

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

DEPARTMENT OF HEALTH AND FAMILY WELFARE,  
THE GOVERNMENT OF MADHYA PRADESH, INDIA

THE DEVELOPMENT STUDY  
ON  
REPRODUCTIVE HEALTH  
IN  
THE STATE OF MADHYA PRADESH, INDIA

Final Report

Volume 3 - Supporting Report



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March 2002

SYSTEM SCIENCE CONSULTANTS INC.

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THE STATE OF MADHYA PRADESH, INDIA

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## ABBREVIATIONS

ADB	Asian Development Bank
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
ARI	Accute Respiratory Infections
ASO	Assistant Statistical Officer
AWC	Anganwadi Center
AWW	Anganwadi Worker
BCDH	Border Cluster District Health
BEE	Block Extension Educator
BMO	Block Mediacal Officer
BJP	Bharatiya Janata Party
B-PHC	Block-level Primary Health Center
CBD	Community-based Distribution
CBHI	Central Bureau of Health Intelligence
CEO	Chief Executive Officer
CHC	Community Health Center
CHV	Community Health Volunteer
CMHO	Chief Medical and Health Officer
CNAA	Community Needs Assessment Approach
DRDA	District Rural Development Authority
CPR	Couple Protection Rate
CSSM	Child Survival and Safe Motherhood
DANIDA	Danish International Development Assistant
DANLEP	DANIDA-assited National Leprosy Education Programme
DC	District Collector
DCC	District-Level Coordination Committee
DEMO	District Extension Media Officer
DFID	Department for International Development
DMEISM	Department of Medical Education & Indian System of Medicine
DMO	District Malaria Officer
DMS	Director of Medical Services
DPHFW	Department of Public Health & Family Welfare
DPHE	Department of Public Health and Engineering
DPRD	Department of Panchayat & Rural Development
DPT	Diphtheria, Pertussis, Tetanus
DSO	District Statistical Officer
DTC	District Training Center
DWCD	Department of Women and Child Development
EC	European Commission
ELISA	Enzyme-linked Immunosorbent assay
EOC	Essential Obstetric Care
EmOC	Emergency Obstetric Care
FGD	Focus Group Discussion
FPAI	Family Planning Association of India
FRU	First Referral Unit
GDI	Gender Development Index
GII	Japan Global Issues Initiative
GIS	Geographical Information System
GOI	Government of India
GOMP	Government of Madhya Pradesh
GP	Gram Panchayat

GS	Gram Sabha
HDI	Human Development Index
HMIS	Health Management Information System
HIV	Human Immunodeficiency Virus
IAS	Indian Administrative Services
ICDS	Integrated Child Development Scheme
ICPD	International Conference on Population and Development
IDA	International Development Association
IDD	Iodine Deficiency Disorder
IEC	Information Education and Communication
IECB	IEC Bureau
IFA	Iron and Folic Acid
IIFM	Indian Institute of Forest Management
IMR	Infant Mortality Rate
IP	In Patient
IPC	Inter-personal Communication
IPD	Integrated Population & Development
ISD	International Subscriber Dialing
IUD	Intrauterine Device
JICA	Japan International Cooperation Agency
JBIC	Japan Bank for International Cooperation
JP	Janpad Panchayat
JSR	Jan Swasthaya Rakshak
LDC	Lower Division Clerk
LHV	Lady Health Visitor
MCH	Maternal and Child Health
MIES	Management Information and Evaluation System
MMR	Maternal Mortality Ratio
MMS	Mahila Swasthaya Sangh
MSS	Mahila Swasthaya Samiti
MP	Madhya Pradesh
MPFD	Madhya Pradesh Forest Department
MPW	Multi-purpose Worker
MTP	Medical Termination of Pregnancy
NACO	National AIDS Control Programme
NDP	Net Domestic Product
NFHS	National Family Health Survey
NHIS	National Health Information Systems
NGO	Non Governmental Organisation
NIC	National Informatics Center
NRIS	National Resource Information System
NSSO	National Sample Survey Organisation
NTC	Nursing Training Center
OBC	Other Backward Classes
OB/Gyn	Obstetrician & Gynaecologist
OC	Oral Contraceptives
ODA	Official Development Assistance
OP	Out Patient
OPEC	Organization of Petroleum Exporting Countries
ORS	Oral Rehydration Salt
OT	Orientation Training
PCO	Public Call Offices
PHC	Primary Health Center
PNC	Postnatal Care
PRI	Panchayat Raj Institution
PVO	Private Voluntary Organization

PWD	Public Work Department
RCH	Reproductive and Child Health
RKS	Rogji Kalyan Samiti
RMP	Rural Medical Practitioner
RRL	Regional Research Laboratories
RTI	Reproductive Tract Infections
SC	Scheduled Caste
SCOVA	State Committee on Voluntary Action
SDP	Service Delivery Point
SDP	State domestic Product
SFC	State Finance Commission
SHC	Sub-Health Centre
SHG	Self-help Group
SIHCM	State Institute of Health Communication and Management
SIS	Statistical Information System
SOE	Statement of expenditure
S-PHC	Sector-level Primary Health Center
SRS	Sample Registration System
ST	Scheduled Tribe
STD	Subscribers Trunk Dialing
STI	Sexually Transmitted Infections
TB	Tuberculosis
TBA	Traditional Birth Attendant
TFR	Total Fertility Rate
TINP	The Integrated Nutrition Project
TT	Tetanus Toxioid
ULB	Urban Local Bodies
UN	United Nations
UNICEF	United Nations Children's Fund
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UP	Uttar Pradesh
USAID	United States Agency for International Development
VHAI	Voluntary Health Association of India
VHG	Village Health Guide
WB	World Bank
WHO	World Health Organization
ZP	Zilla Parishad

**A: Supporting Data for Chapter 3**  
**in Main Report**

**Population and Demography**

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## A DATA OF POPULATION AND DEMOGRAPHY

**Table 1 Population, 1951-2001**

Year	Population ('000)		Annual Growth Rate (%)	
	India	M.P.	India	M.P.
1951	361,088	26,072	-	-
1961	439,235	32,372	1.98	2.19
1971	548,160	41,654	2.24	2.55
1981	683,329	52,179	2.23	2.28
1991	846,303	66,181	2.16	2.41
2001	1,027,015	81,181	1.95	2.06

Source: Census of India

**Table 2 Population in Sagar Division, 1951-2001**

Year	Sagar div.	(Unit: 1,000)				
		Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
1951	2,101	366	481	260	636	357
1961	2,609	456	587	331	797	438
1971	3,346	569	712	429	1,062	573
1981	4,208	737	887	540	1,323	721
1991	5,333	941	1,158	688	1,648	898
2001	6,636	1,203	1,475	854	2,022	1,082

Source: Census of India

**Table 3 Annual Growth Rate of Population in Sagar Division, 1951-2001**

Year	Sagar Div.	(Unit: %)				
		Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
1951-1961	2.19	2.21	2.02	2.47	2.27	2.06
1961-1971	2.52	2.24	1.95	2.62	2.92	2.72
1971-1981	2.32	2.62	2.21	2.33	2.22	2.33
1981-1991	2.40	2.47	2.71	2.45	2.22	2.21
1991-2001	2.21	2.49	2.45	2.19	2.07	1.88

Source: Census of India

**Table 4 Population in Rural, 1951-1991**

Year	Sagar Div.	(Unit: 1,000)				
		Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
1951	1,842	346	432	238	513	314
1961	2,312	435	531	315	616	416
1971	2,868	541	632	399	802	494
1981	3,466	648	749	498	955	617
1991	4,266	782	935	598	1,216	735

Source: Census of India

**Table 5. Population in Urban, 1951-1991**

(Unit: 1,000)

Year	Sagar div.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
1951	259	20	49	22	123	44
1961	297	20	56	17	181	23
1971	478	28	80	30	260	79
1981	742	89	138	42	369	104
1991	1,066	159	224	90	431	163

Source: Census of India

**Table 6 Proportion of Urban Population to Total Population, 1951-1991**

(Unit: %)

Year	Sagar Div.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh	M.P.
1951	12.3	5.5	10.2	8.5	19.4	12.2	12.0
1961	11.4	4.5	9.6	5.1	22.7	5.2	14.3
1971	14.3	4.9	11.2	7.1	24.5	13.8	16.3
1981	17.6	12.1	15.6	7.8	27.9	14.4	20.3
1991	20.0	16.9	19.3	13.0	26.2	18.1	23.2

Source: Census of India

**Table 7 Sex Ratio\*, 1951-2001**

Year	M.P.	Sagar div.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
1951	967	929	911	893	941	934	980
1961	953	921	906	891	938	920	965
1971	941	895	877	864	923	892	941
1981	941	892	883	864	913	891	925
1991	931	880	871	856	897	881	905
2001	937	887	886	869	907	884	902

\* a number of females per 1000 males

Source: Census of India

**Table 8 Sex Ratio in Age Group of 0-6, 1991 and 2001**

Year	M.P.	Sagar div.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
1991	952	929	918	919	948	935	930
2001	940	929	919	920	932	930	949

Source: Census of India

**Table 9 Distribution of Population by Ten-year Age Group, 1991**

(Unit: %)

Age Group	India	M.P.	Sagar div.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
0 - 4	12.3	13.8	14.3	14.3	14.7	14.2	14.3	14.0
5 - 9	13.3	13.8	14.3	14.4	14.1	14.3	14.3	14.2
0 - 9	25.6	27.6	28.6	28.7	28.7	28.6	28.6	28.2
10 - 19	21.3	20.7	21.4	21.5	21.1	20.8	21.6	21.4
20 - 29	17.2	17.1	17.0	16.3	16.5	16.8	17.6	17.5
30 - 39	13.3	12.8	11.9	11.6	11.3	12.2	12.0	12.3
40 - 49	9.4	8.9	8.4	8.6	8.7	8.8	8.0	8.2
50 - 59	6.3	6.2	6.1	6.4	6.5	6.5	5.8	6.0
60 - 69	4.3	4.1	4.2	4.2	4.4	4.1	4.0	4.1
70 -	2.5	2.6	2.5	2.7	2.8	2.3	2.3	2.2

Source: Census of India

**Table 10 Specialization Ratio of Population by Age Group and Sex (Total), 1991**

Age Group	Madhya Pradesh			Sagar Division		
	Total	Male	Female	Total	Male	Female
0 - 4	1.12	1.12	1.13	1.17	1.17	1.16
5 - 9	1.04	1.03	1.04	1.07	1.08	1.05
10 - 14	0.99	0.99	0.99	1.05	1.09	1.01
15 - 19	0.95	0.96	0.92	0.94	1.01	0.86
20 - 24	0.99	0.98	1.01	1.00	1.01	0.99
25 - 29	1.00	1.01	0.98	0.98	1.02	0.93
30 - 34	1.00	1.01	0.99	0.94	0.98	0.89
35 - 39	0.93	0.94	0.91	0.84	0.88	0.80
40 - 44	0.93	0.92	0.95	0.88	0.87	0.89
45 - 49	0.96	0.94	0.98	0.90	0.88	0.92
50 - 54	0.97	0.97	0.97	0.98	1.00	0.95
55 - 59	0.99	0.97	1.00	0.97	0.97	0.97
60 - 64	0.98	0.98	0.98	1.00	1.04	0.96
65 - 69	0.95	0.93	0.98	0.93	0.93	0.93
70 -	1.01	0.51	0.50	0.97	0.51	0.46
Total	1.00	1.00	1.00	1.00	1.02	0.97

Source: Census of India



**Table 11 Specialization Ratio of Population by Age Group and Sex (Rural), 1991**

Age Group	Madhya Pradesh			Sagar Division		
	Total	Male	Female	Total	Male	Female
0 - 4	1.11	1.10	1.12	1.14	1.15	1.13
5 - 9	1.02	1.02	1.03	1.05	1.07	1.03
10 - 14	0.97	0.98	0.97	1.04	1.08	1.00
15 - 19	0.93	0.95	0.92	0.93	1.00	0.84
20 - 24	1.00	0.97	1.02	1.02	1.03	1.00
25 - 29	1.01	1.02	0.99	0.99	1.04	0.94
30 - 34	1.01	1.03	1.00	0.96	1.02	0.89
35 - 39	0.94	0.96	0.91	0.87	0.92	0.81
40 - 44	0.94	0.93	0.95	0.90	0.90	0.90
45 - 49	0.97	0.96	0.98	0.91	0.90	0.92
50 - 54	0.98	0.98	0.98	0.98	1.02	0.95
55 - 59	1.00	0.98	1.02	0.98	0.98	0.97
60 - 64	0.99	0.98	0.99	0.99	1.04	0.94
65 - 69	0.96	0.93	0.99	0.92	0.93	0.91
70 -	1.02	0.51	0.50	0.94	0.50	0.44
Total	1.00	1.00	1.00	1.00	1.03	0.97

Source: Census of India

**Table 12 Specialization Ratio of Population by Age Group and Sex (Urban), 1991**

Age Group	Madhya Pradesh			Sagar Division		
	Total	Male	Female	Total	Male	Female
0 - 4	1.14	1.14	1.15	1.24	1.25	1.23
5 - 9	1.06	1.06	1.07	1.10	1.10	1.10
10 - 14	1.04	1.04	1.03	1.10	1.12	1.07
15 - 19	0.99	1.01	0.96	1.00	1.06	0.93
20 - 24	1.00	1.00	1.00	0.97	1.00	0.94
25 - 29	0.98	0.98	0.98	0.95	0.98	0.92
30 - 34	0.97	0.97	0.96	0.90	0.91	0.87
35 - 39	0.91	0.91	0.92	0.80	0.80	0.80
40 - 44	0.92	0.90	0.94	0.83	0.80	0.86
45 - 49	0.93	0.91	0.96	0.86	0.82	0.91
50 - 54	0.94	0.95	0.93	0.92	0.91	0.94
55 - 59	0.93	0.94	0.92	0.95	0.95	0.95
60 - 64	0.92	0.93	0.92	0.99	1.00	0.98
65 - 69	0.89	0.88	0.91	0.94	0.88	1.00
70 -	0.97	0.49	0.48	1.08	0.53	0.55
Total	1.00	1.00	1.00	1.00	1.01	0.99

Source: Census of India

**Table 13 Proportion of Currently Married Females by Age Group, 1991**

(Unit: %)

Age Group	India	M.P.	Sagar Div.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
<b>(Total)</b>								
10-14	4.5	8.5	8.8	11.1	14.7	12.3	4.6	4.7
15-19	35.3	51.4	64.8	72.1	69.1	67.3	57.1	63.6
20-24	81.8	89.9	94.0	96.3	94.4	96.3	91.2	94.9
25-29	94.0	96.0	96.7	98.8	92.4	98.6	97.0	98.1
30-34	95.1	96.1	97.5	98.2	97.0	98.0	97.3	97.2
35-39	94.4	95.3	96.5	97.1	97.2	97.2	95.9	95.4
40-44	90.7	91.7	92.7	94.0	92.5	93.4	92.1	91.9
45-49	87.6	88.8	90.1	93.7	88.7	90.3	89.8	88.8
<b>(Rural)</b>								
10-14	5.3	9.9	10.1	11.8	16.5	13.5	5.6	5.4
15-19	40.7	58.8	73.8	77.5	76.9	71.8	70.9	71.9
20-24	86.1	93.9	97.4	98.1	97.3	97.7	96.7	97.8
25-29	95.1	96.7	97.6	99.1	94.0	98.9	98.3	98.6
30-34	95.5	96.2	97.6	98.3	97.4	98.0	97.4	97.3
35-39	94.6	95.3	96.7	97.2	97.4	97.1	96.3	95.5
40-44	90.8	91.7	92.9	94.7	92.4	93.2	92.4	92.2
45-49	87.9	89.0	90.9	94.3	89.2	90.3	91.3	89.1
<b>(Urban)</b>								
10-14	2.2	3.8	4.1	7.7	7.0	4.7	2.3	1.9
15-19	21.3	30.3	37.3	49.7	42.5	39.9	31.3	34.4
20-24	70.6	78.0	81.5	87.6	83.3	86.4	78.3	80.7
25-29	91.1	93.8	93.3	97.2	87.2	96.8	94.0	95.5
30-34	94.3	95.6	96.9	98.1	95.6	97.9	97.0	96.8
35-39	94.1	95.3	95.8	96.8	96.5	97.9	95.1	94.9
40-44	90.2	91.6	91.7	90.9	92.5	95.3	91.2	90.5
45-49	86.4	88.0	87.0	90.0	86.1	90.3	85.8	87.1

Source: Census of India

**Table 14 Currently Married Females with Age at Marriage below 18, 1991**

(Unit: %)

who married during	M.P.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
<b>Total</b>						
(a) 1981-1986	63.8	82.0	76.7	72.3	75.3	77.6
(b) 1986-1991	59.7	79.6	74.0	72.4	69.4	72.6
(c) = (b) - (a)	-4.1	-2.4	-2.7	0.1	-5.9	-5.0
<b>Rural</b>						
(a) 1981-1986	68.2	84.1	80.4	74.2	82.4	82.3
(b) 1986-1991	65.2	82.0	79.3	74.7	78.0	77.8
(c) = (b) - (a)	-3.0	-2.1	-1.1	0.5	-4.4	-4.5
<b>Urban</b>						
(a) 1981-1986	49.5	70.8	62.2	58.8	57.2	55.1
(b) 1986-1991	41.0	67.5	52.1	54.3	47.8	48.2
(c) = (b) - (a)	-8.5	-3.3	-10.1	-4.5	-9.4	-6.9

Source: Census of India

**Table 15 Female Age at Effective Marriage, 1991-1997**

	1991	1992	1993	1994	1995	1996	1997
<b>Total</b>							
(a) India	19.5	19.5	19.6	19.4	19.4	19.4	19.5
(b) M.P.	18.6	18.4	18.8	18.8	19.0	18.9	19.1
(c) = (a) - (b)	0.9	1.1	0.8	0.6	0.4	0.5	0.4
<b>Rural</b>							
(a) India	19.2	19.3	19.4	19.1	19.0	19.0	19.1
(b) M.P.	18.3	18.2	18.6	18.4	18.4	18.4	18.7
(c) = (a) - (b)	0.9	1.1	0.8	0.7	0.6	0.6	0.4
<b>Urban</b>							
(a) India	20.6	20.2	20.5	20.7	20.3	20.7	20.9
(b) M.P.	20.2	19.7	20.6	20.5	20.0	20.8	20.9
(c) = (a) - (b)	0.4	0.5	-0.1	0.2	0.3	-0.1	0.0

Source: SRS

**Table 16 Average Size of Household, 1991**

(Unit: Person/household)

	M.P.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
<b>Total</b>	5.65	6.07	5.91	5.36	5.82	5.32
<b>Rural</b>	5.68	6.03	5.94	5.36	5.71	5.27
<b>Urban</b>	5.54	6.25	5.77	5.38	6.11	5.56

Source: Census of India

**Table 17 Number of Children per Ever Married Females Aged 45-49, 1991**

	M.P.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
<b>Total</b>						
(a) ever born	4.83	5.72	5.47	5.24	5.71	5.43
(b) surviving	3.90	4.41	4.13	4.05	4.48	4.28
(c) = (a) - (b)	0.93	1.31	1.34	1.19	1.23	1.15
<b>Rural</b>						
(a) ever born	4.93	5.81	5.58	5.27	5.93	5.51
(b) surviving	3.91	4.43	4.15	4.03	4.53	4.27
(c) = (a) - (b)	1.02	1.38	1.43	1.24	1.40	1.24
<b>Urban</b>						
(a) ever born	4.46	5.23	4.94	5.08	5.13	5.07
(b) surviving	3.89	4.31	4.02	4.18	4.33	4.35
(c) = (a) - (b)	0.57	0.92	0.92	0.90	0.80	0.72

Source: Census of India

**Table 18 Three-year moving average of NGR in M.P., 1971-73 to 1997-99**

		1971-73	1974-76	1979-81	1984-86	1989-91	1994-96	1997-99
Total	CBR	38.6	38.9	37.5	37.8	36.1	32.8	31.1
	CDR	17.1	16.9	15.7	14.0	13.1	11.3	10.9
	NGR	21.5	22.0	21.8	23.8	23.0	21.5	20.2
Rural	CBR	39.6	40.1	38.6	39.4	37.6	34.8	32.6
	CDR	18.1	18.1	17.0	15.2	14.2	12.1	11.6
	NGR	21.4	21.9	21.7	24.2	23.5	22.7	21.0
Urban	CBR	33.4	32.4	31.6	31.7	29.8	23.8	23.2
	CDR	10.9	10.3	9.1	9.1	8.5	7.6	7.6
	NGR	22.5	22.1	22.5	22.6	21.3	16.2	15.6

Source: SRS

**Table 19 Three-year moving average of TFR, 1971-73 to 1995 to 97**

		1971-73	1974-76	1979-81	1984-86	1989-91	1994-96	1995-97
(a) M.P.	Total	5.7	5.7	5.3	4.9	4.7	4.2	4.1
	Rural	6.0	6.0	5.6	5.5	5.0	4.5	4.4
	Urban	4.5	4.3	3.9	3.8	3.3	2.7	2.6
(b) India	Total	5.1	4.8	4.4	4.3	3.8	3.5	3.4
	Rural	5.3	5.1	4.7	4.6	4.1	3.8	3.7
	Urban	4.0	3.7	3.4	3.3	2.8	2.6	2.5
(c) = (a) - (b)	Total	0.6	0.9	0.8	0.5	0.9	0.7	0.7
	Rural	0.7	0.9	0.8	0.8	1.0	0.7	0.7
	Urban	0.4	0.7	0.5	0.5	0.6	0.1	0.1

Source: SRS

**Table 20 Distribution of Districts by TFR, 1991**

TFR	India		M.P.		Sagar division
	Number*	Proportion	Number*	Proportion	
-1.99	2	0.4%	-	-	Sagar(5.51)
2.00-2.49	6	1.3%	-	-	Damoh(5.13)
2.50-2.99	18	4.0%	-	-	Tikamgarh(6.24)
3.00-3.49	63	13.9%	-	-	Chhatarpur(5.55),
3.50-3.99	68	15.0%	3	6.7%	Panna(5.68)
4.00-4.49	85	18.8%	10	22.2%	
4.50-4.99	65	14.4%	8	17.8%	
5.00-5.49	77	17.0%	11	24.4%	
5.50-5.99	44	9.7%	9	20.0%	
6.00-	24	5.3%	4	8.9%	
Total	452	100.0%	45	100.0%	
Average	4.30		4.92		

\*: number of districts

Source: Census of India

**Table 21 Age Specific Fertility Rate (ASFR), 1971, 76 81, 86, 91 and 96**

	Age-group	1971	1976	1981	1986	1991	1996
Total	15-19	166.8	118.7	124.7	123.8	124.6	89.1
	20-24	295.4	319.4	287.9	298.2	287.6	281.6
	25-29	250.3	267.2	265.8	240.0	233.5	211.5
	30-34	212.6	212.8	188.7	157.3	143.8	126.9
	35-39	154.8	160.2	114.0	100.3	76.6	64.0
	40-44	73.7	66.1	44.3	52.0	32.6	32.8
	45-49	16.5	22.1	23.0	16.4	13.2	10.6
	TFR	5.9	5.8	5.2	4.9	4.6	4.1
Rural	15-19	181.4	127.7	132.4	137.1	137.9	101.1
	20-24	301.5	331.7	304.3	313.2	300.3	301.6
	25-29	251.5	274.5	272.2	259.6	241.5	222.0
	30-34	220.9	219.3	201.1	171.0	155.2	136.6
	35-39	162.0	173.6	123.2	111.1	85.2	73.5
	40-44	79.6	71.9	48.7	60.1	36.7	38.6
	45-49	15.2	24.2	26.2	19.3	15.1	12.8
	TFR	6.1	6.1	5.5	5.4	4.9	4.4
Urban	15-19	97.4	76.9	88.8	76.0	68.0	40.9
	20-24	265.2	265.5	219.4	245.2	241.9	192.8
	25-29	242.0	232.1	239.0	201.0	203.0	165.0
	30-34	161.1	175.9	132.4	106.3	100.9	79.6
	35-39	108.9	80.6	66.0	58.9	41.6	24.1
	40-44	36.8	30.8	20.8	15.5	15.7	7.3
	45-49	27.2	9.2	5.5	2.9	4.1	0.0
	TFR	4.7	4.4	3.9	3.5	3.4	2.5

Source: SRS

**Table 22 19-4 Age Specific Marital Fertility Rate (ASMFR), 1984, 87, 90, 93 and 96**

	Age-group	1984	1987	1990	1993	1996
Total	15-19	267.4	243.8	268.8	255.7	227.5
	20-24	342.3	322.4	345.3	326.1	329.0
	25-29	273.9	250.1	250.3	223.5	221.1
	30-34	181.1	154.2	149.4	132.7	132.4
	35-39	108.3	86.2	83.7	70.6	67.5
	40-44	47.9	41.3	42.5	34.1	36.1
	45-49	24.4	17.5	15.5	10.7	12.2
	TFR	6.2	5.6	5.8	5.3	5.1
Rural	15-19	265.0	240.0	271.8	258.6	227.2
	20-24	337.2	321.9	349.5	330.3	334.3
	25-29	285.2	253.0	257.4	237.7	229.6
	30-34	193.4	163.8	160.7	144.8	142.3
	35-39	120.0	92.1	91.4	81.0	77.5
	40-44	52.5	44.7	46.9	39.2	42.4
	45-49	27.6	16.5	16.5	12.1	14.6
	TFR	6.4	5.7	6.0	5.5	5.3
Urban	15-19	284.1	273.0	240.4	230.2	231.1
	20-24	365.2	324.3	327.3	307.8	295.9
	25-29	232.9	239.3	221.3	179.6	181.0
	30-34	133.0	117.6	107.4	90.4	83.6
	35-39	64.1	64.0	51.7	37.2	25.5
	40-44	26.5	26.0	24.1	16.9	8.0
	45-49	8.7	21.9	10.8	5.2	0.0
	TFR	5.6	5.3	4.9	4.3	4.1

Source: SRS

**Table 23 Three-year Moving Average of IMR, 1971-73 to 1997-99**

		1971-73	1974-76	1979-81	1984-86	1989-91	1994-96	1997-99
(a) M.P.	Total	145	142	142	120	115	98	94
	Rural	154	150	152	128	123	104	100
	Urban	96	87	80	79	71	60	56
(b) India	Total	134	132	115	99	84	73	71
	Rural	144	142	124	108	90	79	76
	Urban	85	79	67	62	54	49	45
(c)	Total	11	10	28	21	31	25	23
= (a) - (b)	Rural	10	8	28	20	33	25	23
	Urban	10	8	13	17	17	11	11

Source: SRS

**Table 24 Three-year Moving Average of NNMR, 1971-73 to 1995-1997**

		1971-73	1974-76	1979-81	1984-86	1989-91	1994-96	1995-97
(a) M.P.	Total	74.2	78.7	81.2	70.9	69.0	63.1	64.3
	Rural	77.4	83.1	86.2	75.9	74.6	66.3	67.4
	Urban	50.6	46.9	49.5	45.7	39.3	40.8	40.7
(b) India	Total	71.7	75.1	70.3	61.9	53.3	47.6	47.1
	Rural	76.4	81.0	76.3	68.1	58.3	51.4	50.9
	Urban	45.9	45.4	40.0	36.4	31.5	29.9	27.8
(c) = (a) - (b)	Total	2.6	3.6	10.9	9.0	15.7	15.5	17.3
	Rural	1.0	2.1	10.0	7.8	16.3	14.9	16.5
	Urban	4.6	1.5	9.5	9.3	7.8	10.9	12.9

Source: SRS

**Table 25 Three-year Moving Average of PNMR, 1971-73 to 1995-97**

		1971-73	1974-76	1979-81	1984-86	1989-91	1994-96	1995-97
(a) M.P.	Total	71.1	63.3	61.2	49.4	46.2	34.9	32.5
	Rural	76.2	66.6	66.2	52.7	48.9	37.1	34.1
	Urban	44.4	40.1	29.9	33.1	31.6	18.8	18.9
(b) India	Total	62.9	56.6	44.5	37.3	30.3	25.6	25.3
	Rural	67.2	61.0	47.9	40.0	32.2	27.3	27.0
	Urban	39.4	33.9	26.6	25.9	22.1	18.5	18.3
(c) = (a) - (b)	Total	8.2	6.6	16.8	12.1	15.9	9.3	7.1
	Rural	9.0	5.6	18.3	12.6	16.7	9.8	7.1
	Urban	5.1	6.2	3.3	7.2	9.4	0.3	0.6

Source: SRS

**Table 26 Proportion of Number of Infant Death in Total Death, 1971-1999**

		1971-73	1974-76	1979-81	1984-86	1989-91	1994-96	1997-99
(a) M.P.	Total	32.9	32.6	34.0	32.5	31.7	28.5	26.8
	Rural	33.5	33.1	34.7	33.2	32.8	29.8	28.0
	Urban	29.4	27.3	27.7	27.6	25.0	18.7	17.0
(b) India	Total	30.6	30.2	30.5	27.7	25.4	22.7	21.3
	Rural	31.1	31.1	31.6	28.8	26.6	24.0	22.5
	Urban	25.8	23.4	23.0	22.0	18.9	16.6	14.6
(c) = (a) - (b)	Total	2.2	2.4	3.5	4.8	6.4	5.8	5.5
	Rural	2.4	2.0	3.1	4.4	6.2	5.9	5.5
	Urban	3.6	3.9	4.7	5.6	6.1	2.1	2.4

Source: SRS

Table 27 ASFR, ASMFR and MR, 1996-97

Age Group	Rural			Urban		
	ASFR	ASMFR	MR	ASFR	ASMFR	MR
M.P.						
15-19	100.9	243.0	42	36.2	229.7	16
20-24	297.8	329.1	91	192.6	299.2	64
25-29	223.1	230.5	97	166.5	181.9	92
30-34	136.9	142.4	96	76.7	81.0	95
35-39	72.2	76.3	95	26.9	28.5	94
40-44	36.1	39.7	91	6.7	7.3	91
45-49	9.3	10.7	87	1.0	1.1	86
TFR	4.38	5.36	82	2.53	4.14	61
India						
15-19	61.7	209.0	30	32.6	227.4	14
20-24	242.9	302.5	80	180.4	296.9	61
25-29	200.7	214.6	93	150.5	171.7	88
30-34	122.9	129.8	95	72.9	78.2	93
35-39	65.0	70.0	93	28.4	30.8	92
40-44	32.0	35.4	90	11.6	13.0	90
45-49	10.8	12.6	85	3.4	4.1	84
TFR	3.68	4.87	76	2.40	4.11	58
Kerala						
15-19	25.7	234.7	11	26.9	342.7	8
20-24	147.2	266.2	55	136.6	280.4	49
25-29	127.1	150.8	84	128.0	158.2	81
30-34	50.1	55.8	90	53.8	60.2	89
35-39	11.8	13.2	89	11.6	12.8	91
40-44	2.1	2.4	88	1.9	2.2	88
45-49	0.9	1.0	85	0.3	0.4	75
TFR	1.82	3.62	50	1.80	4.28	42
Tamil Nadu						
15-19	38.6	265.4	15	23.8	248.1	10
20-24	194.0	286.9	68	163.9	279.5	59
25-29	129.2	143.9	90	113.1	130.3	87
30-34	48.8	53.3	92	43.7	47.2	92
35-39	12.9	14.3	90	10.3	11.3	92
40-44	3.4	3.9	87	2.3	2.6	88
45-49	1.1	1.4	78	0.0	0.0	-
TFR	2.14	3.84	56	1.78	3.59	50

Source: SRS



**Table 28 Assumed Fertility Rates for M.P., 1991-2026 (Case 1)**

Age Group	1991-1996	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
15-19	0.10641	0.08711	0.07432	0.06181	0.05642	0.05143	0.04855
20-24	0.28590	0.27297	0.25773	0.24332	0.23680	0.23243	0.21943
25-29	0.22303	0.21241	0.20438	0.19701	0.18872	0.18205	0.17187
30-34	0.13558	0.12570	0.11678	0.10825	0.09812	0.08867	0.08371
35-39	0.07031	0.06285	0.05841	0.05417	0.04596	0.03798	0.03585
40-44	0.03287	0.02814	0.02572	0.02339	0.01834	0.01334	0.01259
45-49	0.01189	0.00507	0.00477	0.00448	0.00422	0.00399	0.00376
TFR	4.33	3.97	3.71	3.46	3.24	3.05	2.88

**Table 29 Assumed TFR for Sagar Division , 1991-2026 (Case 1)**

	1991-1996	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
Tikamgarh	5.49	5.04	4.71	4.39	4.11	3.87	3.65
Chhatarpur	4.88	4.48	4.19	3.91	3.66	3.44	3.25
Panna	5.00	4.58	4.28	4.00	3.74	3.52	3.32
Sagar	4.85	4.45	4.16	3.88	3.63	3.42	3.22
Damoh	4.51	4.14	3.87	3.61	3.38	3.18	3.00

**Table 30 Assumed Fertility Rates for M.P., 1991-2026 (Case 2)**

Age Group	1991-1996	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
15-19	0.10641	0.08711	0.06086	0.04743	0.03719	0.03719	0.03719
20-24	0.28590	0.27297	0.23959	0.21670	0.17787	0.17787	0.17787
25-29	0.22303	0.21241	0.19399	0.14519	0.12883	0.12883	0.12883
30-34	0.13558	0.12570	0.10659	0.06529	0.05279	0.05279	0.05279
35-39	0.07031	0.06285	0.05334	0.02332	0.01709	0.01709	0.01709
40-44	0.03287	0.02814	0.02303	0.00720	0.00482	0.00482	0.00482
45-49	0.01189	0.00507	0.00441	0.00213	0.00142	0.00142	0.00142
TFR	4.33	3.97	3.41	2.54	2.10	2.10	2.10

**Table 31 Assumed TFR for Sagar Division , 1991-2026 (Case 2)**

	1991-1996	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
Tikamgarh	5.49	5.04	4.18	2.79	2.10	2.10	2.10
Chhatarpur	4.88	4.48	3.78	2.66	2.10	2.10	2.10
Panna	5.00	4.58	3.85	2.68	2.10	2.10	2.10
Sagar	4.85	4.45	3.75	2.65	2.10	2.10	2.10
Damoh	4.51	4.14	3.53	2.58	2.10	2.10	2.10

**Table 32 Assumed Sex Ratio at Birth**

M.P.	Tikamgarh	Chhatarpur	Panna	Sagar	Damoh
108.2	111.3	110.9	107.0	111.3	112.7

**Table 33 Assumed Survivorship Ratios**

Age-group	1996-2001	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
(Male)						
0	0.89827	0.91211	0.92423	0.93480	0.94390	0.95172
0 - 4	0.95166	0.95687	0.96164	0.96597	0.96981	0.97322
5 - 9	0.98968	0.99061	0.99150	0.99232	0.99306	0.99373
10 - 14	0.99319	0.99378	0.99435	0.99487	0.99534	0.99577
15 - 19	0.99188	0.99257	0.99322	0.99385	0.99442	0.99494
20 - 24	0.99016	0.99097	0.99174	0.99248	0.99315	0.99377
25 - 29	0.98777	0.98874	0.98967	0.99057	0.99139	0.99214
30 - 34	0.98385	0.98506	0.98625	0.98738	0.98842	0.98937
35 - 39	0.97700	0.97862	0.98020	0.98173	0.98314	0.98444
40 - 44	0.96599	0.96814	0.97028	0.97238	0.97433	0.97615
45 - 49	0.94777	0.95059	0.95344	0.95630	0.95898	0.96150
50 - 54	0.92060	0.92395	0.92743	0.93101	0.93441	0.93765
55 - 59	0.87845	0.88176	0.88537	0.88924	0.89298	0.89659
60 - 64	0.81653	0.81859	0.82113	0.82410	0.82702	0.82989
65 - 69	0.73345	0.73242	0.73192	0.73195	0.73198	0.73201
70 - 74	0.63363	0.62820	0.62326	0.61880	0.61429	0.60972
75 - 79	0.53095	0.52137	0.51220	0.50342	0.49448	0.48538
80 -	0.53020	0.52551	0.52078	0.51604	0.51125	0.50642
(Female)						
0	0.88426	0.89729	0.90902	0.91953	0.92883	0.93705
0 - 4	0.94312	0.94881	0.95401	0.95876	0.96302	0.96684
5 - 9	0.98813	0.98920	0.99019	0.99112	0.99196	0.99272
10 - 14	0.99136	0.99212	0.99282	0.99348	0.99408	0.99462
15 - 19	0.98871	0.98968	0.99059	0.99144	0.99221	0.99292
20 - 24	0.98701	0.98810	0.98913	0.99010	0.99098	0.99179
25 - 29	0.98513	0.98635	0.98750	0.98858	0.98957	0.99047
30 - 34	0.98235	0.98374	0.98508	0.98634	0.98749	0.98855
35 - 39	0.97855	0.98020	0.98177	0.98326	0.98463	0.98588
40 - 44	0.97231	0.97433	0.97628	0.97814	0.97985	0.98143
45 - 49	0.95979	0.96253	0.96519	0.96778	0.97018	0.97240
50 - 54	0.93733	0.94117	0.94495	0.94864	0.95208	0.95529
55 - 59	0.90123	0.90634	0.91147	0.91657	0.92138	0.92591
60 - 64	0.84868	0.85472	0.86092	0.86724	0.87327	0.87903
65 - 69	0.77363	0.77950	0.78573	0.79229	0.79865	0.80481
70 - 74	0.66996	0.67401	0.67854	0.68354	0.68846	0.69331
75 - 79	0.55070	0.55155	0.55281	0.55452	0.55622	0.55792
80 -	0.53945	0.54059	0.54184	0.54319	0.54454	0.54588

**Table 34 Projected Population (Case 1)**

(Unit: 1,000)

	2001	2006	2011	2016	2021	2026
M.P.	81,181	89,076	97,635	106,707	115,575	123,927
Sagar division	6,636	7,432	8,286	9,176	10,095	11,041
Tikamgarh	1,203	1,357	1,524	1,703	1,896	2,099
Chhatarpur	1,475	1,664	1,874	2,097	2,328	2,569
Panna	854	954	1,061	1,173	1,289	1,408
Sagar	2,022	2,258	2,508	2,764	3,024	3,288
Damoh	1,082	1,198	1,319	1,440	1,559	1,677

**Table 35 Projected Population (Case 2)**

(Unit: 1,000)

	2001	2006	2011	2016	2021	2026
M.P.	81,181	88,133	93,783	98,680	103,777	108,594
Sagar division	6,636	7,314	7,823	8,219	8,659	9,114
Tikamgarh	1,203	1,334	1,427	1,498	1,581	1,670
Chhatarpur	1,475	1,628	1,750	1,848	1,956	2,067
Panna	854	940	1,004	1,053	1,108	1,166
Sagar	2,022	2,227	2,380	2,498	2,628	2,761
Damoh	1,082	1,184	1,261	1,322	1,386	1,450

**Table 36 Projected Annual Growth Rate of Population (Case 1)**

(Unit: %)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
M.P.	1.87	1.85	1.79	1.61	1.41
Sagar division	2.29	2.20	2.06	1.93	1.81
Tikamgarh	2.44	2.34	2.24	2.17	2.06
Chhatarpur	2.45	2.40	2.27	2.11	1.99
Panna	2.24	2.15	2.02	1.90	1.79
Sagar	2.23	2.12	1.96	1.81	1.69
Damoh	2.06	1.94	1.77	1.60	1.47

**Table 37 Projected Annual Growth Rate of Population (Case 2)**

(Unit: %)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
M.P.	1.66	1.25	1.02	1.01	0.91
Sagar division	1.97	1.35	0.99	1.05	1.03
Tikamgarh	2.09	1.35	0.97	1.09	1.10
Chhatarpur	2.00	1.45	1.10	1.14	1.12
Panna	1.94	1.32	0.96	1.03	1.02
Sagar	1.95	1.34	0.97	1.02	0.99
Damoh	1.82	1.28	0.94	0.95	0.91

**Table 38 Projected Annual Live Births (Case 1)**

(Unit: 1,000)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
M.P.	1,237	1,316	1,382	1,377	1,345
Sagar division	115	121	126	130	134
Tikamgarh	22	24	25	27	28
Chhatarpur	25	27	28	29	30
Panna	15	16	16	17	18
Sagar	35	37	37	38	39
Damoh	18	18	18	18	19

**Table 39 Projected Annual Live Births (Case 2)**

(Unit: 1,000)

	2001-2006	2006-2011	2011-2016	2016-2021	2021-2026
M.P.	1,132	994	919	956	953
Sagar division	105	95	80	75	80
Tikamgarh	20	16	13	15	16
Chhatarpur	22	19	16	17	18
Panna	14	13	11	9	10
Sagar	32	31	26	22	24
Damoh	16	16	13	12	12

**Table 40 Projected Population by Age and Sex (Case 1)**

(Unit: 1,000)

	Age	2001	2006	2011	2016	2021	2026
<b>M.P.</b>							
Total	0-14	30,141	30,708	32,391	35,064	36,809	37,517
	15-59	45,692	52,404	58,490	63,970	69,851	75,849
	60-	5,348	5,964	6,754	7,673	8,915	10,561
Male	0-14	15,455	15,887	16,946	18,413	19,326	19,692
	15-59	23,774	27,176	30,228	33,067	36,170	39,388
	60-	2,680	2,977	3,336	3,758	4,349	5,086
Female	0-14	14,687	14,821	15,445	16,651	17,483	17,824
	15-59	21,917	25,228	28,262	30,903	33,681	36,461
	60-	2,668	2,987	3,418	3,915	4,566	5,475
<b>Sagar division</b>							
Total	0-14	2,472	2,755	2,995	3,234	3,416	3,575
	15-59	3,737	4,203	4,762	5,340	5,971	6,608
	60-	427	474	529	602	709	858
Male	0-14	1,299	1,461	1,590	1,718	1,814	1,898
	15-59	1,995	2,237	2,534	2,838	3,173	3,517
	60-	222	239	264	301	353	420
Female	0-14	1,173	1,294	1,405	1,516	1,602	1,677
	15-59	1,741	1,966	2,228	2,502	2,798	3,091
	60-	205	235	265	301	356	438

**Table 41 Projected Population by Age and Sex (Case 2)**

(Unit: 1,000)

	Age	2001	2006	2011	2016	2021	2026
<b>M.P.</b>							
Total	0-14	30,141	29,765	28,538	27,036	25,903	25,873
	15-59	45,692	52,404	58,490	63,970	68,960	72,159
	60-	5,348	5,964	6,754	7,673	8,915	10,561
Male	0-14	15,455	15,393	14,926	14,200	13,601	13,580
	15-59	23,774	27,176	30,228	33,067	35,701	37,445
	60-	2,680	2,977	3,336	3,758	4,349	5,086
Female	0-14	14,687	14,372	13,612	12,836	12,302	12,293
	15-59	21,917	25,228	28,262	30,903	33,259	34,714
	60-	2,668	2,987	3,418	3,915	4,566	5,475
<b>Sagar division</b>							
Total	0-14	2,472	2,646	2,552	2,311	2,130	2,137
	15-59	3,737	4,195	4,744	5,309	5,826	6,128
	60-	427	473	527	599	703	849
Male	0-14	1,299	1,403	1,355	1,228	1,131	1,135
	15-59	1,995	2,232	2,524	2,821	3,096	3,261
	60-	222	239	262	299	350	416
Female	0-14	1,173	1,243	1,197	1,083	999	1,002
	15-59	1,741	1,962	2,220	2,488	2,730	2,867
	60-	205	235	264	299	353	433

**B: Supporting Report for Chapter 4**  
**in Main Report**

**Current Situation of**  
**Reproductive Health and Child Health**

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**PART I**

**Case Study of Community Health Workers**

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# 1 CASE STUDY OF REPRODUCTIVE AND CHILD HEALTH

## 1.1 CASE STUDY OF COMMUNITY HEALTH WORKERS

### 1.1.1 Case 1 - Mr. Dubey, a Practicing JSR

Mr. Dubey is a 32 year old married man with a wife and one-year old child. He lives in a rural village that is fairly well off, enjoying an Anganwadi centre, a primary school, many wells, and paths between houses that are covered with paving stones. However, the ANM who works in the village does not live there, and the village does not have a proper SC facility.

Mr. Dubey was trained as a JSR four years ago in his Block PHC. Prior to training he worked as an assistant to a private physician after completing ten years of formal schooling. He first heard about the JSR training on the radio, and after consulting his employer, he requested that his village sarpanch nominate him in the hope of obtaining a salaried position with the government afterwards. After completing his JSR training, he did not receive employment, a medical kit, a loan or any funding to help him start a practice, although he was told he would be advised if any assistance became available.

Nonetheless, Mr. Dubey managed to start a practice as well as farm his lands. He states that he earns his livelihood from farming, and what he receives from his medical practice only covers his expenses. In addition to his private practice, Mr. Dubey collaborates with the government whenever he is requested to participate in health activities. For the last two years he has announced pulse polio and other campaigns, administering drops when personnel were inadequate, collecting people, and registering those who come for immunization. For this he has been paid Rs 25 per day (about US 50 cents) during the last two years, and before that he was not paid for this work. At the time of the interview, he was about to participate in the Rajiv Gandhi Mission household survey for which he has been told he will receive remuneration, but not how much. He estimates he spends about two months each year in such activities.

Mr. Dubey sees four or five patients daily in the dry season and 12 to 15 in the rainy season. He primarily treats headache and fever, and during the rainy season he sees a lot of stomach problems and diarrhoea (mostly children). He does not deliver babies and provides almost no care to pregnant women, whom he always advises to see the ANM for tetanus toxoid and prenatal care if he sees them for an unrelated problem. He also writes prescriptions for iron and folic acid tablets for pregnant women and advises them on their diet. He does not dispense contraceptives since he has not been supplied by government and patients can get them free of charge from the ANM. He would, however, dispense contraceptives if they were supplied by government, and he does advise men to go for vasectomy, although he admits he would not go himself.

The principal medicines Mr. Dubey dispenses are chloroquine, paracetamol, Septrin (for cough and cold), ORS that he gets from the ANM (the Anganwadi worker and sarpanch also are depot holders for ORS), various antibiotics, and anti-vomiting medication. While he never gives injections during government health activities, he was trained to do so and often does in his private practice. He purchases his medicines from a medicine store in a nearby village (2 km. away) once a week or more often when necessary. Since he has a motor scooter, he can travel whenever he needs to. He keeps a supply of basic medicines on hand at all times for nighttime emergencies. He receives no medicines from the government. When he provides just one or two tablets, he charges only the cost of the tablets. If he

provides an injection, he charges the cost of the injection plus ten to 15 rupees more. He does not provide expensive medications or injections because he believes the community will think ill of him, not believing it is possible for medicines to cost so much.

Mr. Dubey feels he can generally manage minor problems and only occasionally refers to the Damoh district hospital, which is significantly closer to his village than the Block level PHC, which is 32 km. away. Referrals are generally for labour problems, cases of accident, paralysis or police cases. He has no working relationship with the ANM except when the government requests his assistance for community-wide activities.

Sometimes he accompanies his indigent patients to the district hospital where he assures that they receive medicines and care free of charge. There he has struck up a friendship with one of the doctors with whom he sometimes consults.

### **1.1.2 Case 2 - Ratibai, a Dai in training**

Ratibai is a married woman of the Basore caste, an untouchable caste where the women are destined to become Dais. She was married to a boy chosen by her parents when she was eight years old, and she initiated cohabitation at 16. She states after some hesitation that she is about 50 year old, but she appears to be in her early 40's (rural Indian women often do not know their age). She lives in a village about 15 km. from the Block headquarters where the Primary Health Centre (PHC) is located. Ratibai never attended school or literacy classes, so like most of her caste she is non-literate. She bore seven children, five daughters who survived, and two sons who have died. She has been sterilized.

Since Ratibai's mother died when she was young, she was left with heavy household responsibilities at an early age. Her grandmother began Ratibai's training as a Dai when she was only ten years old and continued as her teacher. Ratibai never gave a thought to what she might do other than be a Dai. She has no other options because of her caste, but she also likes being a Dai.

In Ratibai's area, Dais generally deliver the babies only of other scheduled caste (untouchable) women. In the case of a delivery by a woman of a higher caste, her work begins with cutting the cord after the baby is born. The Dai also participates in prenatal care. Ratibai states that because Dais are part of the village, they come to know who is pregnant in the course of daily life. They check the pregnant woman for gestational age and inform the ANM if there is a difficulty with the pregnancy.

Ratibai was motivated by the ANM in her village to go for training at the Block PHC, where she is currently almost half way through her month-long curriculum. Her personal motivation to be trained was she felt she might someday receive a salary from the government. During the training she has learned about the importance of cleanliness, something she had not previously given much thought to. She used to use dirty cloths because birth and blood are considered unclean. Now she knows she must use a cloth that has been washed and dried, wash her hands and arms to the elbow, and make sure the delivery room and the mother's and baby's clothes are clean. Before training she used to bathe the newborn immediately, but she has learned that this is not a good practice, so now she will just clean the baby with a cloth. She has also been taught in the PHC to turn the baby upside down if it has trouble breathing, but she has never had such an experience.

Prior to the training, Ratibai assisted in four or five deliveries each year always in the woman's

home. She registered the births and deaths with the ANM in her village. Since she can not write, she asked a family member to write the father's and mother's names and an indication of death if the baby did not survive. She also informed the police in the event of a death. *Ratibai reported the family pays here between ten and 50 rupees after each delivery, depending on their economic circumstances.*

### 1.1.3 Case 3 - Kaushyala, a trained Dai

Kaushyala is a 35-year old married woman who belongs to the Basore. She was married to her husband when she was ten years old and went to live with him at 15. She gave birth to the first of her six children when she was 16. Three of her children died in their first year of life, while three have survived. Kaushyala has never attended school or literacy training, so she is non-literate and uses her thumbprint for a signature. She received government Dai training 12 years ago. Kaushyala lives in the Block headquarters, a town with about 10,000 residents and a Primary Health Centre (PHC).

Kaushyala witnessed her first delivery when she was 15, five days after her marriage. Her mother-in-law took her to observe a delivery she was attending. She continued to accompany her mother-in-law and in this way learned her trade.

Kaushyala used to attend deliveries of women of her own caste and clean up after the women. Family members delivered women from higher castes. Now the ANM from the PHC generally conducts the deliveries in the town, with the Dai taking over to cut the cord, clean the mother and baby, and bury the placenta. She states that this is the norm in the town. If the delivery is normal, it takes place in the woman's home, but if there is any difficulty, the woman is brought to the PHC. Kaushyala assists in this way at one or two births in a year from her own caste and an annual total of ten or 12 births. After she touches a mother or baby, a *khabasa* is called to purify them and inform the village of both the birth and the purification.

Kaushyala describes her responsibilities at a birth in this way. She begins her work after the ANM delivers the baby. She first washes her hands. Then she asks an attending family member to bring boiled water in which she sterilizes the thread and gauze that will be placed on the baby's umbilical stump. She cuts the cord after applying ties so there will be no bleeding. She warms the child and wraps it in cloth. She places a pad on the mother and asks the mother to feed the child while she is present. If the mother has difficulty with breastfeeding, she helps to get milk flowing to the child or asks for cow's milk and feeds the baby with a spoon. Finally she buries the placenta.

In addition to assisting at births, Kaushyala says that she motivates women to have only two children then go for an operation. If a woman wants to space a birth, she recommends the woman go to the ANM for the "tube" (condom). She reports that she has never done an abortion, and she says women who want to terminate a pregnancy go on their own to the district hospital or private practitioners.

Kaushyala says that no one from the PHC ever visits her for the purpose of supervision. She believes this is because she is an untouchable.

**PART II**

**Case Study of Emergency Obstetric Cases**

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# 1 CASE STUDIES OF EMERGENCY OBSTETRIC CASES

## 1.1 CASE 1: AN EMERGENCY OBSTETRIC CASE OF ECLAMPSIA CONVULSION IN

### DAMOH DISTRICT

Mrs. A is a 30-year-old housewife with the obstetric history of four deliveries. Of four, two deliveries resulted in immediate deaths of female newborns in 1995 and 1997. Therefore, the number of her alive children is two, a four-year-old boy and a two-year-old girl. Mr. A, her 32-year-old husband, is a carpenter making furniture based on the customers' request and selling it. Since the sales in rainy season are significantly lower, household income is unstable and varies from Rs 500 in July to Rs 1,000 in December. They are belonging to Scheduled Caste and live in Rajpura, Hatta Block, Damoh District. Mrs. A's fifth delivery accompanied serious and continuous convulsion:

10 Dec 2000 (Su) At PM11:00, labor pain accompanying convulsion due to eclampsia started. She also vomited four times. Her husband had been taking care of her.

11 Dec 2000 (M) At AM5:00, he visited the residence of a nurse of the nearest health facility (Rajpura PHC) located within the village. Having been requested by him, the nurse made an emergency visit to his wife in his residence. The nurse judged that the PHC or herself would not manage this case as convulsion was seriously continuing. After conducting simple pulse check on Mrs. A, the nurse verbally advised that this case be referred to Hatta CHC and left their residence. However, no specific instructions on caring Mrs. A during transport was provided by the nurse.

AM8:00, the husband left his residence for Gubra, where the wife's mother lives, after requesting neighbor relatives to look after her and to take her to Hatta CHC.

At AM9:00, Mrs. A was taken into the first public bus of the day bound for Hatta with nine relative attendants. At AM11:00, the wife and her attendants arrived at Hatta CHC. Immediately on the arrival, obstetric specialist started treatment and care to Mrs A. Around noon healthy male baby was born. However, the wife's convulsion did not stop. Probably because the drugs against convulsion were not available at the CHC, the gynecologist advised the relatives further to refer this case to the Damoh District Hospital without issuing a referral slip/note. Since the ambulance was not available for some reasons, eight relatives took her again into the public bus at PM1:45. One of the relatives was responsible for taking the newborn back to Rajpura. When the husband and his mother in law arrived at Hatta CHC, Mrs. A and the relatives had already left there.

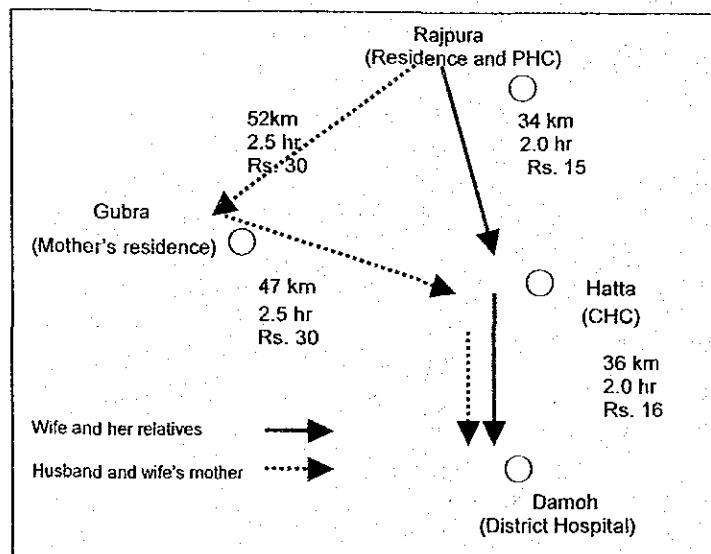
At PM3:45 the wife arrived at Damoh District Hospital being accompanied by eight relatives. Until that time, the convulsion continued



and she had been unconscious. As soon as she was delivered to the hospital, intensive treatment was provided; e.g. several transfusions and injections. When her husband and her mother arrived at Damoh District Hospital via Hatta CHC at PM6:00, Mrs. A was still required to be in an absolute rest.

- 12 Dec 2000 (Tu) Convulsion was completely disappeared. She gradually recovered from serious situation. She also recovered her consciousness.
- 13 Dec 2000 (W) She started taking liquid diet such as milk and smashed bread three times a day.
- 14 Dec 2000 (Th) Being assisted by her mother and husband, she managed to go to toilet by foot.
- 15 Dec 2000 (F) She could talk to her mother, husband, and doctor in charge.
- 16 Dec 2000 (Sa) She was discharged from the Damoh District Hospital.

To cover the costs for transport means of referral including relatives, medical treatment, and drugs. (See the right figure that shows distance, time, and cost of public transport for one-way travel.) Mr. A borrowed Rs 1,000 from local loan provider with interest of 5% per month. He was very relieved and pleased that his wife has recovered and discharged. However, he additionally commented that financial burden due to high interest loan is heavy pressure. He thinks, if PHC had had available transfusion drugs against convulsion, his wife would have recovered sooner with less financial and opportunity cost. Six days of not having worked for carpentry in December (high season) cause economic loss. He does not know what to do to repay the loan.



## 1.2 CASE 2: AN EMERGENCY OBSTETRIC CASE OF CONTINUOUS AMNIONITIS IN TIKAMGARH DISTRICT

Mrs. B is a 26-year-old housewife who had one delivery in the past prior to this episode. When she successfully gave the first delivery, a healthy male was born. He is presently 2.5 years old. Mr. B, her 30-year-old husband, is a passenger bus conductor of the private transport company with fixed monthly salary of Rs. 800. The household belongs to Other Backward Classes (OBCs). Mrs. B's mother in law earns Rs. 600 per month making *Bidi* (local tobacco) and her brother in law earns Rs. 800 per month as a laborer such as construction work, loading, farming etc. Both of them contribute their salary fully to the household income. The total monthly household income, therefore, is Rs. 2,200 on the average and could be categorized into comparably higher one amongst the rural poor such as OBCs.

17 Dec 2000 (Su) At PM10:00, all the household members fell asleep as usual.

18 Dec 2000 (M) At AM3:00, Mrs. B got awake having noticed that amniotic fluid started leaking gradually and continuously and had pain. Immediately, she informed her mother in law of her situation and requested her to help. Then, all the family members knew the conditions of Mrs. B.

At AM3:30, her husband took her to Khargapur PHC, the nearest health facility, by his motorbike though it is located only 200m away from their residence because she could not walk properly.

When they arrived at Khargapur PHC around AM3:35, one nurse on duty was there. Mrs. B soon became unconscious. Having set up transfusion and given an injection to her carefully and quickly despite mid-night treatment, the nurse was kind and looked very professional. Though the amount of leaked amniotic fluid was reduced, it did neither stop nor induce the delivery. At AM10:30 a male general medical officer arrived at the PHC as usual. After checking her pulse, blood pressure, heat beat approximately, etc. for 15 minutes, he advised her husband to take her further to the Tikamgarh District Hospital, which is 40km away from Khargapur. A referral slip/note was not issued. The husband immediately started arranging a vehicle. However, it took more than four hours to arrange it. At PM3:00, having been supported by her husband, Mrs. B semiconsciously walked into the jeep which he rented from a friend of his. During the transport, the quantity of leaking amniotic fluid increased.

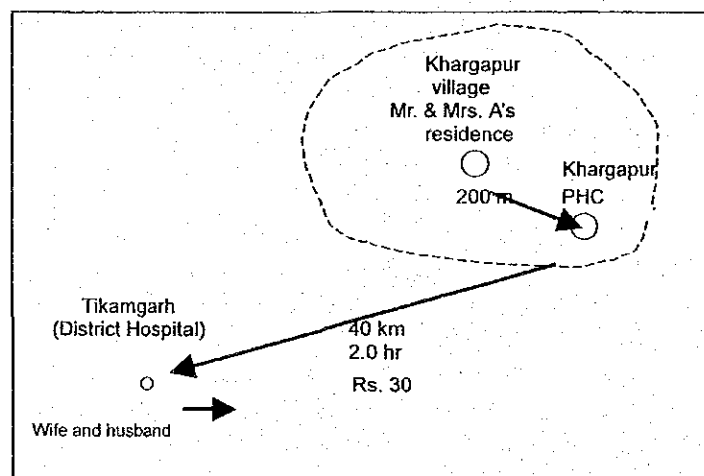
At PM4:45, the vehicle arrived at the District Hospital. Using a stretcher, she was taken immediately into the labor room. She had been still unconscious or semiconscious and amniotic fluid was continuously leaking. A gynecologist gave her an intensive treatment. At PM5:00, she was transferred to one bed in the maternity ward and equipped with transfusion. Again, the quantity of amniotic fluid was reduced. From that time to PM10:20, she had severe pain in bottom stomach though she was semiconscious. At PM10:20, detecting that her face looked so pail,

her mother in law requested the gynecologist to provide treatment. Then, Mrs. B was moved into the labor room again. At 10:45, a healthy female was born and her weight was 2,500g. Amnionitis was over. As a result, it continued approximately for seven hours. At 11:00, her newborn and she were transferred to the bed in the maternity ward. Transfusion was again set up for her. At 11:15, Mrs. B gradually started recovering her consciousness and knew the delivery was completed. She could not sleep well at that night.

19 Dec 2000 (Tu) At AM10:00, she ate some biscuit and drunk a cup of hot milk and tea.

At PM1:00 she was discharged based on the permission from doctor. The gynecologist, however, reluctantly gave the permission because her mother in law requested her to do so though Mr. B should have been admitted, from clinical viewpoint, until the following day (20 December).

Mr. B could fortunately rent a vehicle from a friend of his and was allowed to repay the cost for it anytime he had money saved. Therefore, this case could be one of the fortunate ones and reminds us of how important it is to build and maintain good relationships with neighbour residents on daily basis. The hospital has the policy that a doctor, in principle, permits an inpatient to be discharged once an inpatient or her family requests whether she needs to be admitted for another day. The justification for it is to save the patient's and her family members' opportunity cost and to lighten their financial burden during admission on household income.



**PART III**  
**Study of Tribal Women**  
**and Child Health Care in Damoh District**

**STUDY OF TRIBAL WOMEN & CHILD HEALTH CARE  
IN  
DAMOH DISTRICT**

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## 1 GENERAL BACKGROUND

Indians are the saddest on the earth because they are divided into several sects like Varna (Mythological Strata), Caste (Socio-Economic Strata) sex, colour and class (Economic Strata). There are various other stratum in the Indian society, which are a resultant of modernization & westernisation. Stratification of the Indian society is related with the deprivation of same group. Dr. Ram Manohar Lohia, an eminent socio-political thinker considered the wife of the sweeper as the representative of the most deprived sect or group of the Indian society.

After the independence on 15<sup>th</sup> Aug 1947, the Indian constitution was framed. Which was completely based on Gandhian principles of welfare state. The deprived class which included untouchables. Tribal and the lower castes were to be accorded their due status and facilities. The aim of the India's constitution was to secure to the tribal people along with all the people of India, a social order based upon justice in all fields of life, liberty of person and property, equality of status & opportunity and a fraternity assuring the dignity of the individual of the unity of the nation.

The word "tribe" is nowhere defined in the Constitution of India. But Article 342, the Scheduled Tribes – " are the tribes or the tribal communities or parts of or groups within tribes or tribal communities which the president may specify by public notification.

The tribal population groups of India from the oldest ethnological sector of the population, the term "Adivasi" has become fairly popular (Adi-original & 'Vasi' inhabitant). Their present constitutional name is "ANUSUCHIT JANJATI. " India is a multilingual, multicultural, multiracial and multi-religious country with a population of 838,583,988 (1991 census) out of which 622,812,376 live in rural areas 215,771,612 in the urban areas. There are more than 400 groups in Indian society, which are officially designated as scheduled tribe. These tribal groups inhabit widely varying ecological & geo-climatic conditions in different concentration throughout the country and have distinct cultural & socio-economic background. Tribal groups are homogeneous, culturally firm, have developed strong magico-religious health care system and they wish to survive & live in their own style.

In terms of their absolute number the largest tribal population is found in M.P. (15399,034). The 1991 Indian census enumerated nearly 68 million Scheduled tribe excluding Jammu & Kashmir. 15 Million Scheduled Tribe population was enumerated in M.P. in the 1991 census which is about 25% of the total state.

## 2 OBJECTIVES OF THE STUDY

The tribals are the oldest settlers if not the first settlers in India. The main objective of our study is their advancement & integration. It is a special characteristic of Indian society that it has always aimed at advancement without disturbing essential harmony of society & at integration without imposition. The problem of problem is not to disturb the harmony of tribal life but simultaneously to work for its advancement; not to impose anything on the tribes but simultaneously to work for their integration as members & part of the Indian family.

The tribal problem cannot be studied in isolation and the attitudes of the non-tribal towards the tribes should also be examined. Thus, we find that the tribal & the non-tribal problem are both part of the same phenomenon.

We stand at the threshold of a new era. The tribal people are prepared to make an entry into that era with other members of the family the only thing that they expect is that the change should not destroy the harmony of their life & the contacts should not result in suppressing their distinctive personality.

Health in its broad sense is quality of life rather than only the absence of disease, it is a universal goal even if cultural variation entrusts in the way it is defined & achieved. The health & nutritional problems of the vast tribal population of India are as varied as the tribal groups themselves.

The health status of the tribal population was different from the main stream of social development of the Indian society.

The present study relates to discover the facts, which indicate whether the governmental facilities have been able to reach the tribal people. Primarily our study aims to focus the attention of the policy makers of the health sector with special emphasis on Mother & Child welfare. The study will gain an in-depth knowledge of both the tribal population & their non-tribal neighbors particularly the other disadvantaged groups, to gain sufficient information into differences & explanation for the differences.

The specific objectives of this study are to explore:

- 1) Knowledge, perceptions, attitudes, and behaviors related to:  
Family planning for spacing or limiting pregnancies, to specific methods (surgical contraception, IUD, pill, condom)?  
Abortion, pregnancy, childbirth, post-partum cares for the woman, breast-feeding, and care of the newborn?
- 2) The cultural factors affecting utilization of existing health care services. Are there traditional beliefs and practices related to reproductive health that proscribe care for a woman at certain critical moments in her life? Can a woman freely make and implement decisions about seeking health care for herself? What beliefs are there among tribal peoples about health and illness? What is the source of illness? On the other hand, what cultural factors favor a woman's ability to obtain needed health care for herself and her child?



- 3) The factors related to the health care infrastructure that affect utilization of health care services by tribal and other disadvantaged groups. What in the health care system prevents women and children from receiving adequate care? What factors in the health care system favor a woman's ability or motivation to obtain needed health care for herself and her child? Where do they go now for different health services?
- 4) Factors related to the village structure and village cultures that affect utilization of health care and social services. Are there discriminatory practices in the village that limit the access of tribal people to education, health care, participation in the labor force, literacy training, or other development activities? Can and do the tribal people participate fully in the life of the village? Is there any factor(s) that limit their participation in comparison with other disadvantaged non-tribal people in the village?
- 5) Possible strategies for delivering health care in a manner acceptable to tribal people such that they would be more able and willing to seek health care. What do tribal people say about how they want to receive health care? What have providers found to be effective ways to deliver health care?

### 3 RESEARCH METHODOLOGY

The rural areas are less densely settled and the population of a rural community is usually more homogeneous, less mobile, and not so highly stratified. In general social interaction in rural areas is more intimate; social control is largely persuasive; behavior is more closely regulated by the mores & the folkways; & status tends to be assigned in relation to the whole personality rather on the basis of segmented roles not all rural communities of course, possess these traits or hold them in the same degree, but wherever these characteristics do prevail, social research is affected. Rural society poses problems for the investigator but at the same time it may simplify some of his tasks & enhance its opportunities.

There is paucity of demographic studies in the primitive tribes of Madhya Pradesh. It is a pity to note that almost two decades have been elapsed but still we are not aware of the reason as to why the tribal population suffers disproportionate inattention to their health needs. It is in this context attempt has been made in the present study undertaken at the **DAMOH** District, which constitutes the universe.

Damoh district lies between 23°9' and 24°27' North latitude and between 79°3' and 79°57' East longitude in the northern part of Jabalpur division. The Tropic of Cancer passes through southern part of the Damoh district. It is bounded by the district of Chattarpur in the north and north west, Sagar in the west, Narsimhapur and Jabalpur and Panna in the east. The whole district lies on the Malwa-Bundelkhand plateau. The area of the district is 7322 square km (2827 miles), which is about 1.7% or one-sixtieth of the state of (M.P.). By tradition the town is named after Damayanti, the queen of king Nala of Narwar, a personage known only to folklore.

Two tribes were contacted in the 4 villages. One was Kol, which was in majority in Sagra. There were about 40 households of Kol tribe in the village. The other tribe was Raj Gond. Raj Gonds are said to be the descendents of alliances between Rajput adventurers and Gonds. But the term practically comprises of the land holding subdivision of the Gond tribe.

The study involved a research team of two females and two males who initiated entry into a village by introducing themselves to the village leadership to gain their permission & support for the study. This was followed by an ice-breaking exercise and later by interviews – individual and group. The males of the team generally interviewed men of the village & the females of the team interviewed the women of the village.

The field investigator employed qualitative methodologies principally use of secondary data, structured interviews & group interviews. Qualitative methodologies were considered more appropriate as the fundamental characteristic of qualitative research is that seeks to understand values, beliefs action norms etc. Through the eyes of those who are being studied the major tool & used for collection of data employed by the investigator was as Interview Schedule through which primary information was gathered.

In order to collect valuable information relating to cultural factors affecting utilization of the existing health care services, group discussion was done and recorded with help of tape recorders.

The problems of the villagers regarding the accessibility of educational institution, transportation, market etc. was asked and a detailed analysis was undertaken with the aid of SOCIOGRAM.

Social mapping of all the four villages was a result of joint effort of the villagers and the field investigators.