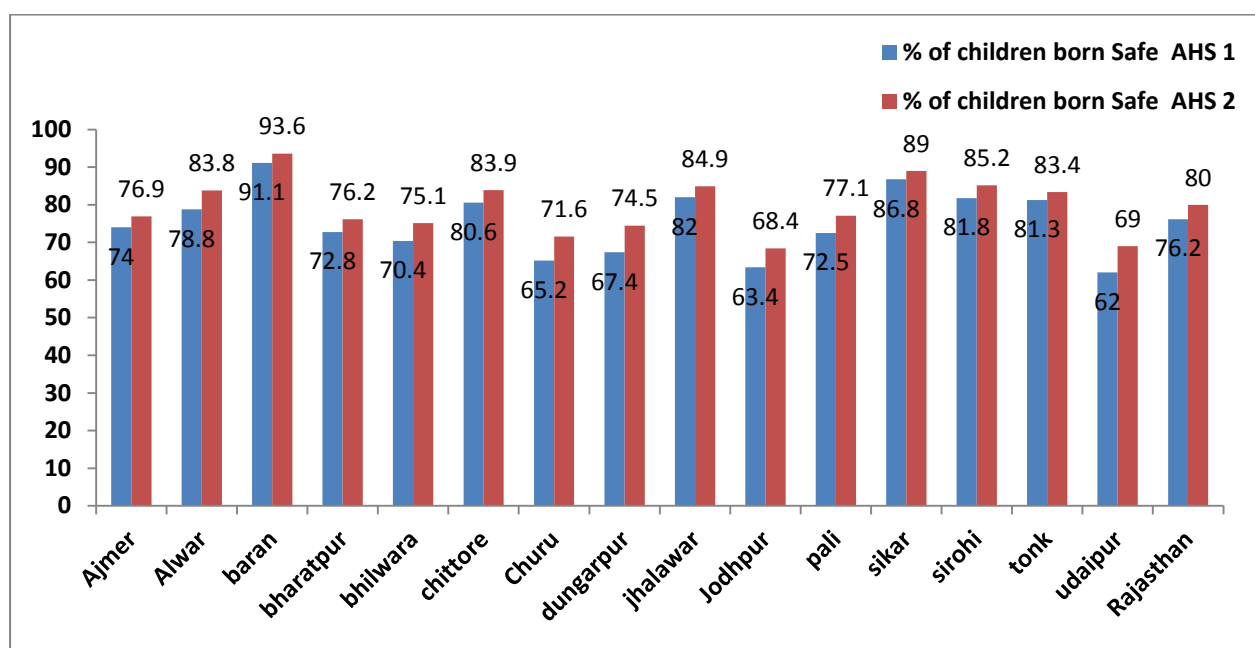
Figure 1 Graph showing district wise percentage of BPL population



2. Safe deliveries

The first and foremost requirement of a child to be healthy after birth is that the child should be born in safe environment. The delivery should be attended by a skilled birth attendant to reduce the probability of infant mortality. Rajasthan on an average has increased by 4% (from 76% to 80%) in the percentage of safe deliveries. Still 20 percent children are devoid of this basic right. Some of the districts like Baran, Alwar, Chittore, Jhalawar, Sikar, Sirohi and Tonk have shown a good improvement in last two years and are above than the state average. But the issue remains a matter of concern for districts like Ajmer, Bharatpur, Bhilwara, Churu, Dungarpur, Jodhpur, Pali and Udaipur. The condition of Pali, Jodhpur and Udaipur is further worse where more than 30 percent children are born under unsafe conditions leading to increased vulnerability to death.(Refer fig.2)

Figure 2 Graph showing district wise list of percentage of children born safe



3. Mortality rates

Mortality indicators give us an idea about the situation of the most vulnerable of the state. The data for infant, neonatal and under 5 mortality were taken from both AHS I and AHS II to see the trend in the focus districts.

Infant mortality rate for Rajasthan is still higher than the country's average, though it has declined from 60 to 57 across the two AHS. IMR in the districts of Bharatpur, Dungarpur, Jhalawar, Baran, Chittore, Sirohi and Udaipur is higher than the state average across two years. Districts namely Sirohi, Bharatpur and Tonk show an increase in the infant mortality rates whereas all the other districts show a decline in the same. (Refer fig 3.a)

Neonatal mortality rate of state is 38 per 1000 live births, highest being in the districts of Bhilwara, Jhalawar and Chittore across two years. NMR also shows an increasing trend in the district of Tonk but rest all the districts show a decreasing trend in the indicator. Still districts of Sirohi, Jhalawar, Dungarpur, Chittore, Bhilwara and Baran have a NMR higher than the state average in AHS II. NMR gives an idea about the quality of care being provided to the infants of the society when they are born. The data shows a poor quality of care in the state. . (Refer fig 3.b)

Under five mortality indicators gives an idea about the immunization and nutritional status of the child in the state. The U5MR of the state is 76 per 1000 population, districts of Sirohi, Udaipur, Baran, Bhilwara, Alwar, Churu, Dungarpur, Jhalawar and Sikar show a number higher than the state average. Sirohi, Tonk, Chittore, Baran and Alwar show an increasing trend in U5MR across two years but rest all the districts show an improvement in the numbers. . (Refer fig 3.c)

Figure 3.a Graph showing district wise Infant Mortality Rate across two AHS

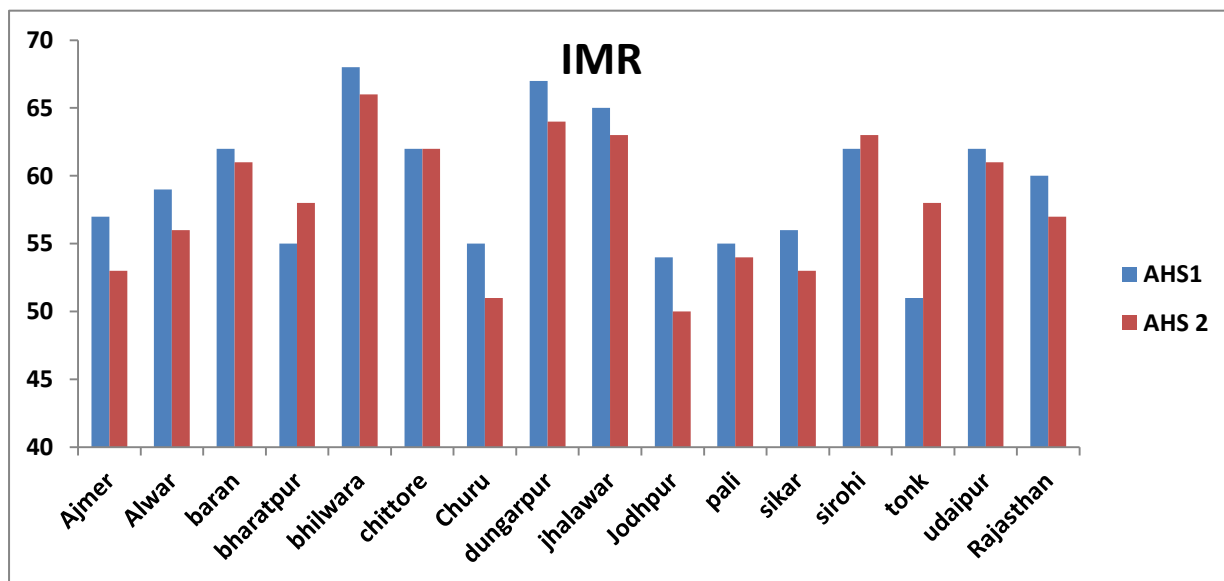


Figure 3.b Graph showing district wise Neonatal Mortality Rate across two AHS:

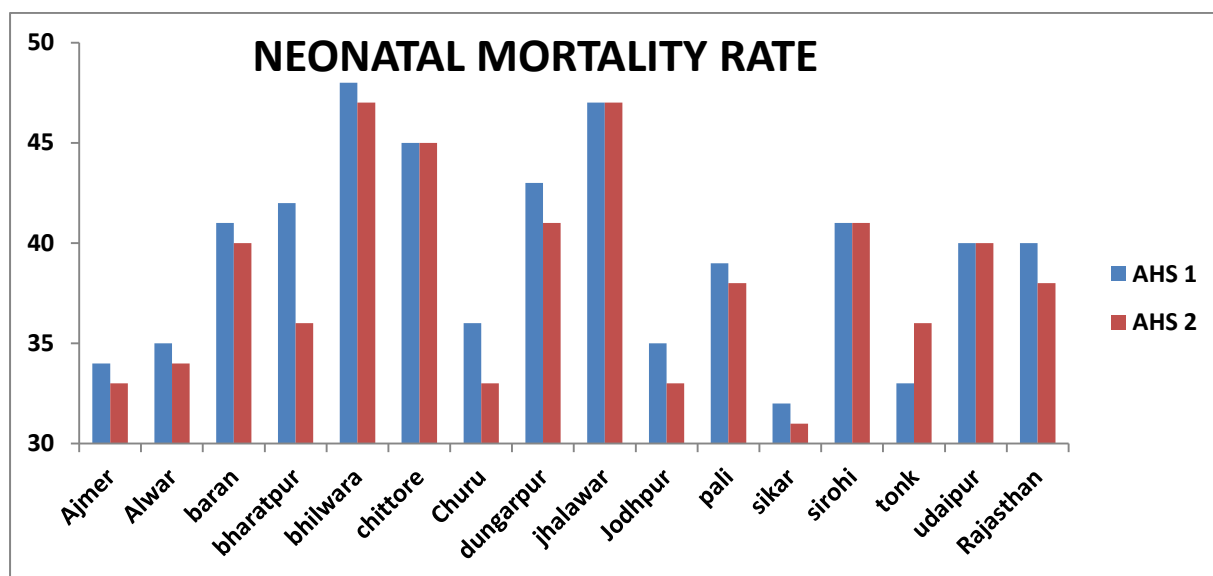
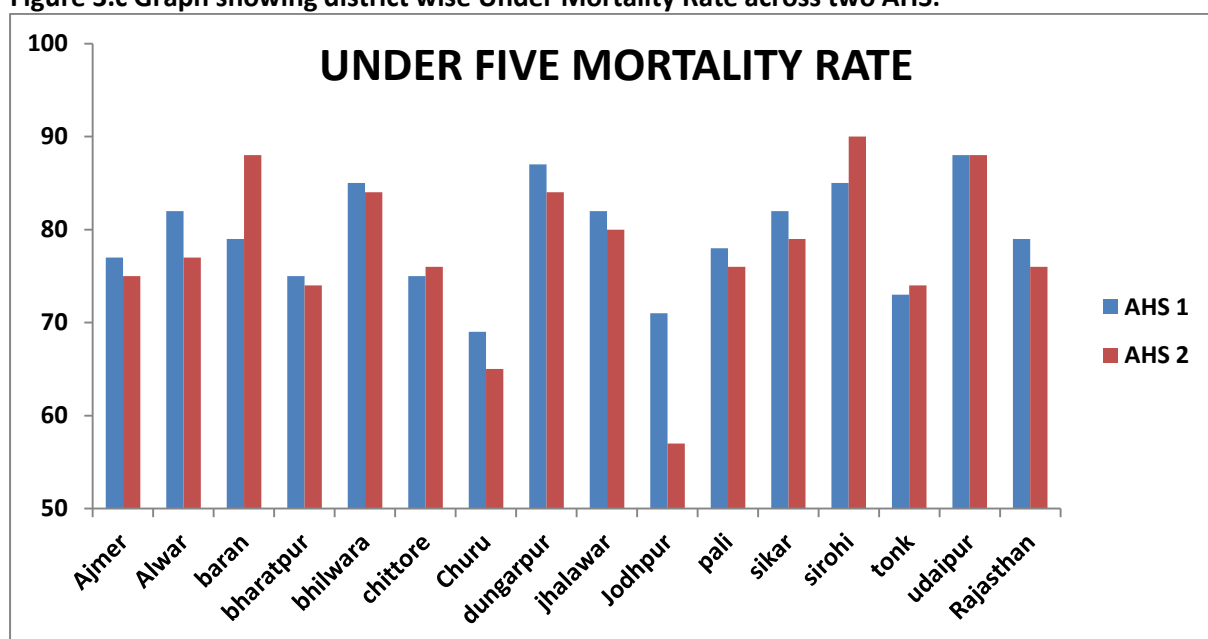


Figure 3.c Graph showing district wise Under Mortality Rate across two AHS:



4. Breastfeeding practises

Early breastfeeding practices determine the successful establishment and duration of breastfeeding. It is recommended that children be put to the breast immediately or within one hour of birth. There is growing evidence of the benefits to mother and child of early initiation of breastfeeding preferably in the first hour of the birth. Early initiation of breastfeeding contributes to reducing neo-natal mortality. It ensures early skin to skin contact which is important in preventing hypothermia and establishing the bond between the mother and her child. Early initiation of breastfeeding also reduces the mother's risk of postpartum haemorrhage, one of the leading causes of maternal mortality. Although breastfeeding is nearly universal in India, very few children are put to breastfeed immediately after birth. On an average 50 percent of children (i.e. every second child) is still deprived of colostrum within one hour of birth. Though the condition has slightly improved in last two years but still the improvement is minimal. Churu, Jhalawar and Chittore are still doing better because they show a share much more than the state average but the situation is alarming among all the other districts ranging in between 40 to 50%. Further dangerous is the trend in the districts of Udaipur, Jodhpur and Dungarpur where the condition instead of improving has declined from its initial levels. (Refer fig 4.a)

Exclusive breastfeeding for the first six months of the child's life is an essential component of the optimal infant and young child feeding practices. The Government of India recommends that children should be exclusively breastfed for the first six months of life (i.e., the child should be given only breast milk and nothing else, not even water). Although overall breast feeding practises are poor in the state but exclusive breast feeding situation is further ailing because more than 70% of the children on an average are deprived of it in the state..

The condition is improving in all the districts except Sikar. Sikar shows a decrease of 58% from AHS1 (38.3% in AHS1 to 15.9% in AHS2). Bharatpur shows a remarkable 200% improvement from 8.7% to 26% (Refer fig 4.b)

Figure 4.a Graph showing district percentages of children who received colostrum within one hour of birth across two AHS

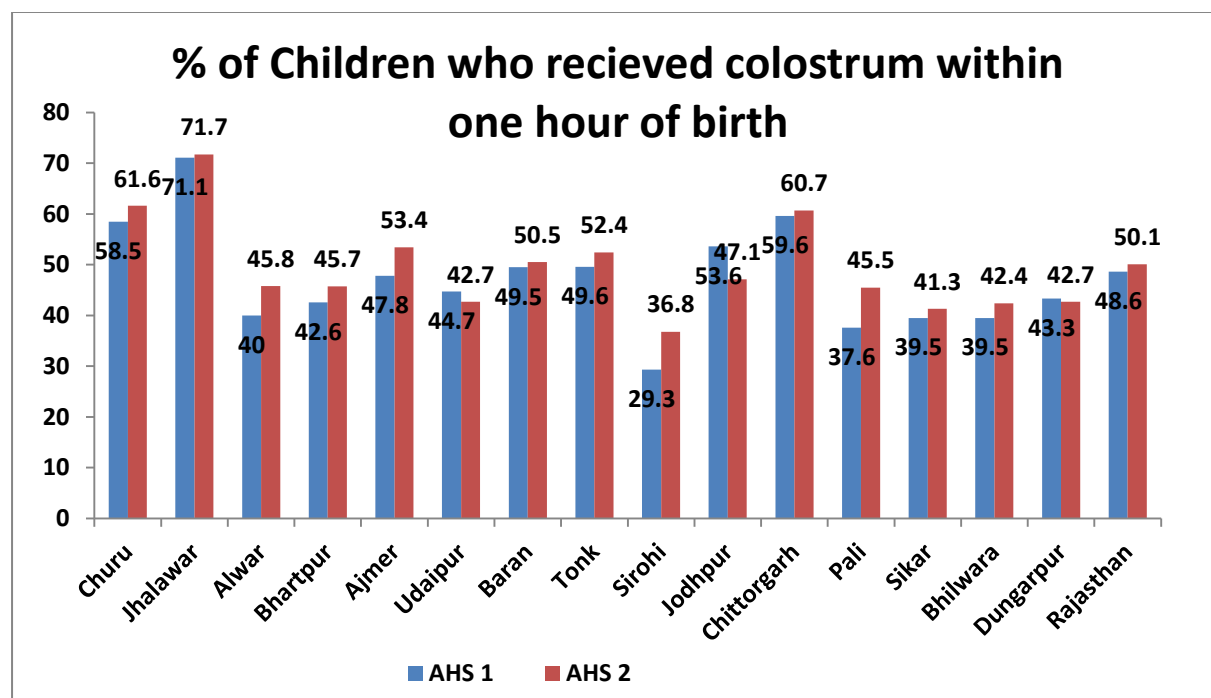
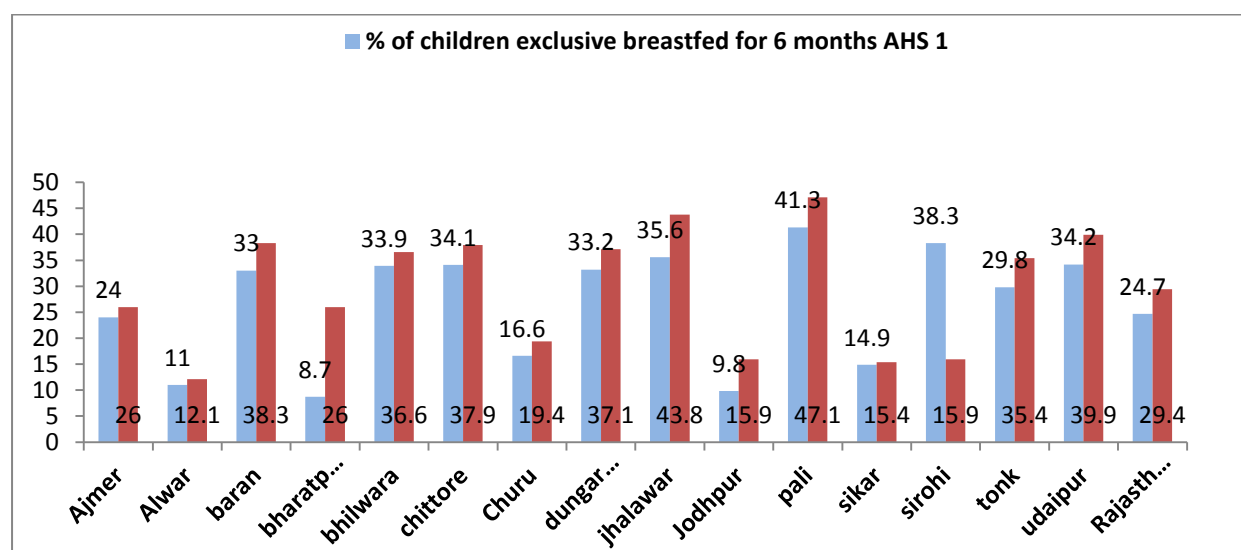


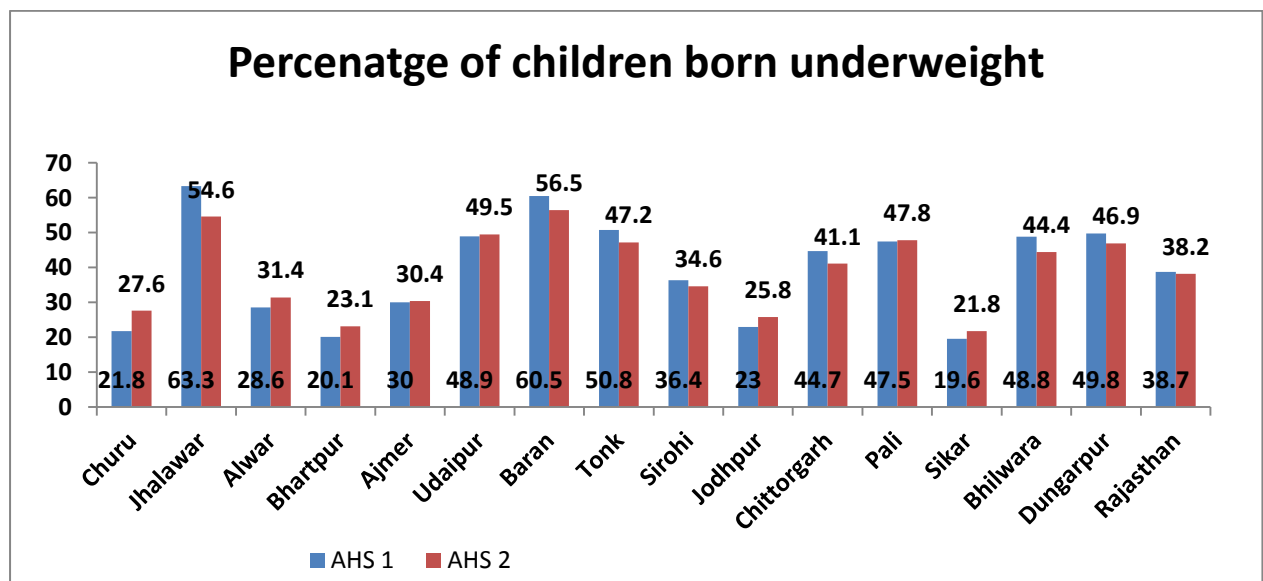
Figure 4.b Graph showing district percentages of children who received exclusive breastfeeding for six months across two AHS



5. Low Birth Weight Babies

Birth weight is an important indicator to measure the vulnerability of a new born to the risk of childhood illness and chances of survival. The information on birth weight assists in monitoring programmes to reduce neo-natal and infant mortality through a reduction in low birth weight infants. Low birth weight babies are more prone to infections and death. The state trend for last two years shows approximately 40 percent children are born below normal birth weight of 2500 grams. The trend across districts shows variable trends. Districts like Churu, Alwar, Jodhpur, Udaipur, Bharatpur and Sikar show an increase in the percentage of low birth weight babies in AHS2 when compared to AHS1. Also districts of Jhalawar, Udaipur, Tonk, Chittore, Baran, Pali, Bhilwara and Dungarpur show a higher percentage of low birth weight babies as compared to state average. (Refer fig 5)

Figure 5 Graph showing district percentages of children born underweight across two AHS



6. Immunization Status

According to the WHO guidelines, children are considered fully immunized when they have received vaccination against tuberculosis, three doses of DPT, three doses of the poliomyelitis and one dose of measles. Universal immunization of children against six diseases is vital for reducing infant and child mortality. Immunization status of the children of Rajasthan on an average has surprisingly reduced in two years (from 71% to 69%). More than 30 percent children do not receive full immunization which is one of the prime requirements for a child to be healthy According to epidemiological concept; if the 85 percent of children are fully immunized by the program or providers then herd immunity can take

care of the remaining 15 percent. Attainment of 85 % of immunization status seems to be a distant goal for the state. The situation is worse in Tonk and Jhalawar where more than 40% of children are not fully immunized. Sirohi, Pali and Jodhpur also have less percentage of fully immunized children when compared to the state average. Rest for all the districts have immunization status better than the state average but districts of Bhilwara, Chittore, Dunagrpur, Jodhpur, Pali, Sirohi and Udaipur shows a decreasing trend in the percentage of fully immunized children across two years which is a matter of concern. (Refer fig 6.a)

The state average of children who did not receive any immunization is in double digits and has increased across two years (from 5.9 to 12.1%). Similar increasing trend is also seen in the districts of Ajmer, Alwar, Chittore, Jodhpur and Udaipur. Jodhpur has the worst status with 15 % of children without any immunization but all the other districts have been able to successfully reduce this number to single digits. (Refer fig 6.b)

Figure 6.a Graph showing district percentages of children fully immunized in across two AHS

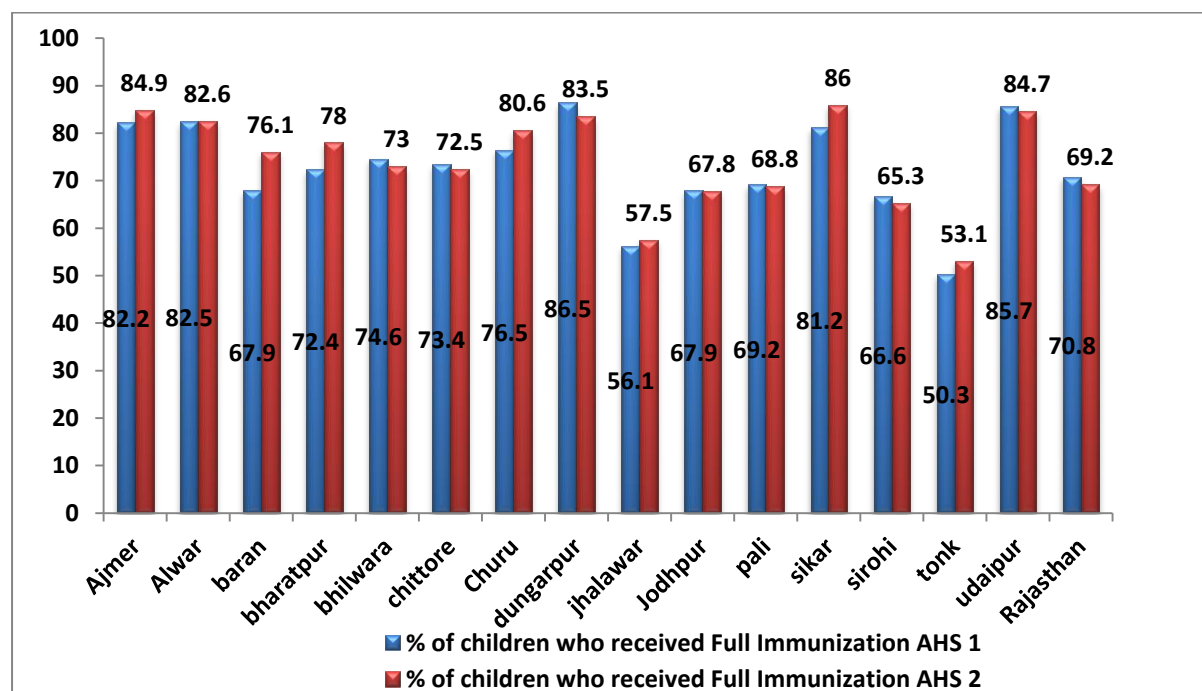
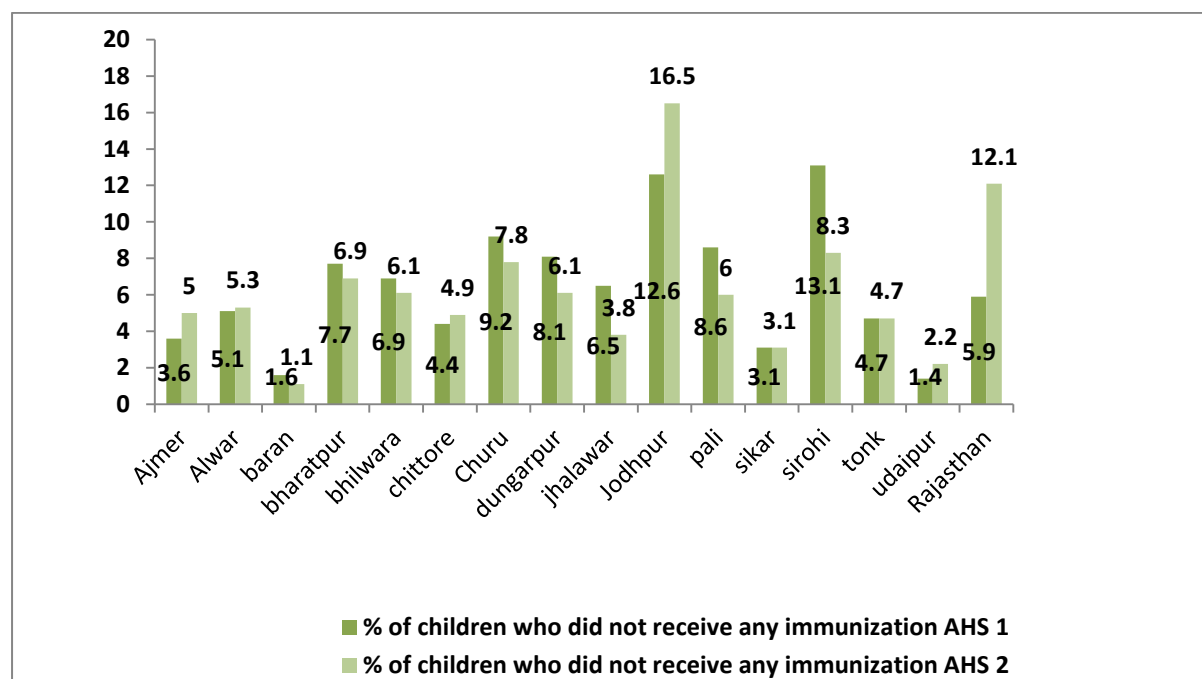


Figure 6.b Graph showing district percentages of children who did not receive any immunization across two AHS



7. Acute Infections and Treatment Seeking Behaviour

Treatment practices and contact with health services among children with the 3 most important childhood illnesses namely, Acute Respiratory Infection (ARI), Fever and Diarrhoea, it helps in the assessment of National Programmes aimed at reducing the mortality impact of these illnesses. Fever and Diarrhoea in respect of all the living children [last two outcomes of pregnancy(s) resulting in live births during reference period, i.e., 2008-10] during fifteen days preceding the date of survey has been collected. Besides the prevalence, the information on treatment of ARI with antibiotics, treatment of fever and the treatment of diarrhoea with Home Available Fluids (HAF) / fluids prepared from ORS packet has been collected. The treatment of diarrhoeal diseases with Oral Rehydration Therapy (ORT) aids in the assessment of programmes that recommends such treatment. Based on these data, the percentage of children suffering from Diarrhoea and received HAF / ORS / ORT (Refer fig 7.a, 7.b), percentage of children suffering from ARI and sought treatment (Refer fig 7.c, 7.d), and percentage of children suffering from fever and sought treatment have been calculated and presented. (Refer fig 7.e, 7.f)

Figure 7.a Graph showing district percentages of children suffering from diarrhoea across two AHS

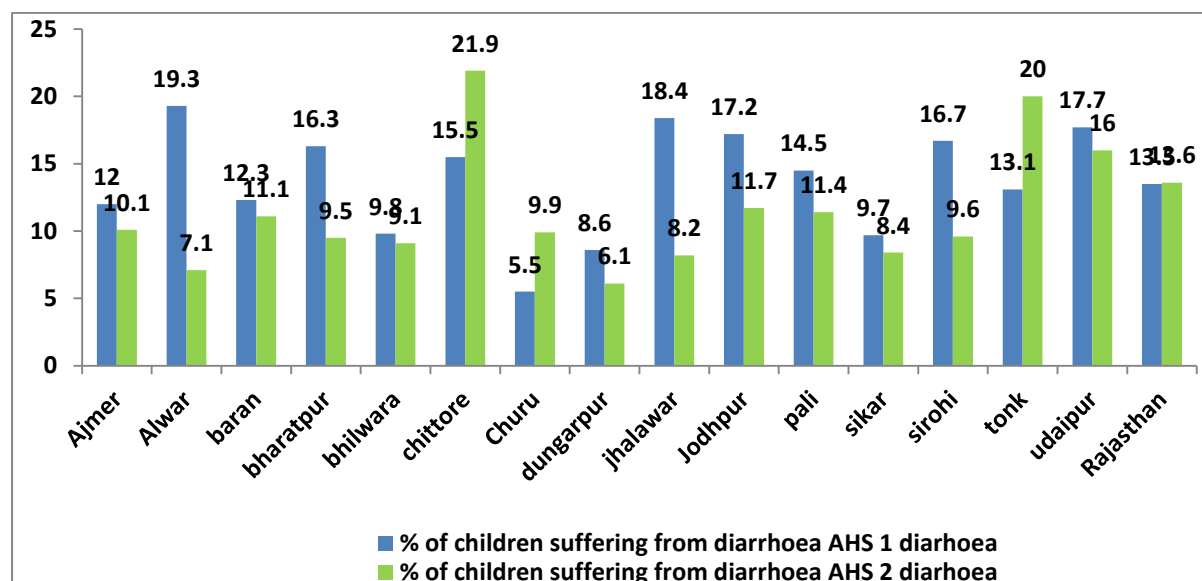


Figure 7.b Graph showing district percentages of children suffering from diarrhoea who sought treatment across two AHS

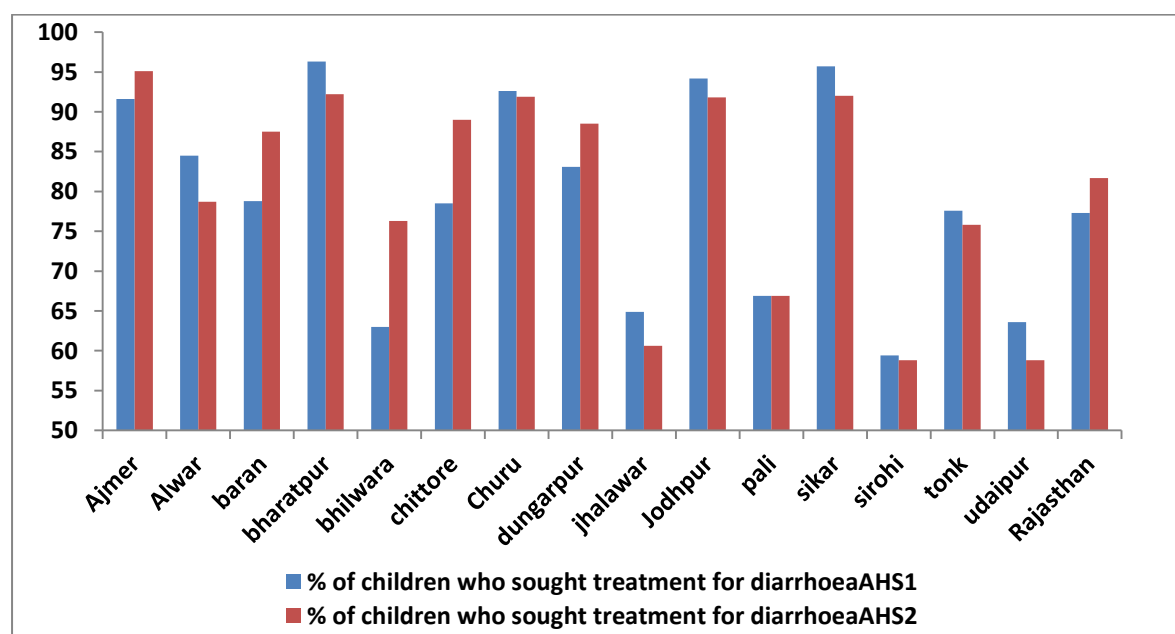


Figure 7.c Graph showing district percentages of children suffering from ARI across two AHS

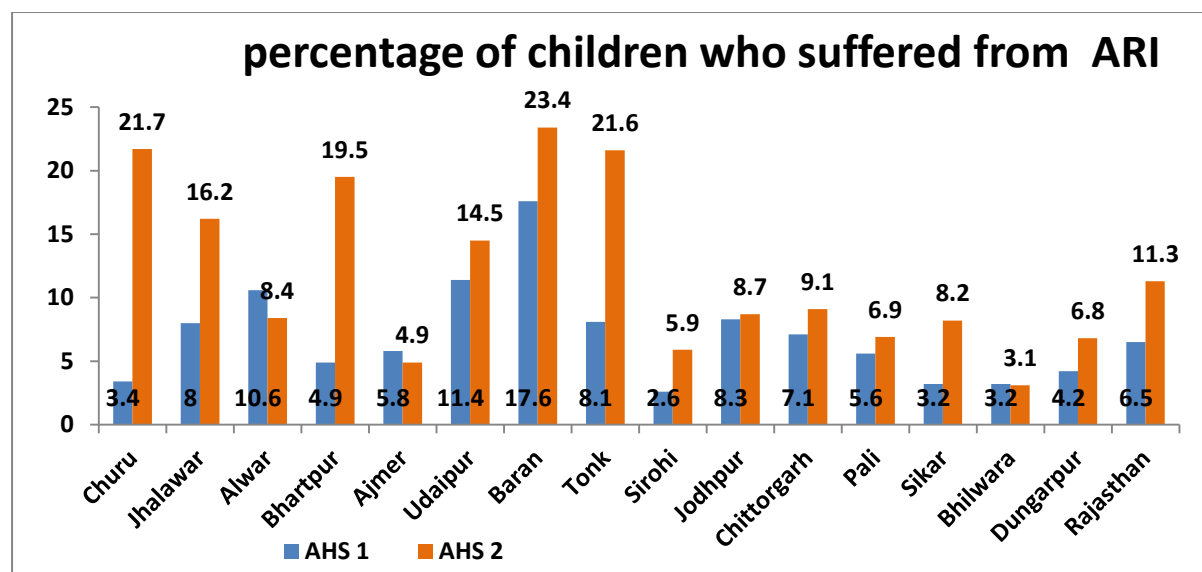


Figure 7.d Graph showing district percentages of children suffering from ARI who sought treatment across two AHS

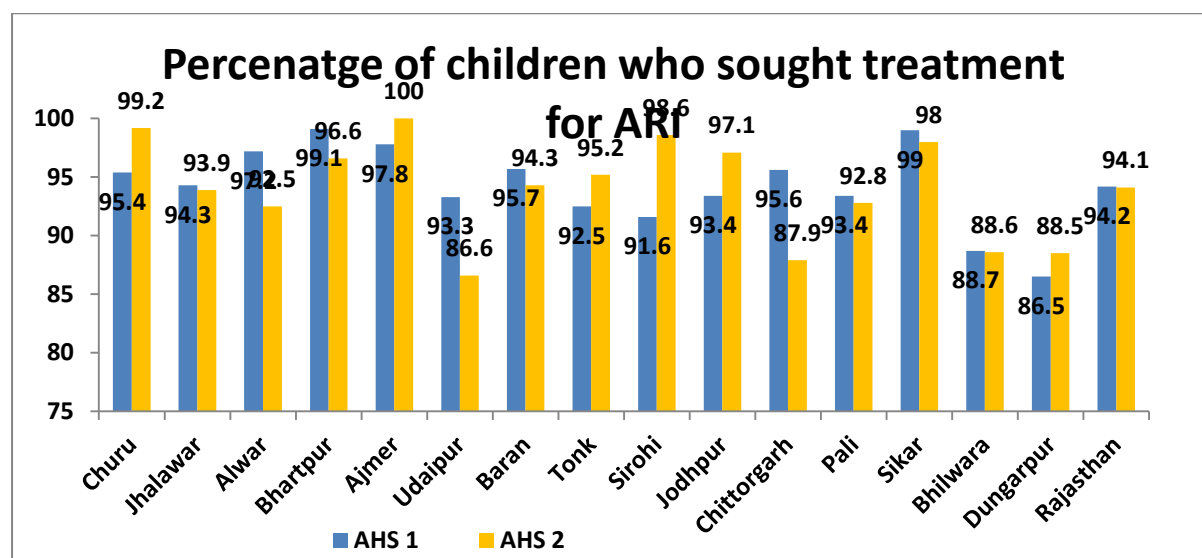


Figure 7.e Graph showing district percentages of children suffering from Fever across two AHS

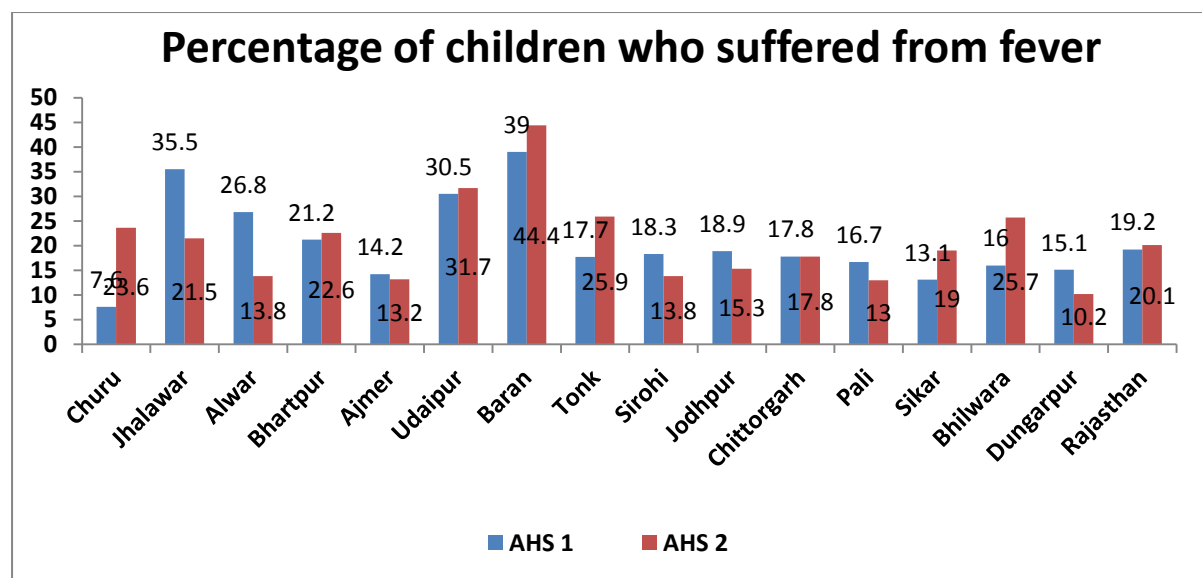
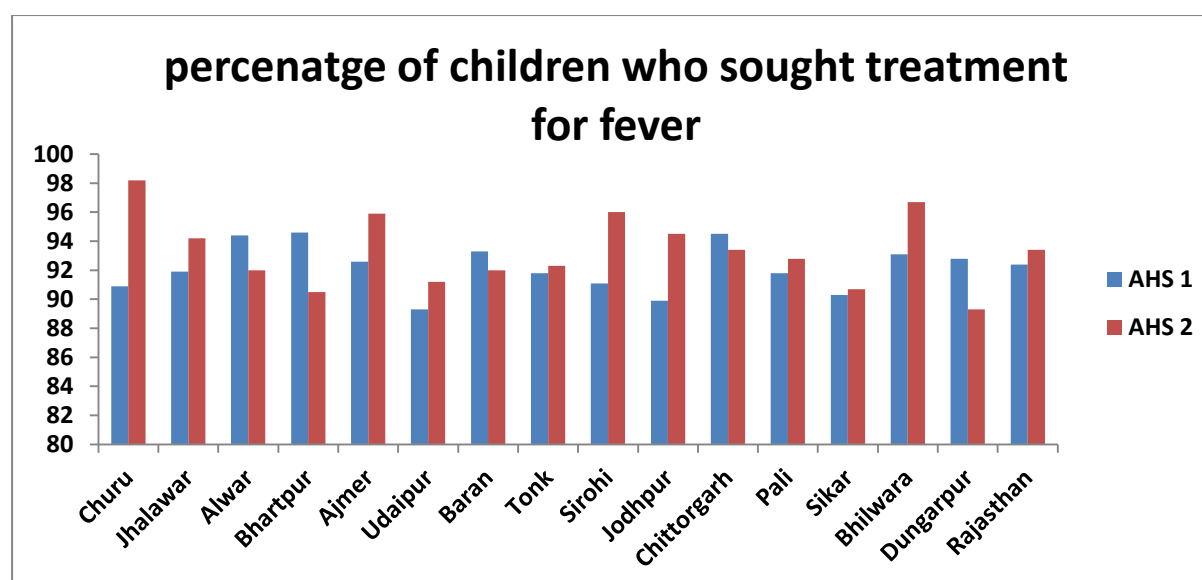


Figure 7.f Graph showing district percentages of children suffering from Fever who sought treatment across two AHS



Index Calculation table

The index for each indicator was calculated from the data of AHS II. Table 1.1 shows the individual index for each of the good indicators and then cumulative good index was calculated. Similar method was repeated to obtain cumulative bad indicator index which is shown in table 1.2

Table No. 1.1 Cumulative good indicator index

District	Safe deliveries	Colostrum	EBF	Immunization	Diarrhoea treatment	ARI treatment	fever treatment	Total	Good Index (total/7)
Ajmer	0.33730 1587	0.4756 447	0.39714 2857	0.966565 35	1	1	0.7415 73	4.91 823	0.7026 0393
Alwar	0.61111 1111	0.2578 7966	0	0.896656 535	0.54820 9366	0.44029 8507	0.3033 708	3.05 753	0.4367 8942
baran	1	0.3925 5014	0.74857 1429	0.699088 146	0.79063 3609	0.57462 6866	0.3033 708	4.50 884	0.6441 2014
bharatpur	0.30952 381	0.2550 1433	0.39714 2857	0.756838 906	0.92011 0193	0.74626 8657	0.1348 315	3.51 973	0.5028 186
bhilwara	0.26587 3016	0.1604 5845	0.7	0.604863 222	0.48209 3664	0.14925 3731	0.8314 607	3.19 4	0.4562 8611
chittore	0.61507 9365	0.6848 1375	0.73714 2857	0.589665 653	0.83195 5923	0.09701 4925	0.4606 742	4.01 635	0.5737 638
Churu	0.12698 4127	0.7106 0172	0.20857 1429	0.835866 261	0.91184 573	0.94029 8507	1	4.73 417	0.6763 0968
dungarpur	0.24206 3492	0.1690 5444	0.71428 5714	0.924012 158	0.81818 1818	0.14179 1045	0	3.00 939	0.4299 1267
jhalawar	0.65476 1905	1	0.90571 4286	0.133738 602	0.04958 6777	0.54477 6119	0.5505 618	3.83 914	0.5484 485
Jodhpur	0	0.2951 2894	0.10857 1429	0.446808 511	0.90909 0909	0.78358 209	0.5842 697	3.12 745	0.4467 7879
pali	0.34523 8095	0.2492 8367	1	0.477203 647	0.22314 0496	0.46268 6567	0.3932 584	3.15 081	0.4501 1584
sikar	0.81746 0317	0.1289 3983	0.09428 5714	1	0.91460 0551	0.85074 6269	0.1573 034	3.96 334	0.5661 9086
sirohi	0.66666 6667	0	0.10857 1429	0.370820 669	0	0.89552 2388	0.7528 09	2.79 439	0.3991 9859
tonk	0.59523 8095	0.4469 914	0.66571 4286	0	0.46831 9559	0.64179 1045	0.3370 787	3.15 513	0.4507 3329
udaipur	0.02380 9524	0.1690 5444	0.79428 5714	0.960486 322	0	0	0.2134 831	2.16 112	0.3087 3131

Table No. 1.1 Cumulative bad indicator index

District	No immunization	IMR	NMR	U5MR	Diarrhoea	ARI	Fever	LBW	Total	Bad Index (total/8)
Ajmer	0.25324675	0.1875	0.125	0.545455	0.253165	0.089	0.088	0.248	1.789	0.22357422
Alwar	0.27272727	0.375	0.1875	0.606061	0.063291	0.261	0.105	0.277	2.148	0.26844787
baran	0	0.6875	0.5625	0.939394	0.316456	1	1	1	5.506	0.6882312
bharatpur	0.37662338	0.5	0.3125	0.515152	0.21519	0.808	0.363	0.037	3.127	0.39092295
bhilwara	0.32467532	1	1	0.818182	0.189873	0	0.453	0.651	4.437	0.55465547
chittore	0.24675325	0.75	0.875	0.575758	1	0.296	0.222	0.556	4.521	0.56518694
Churu	0.43506494	0.0625	0.125	0.242424	0.240506	0.916	0.392	0.167	2.581	0.32258894
dungarpur	0.32467532	0.875	0.625	0.818182	0	0.182	0	0.723	3.548	0.44355826
jhalawar	0.17532468	0.8125	1	0.69697	0.132911	0.645	0.33	0.945	4.739	0.59233503
Jodhpur	1	0	0.125	0	0.35443	0.276	0.149	0.115	2.02	0.25246113
pali	0.31818182	0.25	0.4375	0.575758	0.335443	0.187	0.082	0.749	2.935	0.36690318
sikar	0.12987013	0.1875	0	0.666667	0.14557	0.251	0.257	0	1.638	0.20476849
sirohi	0.46753247	0.8125	0.625	1	0.221519	0.138	0.105	0.369	3.739	0.46732772
tonk	0.23376623	0.5	0.3125	0.515152	0.879747	0.911	0.459	0.732	4.544	0.56794343
udaipur	0.07142857	0.6875	0.5625	0.939394	0.626582	0.562	0.629	0.798	4.876	0.60948838

TABLE 1.3 SHOWING THE CUMULATIVE INDEX FOR BAD AND GOOD INDICATORS

DISTRICT	BAD INDICATOR INDEX	GOOD INDICATOR INDEX
AJMER	0.223574215	0.702603932
ALWAR	0.268447873	0.436789423
BARAN	0.688231204	0.64412014
BHARATPUR	0.390922952	0.502818601
BHILWARA	0.554655471	0.456286109
CHITTORE	0.565186939	0.573763805
CHURU	0.322588938	0.676309682
DUNGARPUR	0.443558262	0.429912667
JHALAWAR	0.592335034	0.548448498
JODHPUR	0.252461129	0.446778792
PALI	0.366903179	0.450115843
SIKAR	0.204768486	0.566190864
SIROHI	0.467327716	0.399198592
TONK	0.567943429	0.450733292
UDAIPUR	0.609488376	0.308731307

The results throw a light on the situation of child health in the districts which despite improvement in all the indicators with a few exceptions, shows that 11 out of 15 districts have overall poor health status of children. The child starts suffering right from its conception when mothers do not get sufficient meals, and then these children are born in unsafe environment, do not receive colostrum which is best nutrition after birth for them, and then they are not breastfed exclusively adding to their poor health. Children fail to get immunized become prone to infections. Get infected and ultimately die. If survived remains weak and malnourished and if the child is a girl, a weak girl child transforms into a weak adult and then a weak mother who again delivers a weak child and the cycle continues.

According to the present index available Bhilwara, Tonk and Udaipur are the high priority districts. The determinants for poor child health could be poverty, low literacy, unawareness, unavailability, inaccessibility or unaffordability but to find out the right determinants, there is a need for further exploration.

Objective 2 - To determine the association between poverty and mortality rates

It was assumed that one of the reasons for high mortality could be poverty. In order to see if there is any association between the two, statistical test using SPSS proves the relation to be insignificant (Refer table 2.1)

Table 2.1 showing association between poverty, mortality rates and safe deliveries

Correlations

			BPL	IMR	NMR	U5MR	Safedelivery
Spearman's rho	BPL	Correlation Coefficient	1.000	.443	.498	.378	-.414
		Sig. (2-tailed)	.	.098	.059	.165	.125
		N	15	15	15	15	15
	IMR	Correlation Coefficient	.443	1.000	.930**	.723**	.211
		Sig. (2-tailed)	.098	.	.000	.002	.449
		N	15	15	15	15	15
	NMR	Correlation Coefficient	.498	.930**	1.000	.607*	.162
		Sig. (2-tailed)	.059	.000	.	.017	.564
		N	15	15	15	15	15
	U5MR	Correlation Coefficient	.378	.723**	.607*	1.000	.401
		Sig. (2-tailed)	.165	.002	.017	.	.138
		N	15	15	15	15	15
	Safedelivery	Correlation Coefficient	-.414	.211	.162	.401	1.000
		Sig. (2-tailed)	.125	.449	.564	.138	.
		N	15	15	15	15	15

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Objective 3 - To determine the association between mortality rates and safe deliveries

The spearman coefficient value for the mortality rates and safe deliveries shows insignificant values. (Refer table 2.1)

Limitations

The limitations of the study were that no primary research could be conducted and the secondary data available was used to analyse the situation of child health across the districts.

Conclusion

The improvement across the districts seems slow and needs further interventions from the government to make the situation better for the children born in these districts so that the children born in the state also get better opportunities in terms of growth and development.

Annexures

- Table showing the data for all the indicators from AHS I and AHS II

District	% BPL Population
Ajmer	11.7
Alwar	13.2
Baran	30.1
Bharatpur	15.3
Bhilwara	26.8
Chittore	21.5
Churu	26.3
Dungarpur	56.4
Jodhpur	18.9
Jhalawar	22.8
Pali	19.4
Siker	8.3
Sirohi	20.6
Tonk	17.4
Udaipur	48
Rajasthan	23.8

% of children born Safe		
District	AHS 1	AHS 2
Ajmer	74	76.9
Alwar	78.8	83.8
baran	91.1	93.6
bharatpur	72.8	76.2
bhilwara	70.4	75.1
chittore	80.6	83.9
Churu	65.2	71.6
dungarpur	67.4	74.5
jhalawar	82	84.9
Jodhpur	63.4	68.4
pali	72.5	77.1
sikar	86.8	89
sirohi	81.8	85.2
tonk	81.3	83.4
udaipur	62	69
Rajasthan	76.2	80

% of children exclusive breastfed for 6 months		
District	AHS 1	AHS 2
Ajmer	24	26
Alwar	11	12.1
baran	33	38.3
bharatpur	8.7	26
bhilwara	33.9	36.6
chittore	34.1	37.9
Churu	16.6	19.4
dungarpur	33.2	37.1
jhalawar	35.6	43.8
Jodhpur	9.8	15.9
pali	41.3	47.1
sikar	14.9	15.4
sirohi	38.3	15.9
tonk	29.8	35.4
udaipur	34.2	39.9
Rajasthan	24.7	29.4

% of children who recieved colustrum within an hr of birth		
District	AHS 1	AHS 2
Churu	58.5	61.6
Jhalawar	71.1	71.7
Alwar	40	45.8
Bhartpur	42.6	45.7
Ajmer	47.8	53.4
Udaipur	44.7	42.7
Baran	49.5	50.5
Tonk	49.6	52.4
Sirohi	29.3	36.8
Jodhpur	53.6	47.1
Chittorgarh	59.6	60.7
Pali	37.6	45.5
Sikar	39.5	41.3
Bhilwara	39.5	42.4
Dungarpur	43.3	42.7
Rajasthan	48.6	50.1

% of children who did not receive any immunization

District	AHS 1	AHS 2
Ajmer	3.6	5
Alwar	5.1	5.3
baran	1.6	1.1
bharatpur	7.7	6.9
bhilwara	6.9	6.1
chittore	4.4	4.9
Churu	9.2	7.8
dungarpur	8.1	6.1
jhalawar	6.5	3.8
Jodhpur	12.6	16.5
pali	8.6	6
sikar	3.1	3.1
sirohi	13.1	8.3
tonk	4.7	4.7
udaipur	1.4	2.2
Rajasthan	5.9	12.1

% of children who received Full Immunization

District	AHS 1	AHS 2
Ajmer	82.2	84.9
Alwar	82.5	82.6
Baran	67.9	76.1
bharatpur	72.4	78
bhilwara	74.6	73
chittore	73.4	72.5
Churu	76.5	80.6
dungarpur	86.5	83.5
jhalawar	56.1	57.5
Jodhpur	67.9	67.8
Pali	69.2	68.8
Sikar	81.2	86
Sirohi	66.6	65.3
Tonk	50.3	53.1
udaipur	85.7	84.7
Rajasthan	70.8	69.2

	AHS 1			AHS 2		
District	IMR	NMR	U5MR	IMR	NMR	U5MR
Ajmer	57	34	77	53	33	75
Alwar	59	35	82	56	34	77
baran	62	41	79	61	40	88
bharatpur	55	42	75	58	36	74
bhilwara	68	48	85	66	47	84
chittore	62	45	75	62	45	76
Churu	55	36	69	51	33	65
dungarpur	67	43	87	64	41	84
jhalawar	65	47	82	63	47	80
Jodhpur	54	35	71	50	33	57
pali	55	39	78	54	38	76
sikar	56	32	82	53	31	79
sirohi	62	41	85	63	41	90
tonk	51	33	73	58	36	74
udaipur	62	40	88	61	40	88
Rajasthan	60	40	79	57	38	76

Source: AHS I and II

% OF CHILDREN BORN UNDERWEIGHT		
	AHS 1	AHS 2
Churu	21.8	27.6
Jhalawar	63.3	54.6
Alwar	28.6	31.4
Bhartpur	20.1	23.1
Ajmer	30	30.4
Udaipur	48.9	49.5
Baran	60.5	56.5
Tonk	50.8	47.2
Sirohi	36.4	34.6
Jodhpur	23	25.8
Chittorgarh	44.7	41.1
Pali	47.5	47.8
Sikar	19.6	21.8
Bhilwara	48.8	44.4
Dungarpur	49.8	46.9
Rajasthan	38.7	38.2

% of children suffering from diarrhoea			% of children who sought treatment	
	AHS 1	AHS 2	AHS 1	AHS 2
District	diarrhoea	diarrhoea		
Ajmer	12	10.1	91.6	95.1
Alwar	19.3	7.1	84.5	78.7
baran	12.3	11.1	78.8	87.5
bharatpur	16.3	9.5	96.3	92.2
bhilwara	9.8	9.1	63	76.3
chittore	15.5	21.9	78.5	89
Churu	5.5	9.9	92.6	91.9
dungarpur	8.6	6.1	83.1	88.5
jhalawar	18.4	8.2	64.9	60.6
Jodhpur	17.2	11.7	94.2	91.8
pali	14.5	11.4	66.9	66.9
sikar	9.7	8.4	95.7	92

sirohi	16.7	9.6	59.4	58.8
tonk	13.1	20	77.6	75.8
udaipur	17.7	16	63.6	58.8
Rajasthan	13.5	13.6	77.3	81.7

	% of children who suffered from ARI		% of children who suffered from ARI and sought treatment	
	AHS 1	AHS 2	AHS 1	AHS 2
Churu	3.4	21.7	95.4	99.2
Jhalawar	8	16.2	94.3	93.9
Alwar	10.6	8.4	97.2	92.5
Bhartpur	4.9	19.5	99.1	96.6
Ajmer	5.8	4.9	97.8	100
Udaipur	11.4	14.5	93.3	86.6
Baran	17.6	23.4	95.7	94.3
Tonk	8.1	21.6	92.5	95.2
Sirohi	2.6	5.9	91.6	98.6
Jodhpur	8.3	8.7	93.4	97.1
Chittorgarh	7.1	9.1	95.6	87.9
Pali	5.6	6.9	93.4	92.8
Sikar	3.2	8.2	99	98
Bhilwara	3.2	3.1	88.7	88.6
Dungarpur	4.2	6.8	86.5	88.5
Rajasthan	6.5	11.3	94.2	94.1

	% of children who suffered from FEVER		% who sought treatment	
	AHS 1	AHS 2	AHS 1	AHS 2
Churu	7.6	23.6	90.9	98.2
Jhalawar	35.5	21.5	91.9	94.2
Alwar	26.8	13.8	94.4	92
Bhartpur	21.2	22.6	94.6	90.5
Ajmer	14.2	13.2	92.6	95.9

Udaipur	30.5	31.7	89.3	91.2
Baran	39	44.4	93.3	92
Tonk	17.7	25.9	91.8	92.3
Sirohi	18.3	13.8	91.1	96
Jodhpur	18.9	15.3	89.9	94.5
Chittorgarh	17.8	17.8	94.5	93.4
Pali	16.7	13	91.8	92.8
Sikar	13.1	19	90.3	90.7
Bhilwara	16	25.7	93.1	96.7
Dungarpur	15.1	10.2	92.8	89.3
Rajasthan	19.2	20.1	92.4	93.4

Source: AHS I and II