

# Improving Maternal and Child Health in India: Evaluating Demand and Supply Side Strategies

## Impact Evaluation of Chiranjeevi Yojana in Gujarat

### Survey Design and Field Implementation Note

IMATCHINE (Improving Maternal and Child Health in India: Evaluating Demand and Supply Side Strategies) seeks to evaluate voucher program which was launched by the Government of Gujarat with the primary objective to increase rates of institutional deliveries among Below Poverty Line (BPL) households. The voucher program was launched under the local name “Chiranjeevi Yojana” (CY).

### SURVEY DESIGN

#### **Sampling Design and Implementation**

Gujarat is made up of 26<sup>1</sup> administrative districts. The evaluation exercise was carried out in all 25 districts. The scheme was launched on a pilot basis in 5 backward districts in the year 2005 and by the year 2008, it was universally operationalized.

The sampling followed a three-stage cluster design. All districts of the state were surveyed. First, blocks (or *talukas*) were sampled out from the respective districts in proportion to total number of blocks from each district<sup>2</sup>. Second, villages (or PSUs) were sampled out from elected blocks. For selection of sampling universe of blocks and villages, government census data of 2001 was used.

Within each village/PSU, a brief census of all households was conducted to determine 1) households that had deliveries in the past five years and 2) households that fall within the five (5) BPL index points on either side of the threshold. In Gujarat, the cut-off BPL score is 20. These households gave us the sampling universe from which 6000 households were drawn from 600 villages from 75 blocks, i.e. 33% of the state which assumes 27% of Gujarat population is BPL.

Block/Taluka selection: From each district, total number of blocks were selected through proportionate sampling. To ascertain the number of blocks per district, first, the proportion of district population in the cumulative state population was determined. Second, the resultant figure was multiplied by total sample of

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<sup>1</sup> Tapi is the latest district that was carved out of Surat district. In the evaluation exercise, Tapi has not been considered as separate district as Census 2001 doesn't have its separate data.

<sup>2</sup> During proposal stage, it was envisaged to stratify blocks based on rural/urban classification. Though in case of classification, only ICDS employs the rural/urban/tribal classification to segregates ICDS block based on some population estimates of target beneficiaries, but these blocks (as defined by ICDS as ICDS blocks) are different from development blocks (which census defines) in terms of geography. Hence it was not feasible to use that classification for sampling at village level as our sampling is based on census district and sub district data. Census classifies sub district unit (it can be block/tehsil/taluka depending on the state) as rural or rural+urban i.e. there are block which are entirely rural and there are blocks which have both rural and urban population. Thus the classification even by census is not entirely rural or urban (census doesn't mention about tribal population at block level thus making it difficult to classify blocks as urban/rural/tribal based on census 2001 list). Further as the survey had to be done in villages (even in case a block has both urban and rural population we are not going to block HQ/town but in villages) hence instead of doing classification by urban/rural which is not feasible based on the census list, proportionate number of blocks were selected from each district and within district blocks were selected randomly from list of blocks.

blocks (75). The final output was rounded-off to yield the number of sampled block(s) per district. Subsequently, the designated number of blocks from each district was randomly selected.

<b>District</b>	<b>Population (D)</b>	<b>(D/P)*B</b>	<b>No. of Blocks/<i>Talukas</i> selected in each district</b>
The Dangs	186729	0.276384	1
Narmada	514404	0.761388	1
Porbandar	536835	0.794589	1
Patan	1182709	1.75057	2
Navsari	1229463	1.819773	2
Gandhinagar	1334455	1.975175	2
Bharuch	1370656	2.028757	2
Amreli	1393918	2.063188	2
Valsad	1410553	2.08781	2
Surendranagar	1515148	2.242625	2
Kachchh	1583225	2.343388	2
Dohad	1636433	2.422144	2
Mahesana	1837892	2.72033	3
Anand	1856872	2.748423	3
Jamnagar	1904278	2.818591	3
Kheda	2024216	2.996115	3
Panch Mahals	2025277	2.997686	3
Sabar Kantha	2082531	3.082429	3
Junagadh	2448173	3.623629	4
Bhavnagar	2469630	3.655388	3
Banas Kantha	2504244	3.706622	4
Rajkot	3169881	4.691855	5
Vadodara	3641802	5.390363	5
Surat	4995174	7.393537	7
Ahmedabad	5816519	8.60924	8
<b>Cumulative Population</b>	<b>50671017</b>		
<b>Cumulative No. of Blocks</b>			<b>75</b>

Village/PSU selection: From each block/taluka, 8 villages were selected using PPS (probability proportional to size) sampling to account for variability in population of villages within blocks. For example, in each block, the selection interval was calculated by dividing cumulative village population by total number of sampled villages per block (i.e. 8). Then, first village was selected randomly and subsequent villages were selected by adding selection interval to selected villages.

Household selection: In each selected village, 10 households/respondents were selected on the basis of:  
1) Household having a woman who had a delivery in the past five years; and  
2) Household whose BPL score was in the range of 16 and 25 points.

The respondents were selected through stratified random sampling. The two strata from each village included the treatment group (16-20 score) and control group (21-25 score). The samples were in proportion to the number of households living in the village.

### **Results of the Sample Implementation and Non Response Rate**

A total 6002 households were visited under the survey. Out of which, 5663 household interviews were successfully interviewed i.e. 94.4%. Another 3.8% (230 households) had no member or competent member at the time when investigators visited the household. In 1.5% case, entire household was absent for an extended period of time. 17 blocks (23%) reported to have 100% successful interviews (Household Response Rate).