India Policy Insights

Technical Report
District, Parliamentary Constituency, Assembly Constituency, and Village

Updated May 14, 2024

List of abbreviations

AC	Assembly Constituencies
ADP	Aspirational Districts Programme
BM	Bharatmaps
CEB	Census Enumeration Blocks
DHS	Demographic Health Survey
GIS	Geographic Information System
GOI	Government of India
GPS	Global Positioning System
HNP	Health Nutrition and Population
ICDS	Integrated Child Development Services
IGLS	Iterated Generalized Least Square
IIPS	International Institute for Population Sciences
IPI	India Policy Insights
IQR	Interquartile Range
MCMC	Monte Carlo Markov Chain
MDDS	Meta Data and Data Standards
NFHS	National Family Health Survey
NITI	National Institution for Transforming India
PC	Parliamentary Constituencies
PCA	Primary Census Abstract
PLCN	Permanent Location Code Number
PSU	Primary Sampling Units
SDG	Sustainable Development Goals
SRS	Sample Registration System

1. Introduction

1.1 Overview of India Policy Insights

India Policy Insights (IPI) is a collaborative initiative of the Geographic Insights Lab at the Harvard Centre for Population and Development Studies and the Centre for Geographic Analysis at Harvard; NITI Aayog; and the International Institute for Population Sciences (IIPS). The initiative is being led by S V Subramanian, PhD, Professor of Population Health and Geography, Harvard University, and Honorary Senior Fellow, NITI Aayog.

The purpose

- Empower elected officials (national and State) to constructively engage with their constituents on local health and well-being concerns.
- Enhance District administrators' decision-making process for prioritizing Villages under their jurisdiction for implementing national policies.
- Encourage the public to pursue informed policy dialogue, monitor progress, and advocate for targeted interventions in their communities.

The challenge

Policy administrators in India confront complex issues around population health and development and are continually looking for ways to address them. While the relevant data is available, until now there has not existed a user-friendly resource that can synthesise, analyse, and visualise critical indicators in a geographically granular and policy-relevant way.

A solution

IPI provides a comprehensive data platform that uses novel statistical techniques to measure and geo-visually present the performance of policy-relevant population health and development indicators at multiple geographic levels.

Mission

Our mission is to empower elected officials (national and State) to constructively engage with their constituents on individual and local health and well-being concerns. IPI resources are fully and openly accessible to the public for their use.

IPI features include:

Interactive Dashboards to explore distribution of policy indicators at desired geographic levels, deep dive into specific areas, compare areas and indicators, and download summary reports.

- Policy Metrics related to population health and well-being indicators sourced from national programs NITI Aayog's Aspirational Districts program, and India-specific Sustainable Development Goals (SDGs)
- Geographic visualisations and analytics for the following distinct policy levels and target users:
    - 720 Districts - Administrators/policy makers (707 districts as of March 31, 2017, with updated Andhra Pradesh districts after the 2022 reorganization)
    - 543 Parliamentary Constituencies and 4,119 Assembly Constituencies - Elected representatives/Prime Ministers' Office and Chief Ministers' Office
    - 597,607 Villages - Local administrative and elected officials
- Policy Resources at https://indiapolicyinsights.org.in provide an ever-expanding, sortable repository of journal articles, interactive dashboards, policy briefs, and other resources with up-to-date analysis and insights from IPI's latest research.

Primary functions of the IPI Data Explorer platform

Atlas

Using National Family Health Survey data (NFHS-4 and 5), the Data Explorer Atlas allows users to visualize 2021 and 5-year net change (2016-2021) indicator performance data on an All-India map for one or multiple Districts, PCs, ACs, and District level maps for Villages, as well as filter map by color-coded performance deciles for prevalence or headcount values. Further, there is the option to select the indicators by aspirational Districts.

Ranking

Provides sortable high to low-performance rankings for a single indicator across multiple PCs and Districts in a numeric table and interactive map. Users can filter rankings by 2021 prevalence or headcount values, as well as by net change over 5 years (2016-2021)

Deep Dive

Compares 2021 performance metrics across multiple indicators for a single PC, District, AC, or Village using graph visualizations. All-India and State values are also provided for reference.

Compare

Compares multiple indicator performances across 2, 3, or 4 selected PCs, Districts, ACs, or Villages using numeric tables and graph visualizations. All-India and State values are also provided. Users can also view and compare net change over 5 years (2016-2021).

Create Report

Generates a downloadable pdf report for a user-selected PC, District, AC, or Village that provides 2021 and net change (2016-2021) performance data for 122 population health indicators, as well as a ranking of the top 10 best and worst performing indicators for that selection. A table at the end of the report provides estimates for all indicators for the selected geometry. State and national values are also included for comparison.

Visit Indiapolicyinsights.org.in to learn more about the scientific research underpinning the IPI Data Explorer, as well as additional IPI resources, publications, project updates, and media stories.

1.2 Document and dashboard

This document elaborates on the rationale, analytical decisions, and methodological approach to compute the estimates on a total of 122 Health, Nutrition, and Population (HNP) indicators for four geographies (Districts, Parliamentary Constituencies, Assembly Constituencies, and Villages) in India. The document sections are structured as follows.

1. The first section discusses and provides an overview of the various data sources utilized for the estimation of indicators.
2. The second section provides an overview of key data sources that serve as essential pillars for a wide range of research and analysis for the IPI dashboard. These sources encompass the National Family Health Survey (NFHS), Geographic Information System (GIS) data in the form of Bharatmaps (BM) Shapefiles, Census Projections, Election Commission of India data, and Census Village data, offering valuable insights for diverse fields of study and decision-making.
3. In this section, we have discussed in detail the process towards the selection of indicators. More specifically, we explain the basis on which the selection of indicators

was done, along with the rationale behind the inclusion and exclusion of some indicators. In discussing the final list of indicators, we also shed light on how the indicators are related to several Government policies and programmes.

4. The fourth section describes the rationale and decisions for the selection of geographies for which the estimations are done.
5. The fifth section delves into the elaboration of methodological aspects of estimations. It includes a stepwise description of the process required to arrive at precision-weighted cluster estimates (model specifications, interpretation of the model, and software specifications). It further explains the methodology used to update the District, PC, and AC geographic boundaries, further followed by a detailed explanation for arriving at final estimates at the District, PC and AC levels. Finally, a sub-section is included on the methodology used to estimate indicator-specific absolute headcount for all geographies.
6. The final section discusses and exemplifies the estimates presented for all the geographies. Specifically, it includes a description and interpretation of the prevalence estimates for 2016 and 2021 along with their respective ranks and decile position across Districts, PCs, and ACs. It also describes the change in prevalence between 2021 and 2016 along with their respective categories for direction and magnitude of change. It also focuses on interpreting the headcount estimates for all HNP indicators for 2021 along with respective ranks and decile positions. A brief summary of the mapping convention is also included to reflect on geographical distribution across administrative units (Districts, PCs, and ACs). Finally, it also outlines and highlights the focus on the 117 Aspirational Districts identified by the Government of India.

All the references and links to the Appendix files including the STATA codes, indicator distributions by District, PC, and AC, geography aggregation by States, policies related to indicators and list of Aspirational districts are placed at the end of the document.

1.3 Exploring data: A guide through the IPI Data Explorer dashboard

A. Atlas: Visualizing indicator performance data

1. On the Data Explorer dashboard, click on the Atlas tab (also the default view).
2. Select **Hardoi** as your District.
3. Choose an indicator, e.g., **Health Insurance** (under the **Health Care** category).

4. Click on the Prevalence and Headcount options for both 2021 and 5-year net change (2016-2021).
5. The map will display color-coded performance data for the selected indicator for Hardoi. You can also filter the map by performance deciles for Prevalence or Headcount values.

B. Ranking: Sorting high to low performance rankings

1. On the Data Explorer dashboard, click on the Rankings tab.
2. Select **Hardoi** as your District.
3. Choose an indicator, e.g., **Health Insurance**.
4. You will see a sortable table and an interactive map that ranks performance across Districts for the selected indicator. Filter the rankings by 2021 Prevalence or Headcount values or by net change over the 5-year period (2016-2021).

C. Deep Dive: Metrics across multiple indicators

1. On the Data Explorer dashboard, click on the Deep Dive tab.
2. Select **Hardoi** as your District on the dashboard.
3. You will see the interactive map and the estimates comparing the 2021 performance and 5-year net change metrics for all indicators for Hardoi. All-India and State values will also be provided for reference.
4. Select two or more indicators to display customized results.

D. Compare: Comparing multiple indicator performances across regions

1. On the Data Explorer dashboard, click on the Compare tab.
2. Select **Hardoi** and, for example, two other regions like **Kanpur** and **Lucknow** on the dashboard.
3. Choose two or more indicators, e.g., **Population Below Poverty Level** and **Electricity**.
4. Click apply and numeric tables will display that allow you to compare the selected indicators' performances across Hardoi, Kanpur, and Lucknow. Net change over the 5-year period can also be viewed and compared.

E. Report: Generating a PDF report

1. On the Data Explorer dashboard, click on the Create report tab.
2. Select **Hardoi** as your region on the dashboard and apply.
3. Click on the Download PDF option. The system will generate a downloadable PDF report for Hardoi, including 2021 and net change (2016-2021) performance data.

2. Data sources

2.1 National Family Health Survey (NFHS)

The Health, Nutrition, and Population (HNP) indicator estimates were derived from the National Family Health Survey (equivalent to DHS), a nationally representative dataset from India. We utilized publicly available, anonymized data from two cross-sectional waves of India's National Family Health Survey, covering a timeframe from 2015-16 to 2019-21.[1-5] The survey design of NFHS (4th and 5th wave) allows for direct computation of indicators at the smaller geographical unit (i.e., District- and cluster-level) (IIPS & ICF 2017; IIPS & ICF 2021). We use data from NFHS-4 (2015-2016) and NFHS-5 (2019-2021) as these are the most recent datasets, making them the most relevant from a policy perspective at the local level.

The NFHS is part of the Demographic and Health Surveys (DHS) Program, initiated in 1992-93 to provide estimates of important indicators on population, health, and nutrition for India. The DHS programme has conducted more than 400 surveys in over 90 countries. The NFHS surveys are conducted to provide essential data on health and family welfare and key emerging issues. Over time, the NFHS has expanded its scope of indicator coverage on several development themes, including gender-based issues such as women's autonomy and experience of domestic violence, health services quality, sexually transmitted infections, and HIV/AIDS. Further, recent surveys also cover information related to marital and sexual relationships, living arrangements, non-communicable diseases, and behavioral risk factors.

All five waves of the NFHS surveys covered geographic areas comprising more than 99% of India's population. The NFHS surveys used a multistage design with stratified sampling for specific groups of interest, including scheduled castes and tribes, and women with low levels of literacy. According to the Demographic Health Survey, the clusters, which are Villages (for rural areas) and Census Enumeration Blocks (CEBs) (for urban areas), serve as primary sampling units (PSU). In rural areas, a representative sample of households is methodically constructed through a stratified, probabilistic two-stage sampling process in all survey rounds. The first stage involves stratification of Primary Sampling Units (PSUs), typically corresponding to Villages, based on key variables of interest. These PSUs are then selected using probability proportional to their size, with subsequent household enumeration conducted within them. In cases of exceptionally large PSUs, segmentation is employed, and enumeration is carried out within these segments. PSUs with more than 300 households are divided into 100

to 150 household segments. Hence one cluster can be either a PSU or a segment of a PSU. The second stage focuses on household selection from the lists within the PSUs using systematic sampling with equal probability. The sampling approach was refined over survey rounds to achieve an increasingly fine geographic representation. For the first time, NFHS-4 (2015-16) was designed to provide estimates for all 29 States, 7 Union Territories, and 640 Districts, as well as the slum populations of 8 major cities. This sampling approach was continued for NFHS 5 (2019-21). Overall, 601,509 households were sampled in NFHS-4 and 636,699 in NFHS-5. Although geographic coverage is substantial, some areas were excluded from the surveys, including conflict-affected, remote, or small, low-density settings. The NFHS surveys divide populations by urban and rural areas of residence and use the most recently available national Census data to define the sampling frame. It should be noted that the NFHS-4 survey used Districts as defined in the Census of India, 2011 and does not represent the new Districts created after that date.

2.2 Bharatmaps (BM) shapefiles

We received access to shapefiles from Bharatmaps via an API token made specifically for India Policy Insights. Using the API token, we downloaded and used the PC, AC, and Village shapefiles from BM as the starting source before any adjustments were made.

2.3 Census projections

We used population projections for 2011-2036 provided by the Census of India to compute indicator-specific headcounts for the year 2021.[6] The Office of the Registrar General and Census Commissioner of India provided population projections since 1958, based on the preceding Census round. The population estimates for the period 2011-2036 were calculated using the cohort component method, a widely accepted approach that considers fertility, mortality, and migration rates. These projections are based on data from the Census 2011 and Sample Registration System (SRS). SRS provides time series data on fertility and mortality, which has been used for predicting their future levels.

2.4 Election Commission of India

The Election Commission of India is tasked with the responsibility of delineating and defining PCs and ACs across the entire nation. This process of delimitation primarily relies on data from the 2001 and 2011 Census of India. By leveraging data provided by the Election Commission of India, we were able to correctly allocate ACs and PCs.

2.5 Census Village data

We drew upon data from the Census of India, 2011 to generate estimates for 122 HNP indicators at the Village level. Additionally, we used the PCA Census 2011 file to acquire a comprehensive understanding of the hierarchical framework of each District, encompassing sub-Districts and the composition of sub-Districts in terms of Villages.

For the State of Andhra Pradesh, connecting with Villages for the year 2011 was facilitated through the utilization of the Rural PLCN 2001 to MDDS 2011 file, which was provided by the Census of India. Further, the aggregation of geographical data at various levels, including Districts, Parliamentary Constituencies, and Assembly Constituencies, was entirely reliant on data sourced from the Census of India.

3. Selection of indicators

3.1 Rationale and analytic decisions

The selection of indicators for IPI was guided by their global and national policy relevance. Specifically, we have focused primarily on indicators that are widely used in the HNP policy spectrum for program designing, targeting, monitoring, and evaluation. Envisaging such policy utility, we have based our selection of indicators on District-level NFHS factsheets (IIPS and Macro 2016), India-specific Sustainable Development Goals (SDGs), and Government of India (GOI) programs on HNP. After a thorough selection and pruning process, we landed on a total of 122 HNP indicators for NFHS 2019-21 and 114 indicators for NFHS 2015-16.

The following were some important considerations for the selection of indicators:

- The indicators were classified under seven broad categories on the basis of policy homogeneity. The categories are socio-economic profile, health care, maternal health and family planning, morbidity & mortality, nutrition (clinical/anthropometry), nutrition (diet), and social infrastructure.
- Our selection was primarily based on the NFHS District Factsheet, India (IIPS, 2021). Further additions to the list were made based on the Government of India (GOI) programs on HNP (Appendix 5).
- We have excluded variables from the NFHS Factsheet involving variants, grades, segments, and composition. These variants include type of facility (public/private) and place of residence (rural/urban). For example, the share of public and private hospitals in total institutional childbirths, healthcare utilization by public and private hospitals, percentage of marginal workers in rural and urban areas. For these indicators, we provided aggregate estimates rather than segmentation for two primary reasons. First, the policy rationale for the segregating of an indicator is mainly to identify the share of each variant in the total estimate—for example, the percentage of public and private hospitals in total institutional childbirths. As IPI's primary focus is to provide prevalence estimates, presenting distributional estimates along with the majority of the prevalence data across Districts might be cumbersome for users. Secondly, based on a desk review of policy documents, it was hard to justify the selection of a few indicators that required precise segmentation.
- We also excluded indicators with no specific normative direction reflecting overtime worsening or improvisation. For example, there is no ideal number for family size,

therefore it is difficult to assert whether the decreasing/increasing numbers depict an improving/worsening situation.

- All 122 indicators are dichotomous (Yes=1/No=0).

Number of IPI indicators and geographical administrative units

Sr. No.	Geographical Unit	NFHS-5, 2021	NFHS-4, 2016
1.	Districts (720)	Data available for 720 Districts and 122 Indicators	Data available for 720 Districts and 114 Indicators
2.	Parliamentary Constituencies (543)	Data available for 543 PCs and 122 Indicators	Data available for 543 PCs and 114 Indicators
3.	Assembly Constituencies (4119)	Data available for 3950 ACs and 122 Indicators	Data available for 3956 ACs and 114 Indicators
4.	Villages (597607)	Data available for 597607 Villages and 122 Indicators	NA

List of indicators that don't have data available for NFHS-4, 2016

- Indicator-15: Measles-Containing Vaccine [Second Dose]
- Indicator-18: Rotavirus Vaccine [3 Doses]
- Indicator-37: Injectables
- Indicator-53: Elevated Blood Pressure or On Medication [Men]
- Indicator-54: Elevated Blood Pressure or On Medication [Women]
- Indicator-66: Risky Waist-to-hip Ratio [Women]
- Indicator-99: Death Registration
- Indicator-104: Internet Usage [Women]

3.2 Final indicator list and definitions

Below is the list and definitions of 122 HNP indicators classified into 7 broad categories:

Indicator ID	Indicator Name	Category	Definition
1	Population with BPL cards	Socio-Economic Profile	Percentage of the sample population self-reported as having a Below Poverty Line (BPL) card
2	Acute Respiratory Infection [All Children]	Health Care	Percentage of children (under age 5 years) with symptoms of Acute Respiratory Infection (ARI) in the 2 weeks preceding the survey
3	Acute Respiratory Infection [Children Getting Treatment - Facility]	Health Care	Percentage of children (under age 5 years) with fever or symptoms of Acute Respiratory Infection (ARI) in the 2 weeks preceding the survey who were taken to a health facility or health provider
4	Diarrhoea [Received ORS]	Health Care	Percentage of children who received an oral rehydration solution (ORS) packet among those who had diarrhoea in the 2 weeks preceding the survey and sought medical care
5	Diarrhoea [Received Zinc]	Health Care	Percentage of children who were given zinc among those who had diarrhoea in the 2 weeks preceding the survey and sought medical care
6	Diarrhoea Treatment [Facility]	Health Care	Percentage of children (under age 5 years) who had diarrhoea in the 2 weeks preceding the survey and were taken to a health facility or health provider
7	DPT Vaccination [3 Doses]	Health Care	Percentage of children (12-23 months) who received 3 doses of diphtheria, pertussis (whooping cough), and tetanus (DPT) vaccine
8	Full Vaccination	Health Care	Percentage of children (12-23 months) who received full vaccination based on information from either a vaccination card or mother's recall
9	Full Vaccination [Vaccination Card]	Health Care	Percentage of children (12-23 months) fully vaccinated based on information on vaccination card
10	Health Insurance [Any]	Health Care	Percentage of the sample population covered under any health insurance scheme (fully or partly)
11	Hepatitis B Vaccine [3 Doses]	Health Care	Percentage of children (12-23 months) who received 3 doses of Hepatitis B vaccine
12	ICDS Benefits [Children]	Health Care	Percentage of children who received benefits from the Integrated Child Development Scheme (ICDS) in the last twelve months
13	Low Birth Weight	Health Care	Percentage of alive births reporting a birth weight of less than 2.5 kg
14	Measles-Containing Vaccine [First Dose]	Health Care	Percentage of children (12-23 months) who received their first dose of measles-containing vaccine (MCV)
15	Measles-Containing Vaccine [Second Dose]	Health Care	Percentage of children (24-35 months) who received a second dose of measles-containing vaccine (MCV)
16	Polio Vaccination [3 Doses]	Health Care	Percentage of children (12-23 months) who received 3 doses of polio vaccine
18	Rotavirus Vaccine [3 Doses]	Health Care	Percentage of children (12-23 months) who received 3 doses of rotavirus vaccine
19	Vitamin A Dose	Health Care	Percentage of children (9-35 months) who received a Vitamin A dose in the last six months
20	Zero Dose [Child Immunization]	Health Care	Percentage of children (12-23 months) who did not receive the first dose of diphtheria, pertussis (whooping cough), and tetanus (DPT) vaccine
21	Antenatal Care Visit [Four or More]	Maternal Health and Family Planning	Percentage of women (15-49 years) who have received four or more antenatal care (ANC) check-ups for their most recent birth
22	Antenatal Care Visit [First Trimester]	Maternal Health and Family Planning	Percentage of women (15-49 years) who had their first antenatal care (ANC) visit during the first trimester of their pregnancy for their most recent birth
23	Birth Registration	Maternal Health and Family Planning	Percentage of live births in the 5 years preceding the survey registered with the civil authority
24	Birth Weight Recorded	Maternal Health and Family Planning	Percentage of live births in the 5 years preceding the survey that had either a written record of the child's weight at the time of birth or the mother was able to recall the weight at the time of birth
25	Caesarean Section Delivery	Maternal Health and Family Planning	Percentage of institutional childbirths delivered by Caesarean section
26	Caesarean Section in Private Sector	Maternal Health and Family Planning	Percentage of births in a private health facility that were delivered by caesarean section
27	Caesarean Section in Public Sector	Maternal Health and Family Planning	Percentage of births in a public health facility that were delivered by caesarean section
28	Childbirths in Public Facility	Maternal Health and Family Planning	Percentage of institutional childbirths in public health facilities
29	Condom	Maternal Health and Family Planning	Percentage of currently married women who use condoms as family planning method
30	Family Planning [Any Methods by Women]	Maternal Health and Family Planning	Percentage of currently married women who use any of the family planning methods
31	Family Planning [Modern]	Maternal Health and Family Planning	Percentage of currently married women (15-49 years) using modern methods of family planning
32	Family Planning [Unmet Need]	Maternal Health and Family Planning	Percentage of currently married women (15-49 years) who have unmet needs for family planning
33	Family Planning Services Quality [Family Planning Counselling]	Maternal Health and Family Planning	Percentage of female non-users of family planning who were counselled about family planning by a health worker
34	Female Sterilization	Maternal Health and Family Planning	Percentage of female users who were ever counselled about side effects of current family planning methods
35	Family Planning Services Quality [Side Effects Counselling]	Maternal Health and Family Planning	Percentage of currently married women (15-49 years) who have undergone sterilization
36	Home Delivery by Skilled Health Personnel	Maternal Health and Family Planning	Percentage of home births by skilled health personnel
37	Injectables	Maternal Health and Family Planning	Percentage of currently married women who use injectables as a family planning method
38	Institutional Childbirth	Maternal Health and Family Planning	Percentage of childbirths delivered in an institutional facility
39	Iron Folic Acid [100 days or more]	Maternal Health and Family Planning	Percentage of mothers who consumed iron folic acid for 100 days or more during their most recent pregnancy
40	Iron Folic Acid [180 days or more]	Maternal Health and Family Planning	Percentage of mothers who consumed iron folic acid for 180 days or more during their most recent pregnancy
41	IUD/PPIUD	Maternal Health and Family Planning	Percentage of currently married women who use an Intrauterine Device (IUD) or Postpartum Intrauterine Device (PPIUD) as a family planning method
42	Male Sterilization	Maternal Health and Family Planning	Percentage of men (15-49 years) who have undergone sterilization
43	Maternal Care Quality [Postpartum]	Maternal Health and Family Planning	Percentage of women ever checked by a health professional during their stay in the facility after their delivery
44	Mother and Child Protection Card	Maternal Health and Family Planning	Percentage of registered pregnancies for which the mother received a Mother and Child Protection (MCP) card
45	Neonatal Tetanus	Maternal Health and Family Planning	Percentage of mothers whose last birth was protected against neonatal tetanus
46	Pill	Maternal Health and Family Planning	Percentage of currently married women who use pills as a family planning method
47	Postnatal Care [Mothers]	Maternal Health and Family Planning	Percentage of mothers who received postnatal care from a doctor/nurse/LHV/ANM/midwife/other health personnel within 2 days of delivery
49	Pregnancy Registration	Maternal Health and Family Planning	Percentage of women (15-49 years) who registered the pregnancy for their most recent birth

50	Skilled Birth Attendance	Maternal Health and Family Planning	Percentage of home deliveries attended by an SBA (Skilled Birth Attendance) trained health worker, out of total home deliveries
51	Unmet Need for Spacing	Maternal Health and Family Planning	Percentage of currently married women (15-49 years) who have unmet needs for birth spacing
52	Diarrhoea [Children]	Morbidity and Mortality	Percentage of children (0-59 months) who had diarrhoea in the 2 weeks preceding survey
53	Elevated Blood Pressure or On Medication [Men]	Morbidity and Mortality	Percentage of men (15-49 years) who have elevated blood pressure (systolic > 140 mmHg and/or diastolic > 90 mm of Hg) or are taking medicine to control blood pressure
54	Elevated Blood Pressure or On Medication [Women]	Morbidity and Mortality	Percentage of women (15-49 years) who have elevated blood pressure (systolic > 140 mmHg and/or diastolic > 90 mm of Hg) or are taking medicine to control blood pressure
55	High Blood Sugar [Men]	Morbidity and Mortality	Percentage of men (15-49 years) whose blood sugar is greater than 140 mg/dl
56	High Blood Sugar [Women]	Morbidity and Mortality	Percentage of women (15-49 years) whose blood sugar is greater than 140 mg/dl
57	High or Very High Blood Sugar or On Medication [Men]	Morbidity and Mortality	Percentage of men (15-49 years) who have a random blood sugar test greater than 140 mg/dl or are taking medicine to control their blood sugar level at the time of the survey
58	High or Very High Blood Sugar or On Medication [Women]	Morbidity and Mortality	Percentage of women (15-49 years) who have a random blood sugar test greater than 140 mg/dl or are taking medicine to control their blood sugar level at the time of the survey
59	Mildly Elevated Blood Pressure [Men]	Morbidity and Mortality	Percentage of men (15-49 years) who have mildly high blood pressure (systolic 140-159 mm of Hg and/or diastolic 90-99 mm of Hg)
60	Mildly Elevated Blood Pressure [Women]	Morbidity and Mortality	Percentage of women (15-49 years) who have mildly high blood pressure (systolic 140-159 mm of Hg and/or diastolic 90-99 mm of Hg)
61	Moderate or Severe Blood Pressure [Men]	Morbidity and Mortality	Percentage of men (15-49 years) who have severely high blood pressure (systolic > 160 mm of Hg and/or diastolic > 100 mm of Hg
62	Moderate or Severe Blood Pressure [Women]	Morbidity and Mortality	Percentage of women (15-49 years) who have severely high blood pressure (systolic > 160 mm of Hg and/or diastolic > 100 mm of Hg)
63	Probability of Dying before Five Years	Morbidity and Mortality	Probability of deaths of children (under age 5 years) per 1,000 live births.
64	Probability of Dying before One Year	Morbidity and Mortality	Probability of infant deaths (under 1 year) per 1,000 live births.
65	Probability of Dying within 28 Days	Morbidity and Mortality	Probability of deaths of children within 28 days of birth per 1,000 live births
66	Risky Waist-to-hip Ratio [Women]	Morbidity and Mortality	Percentage of women (15-49 years) who have a high-risk waist-to-hip ratio (>=0.85)
67	Very High Blood Sugar [Men]	Morbidity and Mortality	Percentage of men (15-49 years) whose blood sugar is greater than 160 mg/dl
68	Very High Blood Sugar [Women]	Morbidity and Mortality	Percentage of women (15-49 years) whose blood sugar is greater than 160 mg/dl
69	Anaemia [Any - Adolescent Women]	Nutrition [Clinical/Anthropometry]	Percentage of women (15-19 years) whose blood haemoglobin level is less than 12 g/dl
70	Anaemia [Any - All Women]	Nutrition [Clinical/Anthropometry]	Percentage of all women (15-49 years) whose blood haemoglobin level is less than 12.0 g/dl for non-pregnant women and less than 11.0 g/dl for pregnant women
71	Anaemia [Any - Pregnant Women]	Nutrition [Clinical/Anthropometry]	Percentage of pregnant women whose blood haemoglobin level is less than 11.0 g/dl
72	Child Anaemia [Any]	Nutrition [Clinical/Anthropometry]	Percentage of children (6-59 months) whose blood haemoglobin level is less than 11.0 g/dl
73	Child Stunting	Nutrition [Clinical/Anthropometry]	Percentage of children (under age 5 years) who are stunted. Stunting is defined as children whose height-for-age z-scores is below -2 SD of WHO Child Growth Standards
74	Child Underweight	Nutrition [Clinical/Anthropometry]	Percentage of children (under age 5 years) who are underweight. Underweight is defined as children whose weight-for-age z-scores is below -2 SD of WHO Child Growth Standards
75	Child Wasting	Nutrition [Clinical/Anthropometry]	Percentage of children (under age 5 years) who are wasted. Wasting is defined as children whose weight-for-height z-scores is below -2 SD of WHO Child Growth Standards
76	Mild Anaemia [Children]	Nutrition [Clinical/Anthropometry]	Percentage of children (6-59 months) whose blood haemoglobin level is between 10g/dl and 11 g/dl
77	Mild Anaemia [Women]	Nutrition [Clinical/Anthropometry]	Percentage of women (15-49 years) whose blood haemoglobin level is between 10g/dl and 11 g/dl (11g/dl and 12 g/dl for pregnant women)
78	Moderate Anaemia [Children]	Nutrition [Clinical/Anthropometry]	Percentage of children (6-59 months) whose blood haemoglobin level is between 7 g/dl and 10 g/dl
79	Moderate Anaemia [Women]	Nutrition [Clinical/Anthropometry]	Percentage of women (15-49 years) whose blood haemoglobin level is between 7 g/dl and 10 g/dl
80	Overweight Children	Nutrition [Clinical/Anthropometry]	Percentage of children (under 5 years) who are overweight
81	Overweight or Obese [Women]	Nutrition [Clinical/Anthropometry]	Percentage of women (15-49 years) whose Body Mass Index (BMI) is greater than or equal to 25.0 kg/m2
82	Severe Anaemia [Children]	Nutrition [Clinical/Anthropometry]	Percentage of children (6-59 months) whose blood haemoglobin level is less than 7 g/dl
83	Severe Anaemia [Women]	Nutrition [Clinical/Anthropometry]	Percentage of women (15-49 years) whose blood haemoglobin level is less than 7 g/dl
84	Severe Stunting [Children]	Nutrition [Clinical/Anthropometry]	Percentage of children (under age 5 years) who are severely stunted. Severe stunting is defined as children whose height-for-age z-scores is below -3 SD of WHO Child Growth Standards
85	Severe Underweight [Children]	Nutrition [Clinical/Anthropometry]	Percentage of children (under age 5 years) who are severely underweight. Severe underweight is defined as children whose weight-for-age z-scores is below -3 SD of WHO Child Growth Standards
86	Severe Wasting [Children]	Nutrition [Clinical/Anthropometry]	Percentage of children (under 5 years) who have Severe Acute Malnutrition. Severe Acute Malnutrition (SAM) is defined as children whose weight-for-height z-scores is below -3 SD of WHO Child Growth Standards
87	Underweight [Women]	Nutrition [Clinical/Anthropometry]	Percentage of women (15-49 years) whose Body Mass Index (BMI) is less than 18.5 kg/m2
88	Adequate Diet [Breastfed Children]	Nutrition [Diet]	Percentage of breastfeeding children (6-23 months) receiving an adequate diet
89	Adequate Diet [Non-breastfed Children]	Nutrition [Diet]	Percentage of non-breastfeeding children (6-23 months) receiving an adequate diet
90	Adequate Diet [Total]	Nutrition [Diet]	Percentage of children (6-23 months) receiving an adequate diet
91	Early Breastfeeding Initiation	Nutrition [Diet]	Percentage of children (under age 3 years) who were breastfed within one hour of birth
92	ICDS Supplementary Nutrition	Nutrition [Diet]	Percentage of pregnant women regularly taking supplementary nutrition under the Integrated Child Development Scheme (ICDS) program
93	Iodized Salt Intake	Nutrition [Diet]	Percentage of sample population consuming iodized salt
94	Exclusive Breastfeeding [Under 6 Months]	Nutrition [Diet]	Percentage of infants under 6 months who were exclusively breastfed
95	Receiving Solid/Semi-solid Food [6-8 Months]	Nutrition [Diet]	Percentage of children aged 6 to 8 months who received solid/semi-solid food preceding the night before survey
96	Zero Food [Children]	Nutrition [Diet]	Percentage of children aged 6-23 months who did not receive any food preceding the night before survey

97	Access to Electricity	Social Infrastructure	Percentage of sample population in households with access to electricity
98	Clean Cooking Fuel	Social Infrastructure	Percentage of the sample population with access to clean fuel for cooking (electricity, LPG/natural gas, biogas)
99	Death Registration	Social Infrastructure	Percentage of deaths in the last 3 years registered with the Civil Authority
100	Handwashing Facilities	Social Infrastructure	Percentage of the sample population with access to handwashing facilities
101	Hygienic Protection Methods [Menstruation]	Social Infrastructure	Percentage of women (15-49 years) using hygienic methods for protection during their menstrual period (locally prepared napkins, sanitary napkins, tampons, and menstrual cups)
102	Improved Sanitation Facility	Social Infrastructure	Percentage of sample population with access to improved sanitation facilities (flush or pour-flush to piped sewer system, septic tank or pit latrine, ventilated improved pit latrine, pit latrine with slab, composting toilet). Sanitation facilities are not considered improved when shared with other sample populations, or open to public use
103	Improved Source of Drinking Water	Social Infrastructure	Percentage of sample population with an improved drinking-water source (piped water into dwelling/yard/plot, piped to a neighbour, public tap/standpipe, tube well or borehole, protected dug well, protected spring, rainwater, tanker truck, cart with a small tank, bottled water, community RO plant)
104	Internet Usage [Women]	Social Infrastructure	Percentage of women (15-49 years) who have ever used the Internet
105	Private Latrine	Social Infrastructure	Percentage sample population with access to an individual self-owned latrine
106	Safe Stool Disposal	Social Infrastructure	Percentage of women practicing safe stool disposal
107	Women with Personal Mobile Phone	Social Infrastructure	Percentage of women (15-49 years) who have a mobile phone for personal use
108	Alcohol Consumption [Men]	Socio-Economic Profile	Percentage of men (15 years or above) who consume alcohol
109	Alcohol Consumption [Women]	Socio-Economic Profile	Percentage of women (15 years or above) who consume alcohol
110	Child Marriage [Boy]	Socio-Economic Profile	Percentage of men (21-25 years) who married before the age of 21
111	Child Marriage [Girl]	Socio-Economic Profile	Percentage of women (20-24 years) who married before the age of 18
112	Currently Working Women	Socio-Economic Profile	Percentage of women (15-49 years) who have worked in the last 12 months and were paid in cash
113	Female School Attendance	Socio-Economic Profile	Percentage of the female population age 6 years and above who ever attended school
114	High School Matriculation [Men]	Socio-Economic Profile	Percentage of men (20-49 years) who have completed their high school education
115	High School Matriculation [Women]	Socio-Economic Profile	Percentage of women (20-49 years) who have completed their high school education
116	Intimate Partner Violence [Against Women]	Socio-Economic Profile	Percentage of ever-married women (18-49 years) who have ever experienced spousal violence (physical or sexual)
117	Literacy [Men]	Socio-Economic Profile	Percentage of men (15-49 years) who are literate
118	Literacy [Women]	Socio-Economic Profile	Percentage of women (15-49 years) who are literate
119	Population below 15 Years	Socio-Economic Profile	Percentage of the population below 15 years of age
120	Sexual Violence [Young Women]	Socio-Economic Profile	Percentage of women (18-29 years) who experienced sexual violence by age 18
121	Teenage Pregnancy	Socio-Economic Profile	Percentage of women (15-19 years) who were already mothers or pregnant at the time of the survey
122	Tobacco Consumption [Women]	Socio-Economic Profile	Percentage of women (15-49 years) who consume any kind type of tobacco
123	Tobacco Use [Men]	Socio-Economic Profile	Percentage of men (15-49 years) who consume any kind type of tobacco
124	Women's Participation in Household Decisions	Socio-Economic Profile	Percentage of currently married women (15-49 years) who usually participate in their household decisions

3.3 Policy linkage between indicators and Government of India programs

The motivation and rationale for the selection of indicators were primarily based on their respective policy relevance. Therefore, we linked all the potential GOI development programmes – in respective domains – which directly (or indirectly) have a bearing on each of the selected 122 HNP indicators. For this, we identified and listed all of the current GOI programmes that have a potential effect (direct or indirect) on the selected outcomes. For example, the outcome for "Anaemia [Any - All Women]" is directly linked to the goals outlined under "*Anemia Mukt Bharat"* of Government of India. On the other hand, the indicator for "Exclusive Breastfeeding for Children under 6 Months" is indirectly (or proxy) linked to the objectives of "Integrated Child Development Services" (ICDS) of Government of India. The full list of indicators along with their linkage with respective programs is presented in Appendix 5.

4. Selection of geographies

NFHS-5 and NFHS-4 offer direct estimates for 707 Districts (2019-21) and 640 Districts (2015-16) respectively, which are nested within 28 States and 8 Union Territories. These surveys utilize the Census 2011 sampling frame to select households. To construct a comparable dataset comprising 122 indicators for India's Districts, PCs, and ACs, we established links between the 2016 NFHS cluster data and the 2021 NFHS District data. This linkage was achieved through a spatial join using ArcGIS Pro, connecting the 2016 GPS-enabled clusters with the 2021 NFHS District shapefile. Of the total Districts within India, 577 Districts maintained consistent geometries – these Districts belonged to the same State as they were in NFHS 4 – while the remaining 130 new Districts comprised 115 Districts carved out of single existing Districts, and 15 Districts created from multiple existing Districts. A total of 720 Districts have been finalized at the District-level analysis for IPI. Hence, from the NFHS, we can present estimates at the 720 Districts, 543 Parliamentary Constituencies, 4,119 Assembly Constituencies, and 597,607 Village levels for 122 HNP indicators.

5. Methodology

5.1 Overview

We calculated the prevalence and absolute headcount for all 122 HNP indicators in 720 Districts and 543 Parliamentary Constituencies across India for both periods, 2015-16 and 2019-21. Additionally, we estimated the prevalence for 4,119 Assembly Constituencies, but not the headcount. Using data from the two NFHS rounds, we also computed the change in prevalence (% points) between 2016 and 2021 for each indicator and geographic area. Furthermore, we provided an indicator-based ranking of these geographies, along with their positional averages, including median and decile values. For a total of 597,607 Villages, we estimated prevalence for the 122 HNP indicators for 2019-2021, though headcount and change (% points) data were not included for the Villages.

The following are specific chronological steps to arrive at the final numbers:

Step 1: The estimation of the 122 indicators across the seven broad domains in both rounds utilized different datasets provided by NFHS. The PR file was used for the socio-economic profile indicators, the KR file for the children's indicators, the IR file for the women-related indicators, and the MR file for the men-related indicators (see Appendix 8).

Step 2: Cluster-level predicted probabilities for all 122 HNP indicators were computed employing the four-level regression model (also known as the random-effects model) for 2016 and 2021 (See section 5.2).

Step 3: NFHS clusters (PSU) were reassigned to the updated geographic boundaries for nesting within 720 Districts, 543 PCs, and 4119 ACs. This was done for both 2016 and 2021 (See section Appendix 3).

Step 4: For both 2016 and 2021, the prevalence (%) of an indicator for the final geography (District, PC, and AC) was derived by taking the mean of cluster-level predicted probabilities within that particular geography.

Step 5: Geographies (District, PC, and AC) were ranked for every indicator. Ranking was done in an order so that lower rank numbers depict a better situation and higher rank numbers indicate a worsening situation. For example, in the case of Child Underweight, the Amritsar District of Punjab ranked 18 with a prevalence of 11.9%, which is a better situation than the 700th rank of the Aravali District of Gujarat with a prevalence of 45.5%.

Step 6: For both NFHS rounds, the decile position was computed for every indicator. Here also, a lower decile position indicates a better situation, and a higher decile category reflects a

worsened situation. In the above example, the decile position for Amritsar was first, whereas it was the last decile for the Aravali District.

Step 7: Change in the prevalence between 2021 and 2016 was computed in % points by direct subtraction, i.e., 2021-2016.

Step 8: We also categorized the geographies based on the direction and magnitude of change between 2016 and 2021 for every indicator. The change estimate was divided into the first two categories for improvement and the last two categories for worsening. These were further divided into two subcategories based on the median cut-off, i.e., worsened and extremely worsened (improved and highest improvement).

Step 9: Finally, using the prevalence estimates and population projections from the Census of India, we computed the indicator-specific absolute headcount for all Districts and PCs for 2019-21. In addition, for each indicator, we ranked Districts and PCs based on the absolute headcount.

5.2 Precision weighted cluster-level estimates

5.2.1 Model specifications

We employed a four-level logistic regression model

(i (level-1); cluster j (level-2); District k (level-3); State l (level-4): $Y_{ijkl} = \beta_0 + (u_{0jkl} + v_{0kl} + f_{0l})$)

to estimate precision weighted cluster-level predicted probabilities. In the model mentioned above, u_{0jkl}, v_{0kl}, f_{0l} are model residuals specific to cluster, District, and State, respectively. These set of residuals are assumed to have a normal distribution around the mean of 0 and the variance of

$$u_{0jkl} \sim (0, \sigma^2_{u0}); v_{0kl} \sim (0, \sigma^2_{v0}); f_{0l} \sim (0, \sigma^2_{f0}).$$

Here, the term σ^2_{u0} denotes within-District, inter-cluster variation, σ^2_{v0} denotes within-State, inter-District variation, and σ^2_{f0} stands for inter-State variation. Variance across individual children and women is not computed directly for binary outcomes and is instead assumed to follow a logistic distribution with a fixed variance of $\pi^2/3$ or 3.29.

Based on the multilevel logistic model estimates, we then generated precision-weighted cluster-level predicted probabilities for all 122 indicators. For more robust estimates, these

probabilities were predicted by pooling information (and borrowing strength) from other clusters that share the same District membership. The probability of each outcome (Y) for each Village/block (cluster) was calculated as

$$\exp\left((\beta_0 + u_{0jkl} + v_{0kl} + f_{0l}\right) + \left(1/\exp(\beta_0 + u_{0jkl} + v_{0kl} + f_{0l})\right).$$

Following were some important model-related considerations:

- For the four-level model discussed above, the number of geographic groups was as provided by the NFHS. For instance, while modelling an outcome for NFHS-4, 28,524 clusters (level-2) were nested within 640 Districts (level-3), which were nested within 36 States and UTs (level-4). For NFHS-5, 30,172 clusters were nested within 707 Districts within 36 States and UTs.
- The number of clusters may vary across indicators depending on the study sample. For certain indicators, when there were zero samples at the District, PC, and AC levels, it was not possible to calculate estimates for those geographic units. Further, for NFHS 4, 2016 data was available for 114 indicators only.

5.2.2 Interpretation of the model

From the above-discussed model, we computed the probability of each outcome for clusters for both NFHS-4 and NFHS-5. These cluster-level probabilities were used to aggregate the mean at the District level. For example, the above model provides the probability (in %) of child underweight for 29,551 clusters for NFHS 5. These cluster-level probabilities account for the variations in outcomes across different geographies. The preceding modelling procedure was implemented for each of the 122 HNP indicators.

5.2.3 Software specifications

Multilevel modelling was performed using the STATA 15 and MLwiN 3.0 software program (using *runmlwin*) and the Monte Carlo Markov Chain (MCMC) method using the Gibbs sampler, keeping the default prior distribution of Iterated Generalized Least Square (IGLS) as the starting value.

5.3 Geographic aggregation

5.3.1 Updating District shapefile (720)

There are 4 sources used in the creation of this shapefile:

1. DHS 707 District Shapefile for NFHS-5
2. Survey of India Country Boundary
3. AC Shapefile of Andhra Pradesh from BM
4. Andhra Pradesh AC to New District Information (from CEO of AP)

Andhra Pradesh districts were created separately using the AC shapefile. We dissolved each AC shapefile in Andhra Pradesh according to the information in the AC to District linkage provided to us by the Chief Electoral Officer (CEO) of Andhra Pradesh's website. Then, we merged the newly created Andhra Pradesh Districts with the 707-District shapefile to create a 720-District shapefile. Finally, to fill in the rest of the country, we used the Survey of India Country Boundary to add any remaining polygons to match the boundary as per the Survey of India.

5.3.2 Updating the Parliamentary Constituency shapefile.

One minor change was made to the Parliamentary Constituency shapefile to align Aarku and Eluru PCs. No other changes were done to the original source BM shapefile.

5.3.3 Updating the Assembly Constituency shapefile.

From the original BM shapefile for ACs, 4,047 polygons were kept as is. 102 polygons were merged into 47 polygons, as they were actually the same AC split into multiple polygons. There were 28 polygons that had no names in the BM shapefile. Out of these, 25 of them were uninhabited regions where people do not live. Three polygons were extra polygons for three ACs (Choriyasi in Gujarat, Madevapura in Karnataka, and Nalasopara in Maharashtra). There were also 25 ACs that were missing in the shapefile, and they were inserted based on the sources in the following table:

Descriptions of ACs	Link of the source	Accessed on
12 ACs of Ahamedabad District of Gujarat 8 ACs of Surat District of Gujarat	https://en.wikipedia.org/wiki/List_of_constituencies_of_the_Gujarat_Legislative_Assembly https://upload.wikimedia.org/wikipedia/commons/3/3e/Wahlkreise_zur_Vidhan_Sabha_von_Gujarat.svg	July 22, 2022

Four ACs from Indore District of Madhya Pradesh	https://indore.nic.in/en/constituency/	July 22, 2022
One AC from Tamil Nadu	https://upload.wikimedia.org/wikipedia/commons/e/e1/Constitution-Gingee.svg	July 22, 2022

5.3.4 Updating the Village shapefile

The goal for this Village data processing is to produce a nationwide Village polygon shapefile of India for display on the dashboard, with a secondary goal of retaining Village ID numbers that can be linked back to Census data. This processing was performed in ArcGIS Pro, version 2.9. The Bharat Map polygon shapefile Village Shapefile.shp contains Village polygons for all but 8 States: Arunachal Pradesh, Himachal Pradesh, Jammu & Kashmir, Ladakh, Manipur, Mizoram, Nagaland, and Sikkim. These 8 States do have Village point locations, and it was decided to create Thiessen polygons from these points to merge into the existing Village Shapefile.shp shapefile to represent Village areas in these 8 States. The process is discussed in detail in the Appendix 2.

5.3.5 Analyzing District reorganizations: building linkages with Villages.

There were 130 Districts whose sub-Districts changed in geography (either a new District created, or a parent District was altered). To capture these changes, data was taken from various sources; links and date of access has been provided for each and every source that was used to account for these reorganisations.

For data on the basic constitution of each District in terms of sub-Districts, and of sub-Districts in terms of Villages, Primary Census Abstract data files from Census of India, 2011 were used. Both were downloaded from: https://Censusindia.gov.in/Census.website/data/population-finder (Date of access: 7 June 2023)

The process

The master file used for the entire District reorganization analysis process was the 2011 Census of India PCA file. The PCA file contains data on the constitution of every District of India in terms of their sub-Districts. The common methodology employed throughout the entire exercise involved referencing Government Orders related to the reorganization of individual Districts. By carefully comparing these Government Orders with the PCA file, an accurate list of sub-Districts constituting each reorganized District was created. Various sources were utilized to account for the reorganization of every District in the following forms:

- Formation of a District comprising sub-Districts from 1 parent District
- Formation of a District comprising sub-Districts from 2 parent Districts
- Formation of a District comprising sub-Districts from 3 parent Districts

Step by step process

Step 1: In accordance with official Government Notifications pertaining to District reorganization, the sub-Districts of the newly formed Districts were meticulously documented.

Step 2: The Government Notifications included information regarding the names of the District or Districts from which these new Districts were created. These Districts are the parent Districts. Next, using the 2011 Census PCA File, we documented the sub-Districts that constituted the parent District or Districts.

Step 3: Following the compilation of sub-Districts that make up the newly formed District (Step 1) and its parent District (Step 2), it was essential to address changes in the parent Districts. This was because certain sub-Districts from these parent Districts now were transferred to these newly formed Districts. This involved removing the sub-Districts in list 1 (sub-Districts in the newly formed District) from list 2 (the list of sub-Districts of the parent District out of which the new District was originated).

Thus, the sub-Districts of a newly formed District were derived both from the Government Notifications and by using the list of sub-Districts of a parent-District in the PCA file, and changes in parent Districts were accounted for by manually removing sub-Districts now part of newly formed Districts. Comprehensive details can be found in Appendix 2, which offers illustrative examples.

Step 4: The aggregation of Districts in Andhra Pradesh was done separately using data files from the Delimitation Commission 2008 final files and the Census of India 2001 and 2011 Village files. Utilizing the Election Commission of India Excel file, a master Village directory was established, comprising 2001 Villages linked to ACs, and subsequently PCs. Next, the selection was narrowed down to include only ACs in Andhra Pradesh following the split from Telangana. This process was completed by manually going through each entry and checking and verifying its accuracy. Some of these entries were not able to be matched perfectly due to duplicate entries and other data issues; however, these errors do not affect the final output, as all Census 2011 Villages and Sub-Districts were linked to the correct AC if most of their units fell into that AC.

The linkage to 2011 Villages was done via the Rural PLCN 2001 to MDDS 2011 file provided by the Census of India for Andhra Pradesh. This linkage was completed after the master

directory was finalized via a "name match" – a critical step for ensuring the Village names were spelled correctly in order for the match to go through. Then, using the AC to District linkage file, the final file with Census 2011 Villages linked to ACs, PCs, and 720 Districts were created.

District reorganization example: Palghar's formation from Thane in Maharashtra

Step 1: Using the Government Notification of reorganisation for Palghar, the sub-Districts of this newly formed District are: 1) Vasai, 2) Talasari, 3) Dahanu, 4) Vikramgad, 5) Jawhar, 6) Mokhada, 7) Wada, 8) Palghar

Step 2: The Government Notification shows that the District of Palghar has been formed out of the District of Thane. Thane is the parent District of Palghar. Now using the PCA 2011 file, the sub-Districts of the District Thane are noted down. As per the 2011 PCA file, District Thane is constituted of the following 15 sub-Districts: 1) Talasari, 2) Dahanu, 3) Vikramgad, 4) Jawhar, 5) Mokhada, 6) Vada, 7) Palghar, 8) Vasai, 9) Thane, 10) Bhiwandi, 11) Shahapur, 12) Kalyan, 13) Ulhasnagar, 14) Ambarnath, 15) Murbad.

Step 3: From Step 1 it is evident that the eight sub-Districts are now part of the newly formed District Palghar. In order to account for the changes in the parent District of Thane, it is necessary to remove these 8 sub-Districts in List 1 from the 15 sub-Districts in List 2. The remaining 7 sub-Districts of- 1) Vasai, 2) Thane, 3) Bhiwandi, 4) Shahapur, 5) Kalyan, 6) Ulhasnagar, 7) Ambarnath, 8) Murbad.

After following these 3 steps, the accounting includes the two newly formed Districts of Thane and Palghar. The same procedure was followed even in the cases of new Districts formed out of 2 or even 3 Districts.

Note: There were cases where, on creating a new District, Government Notifications showed entirely new sub-Districts were being formed out of existing sub-Districts. These new sub-Districts were unavailable in the PCA 2011 File as they did not exist in 2011. Thus, they were not included while consolidating the final list of reorganised Districts, but their parent sub-Districts were. This has ensured the complete accountability of every District's population post-reorganisation.

5.4 Arriving at final estimates by geographies

Taking the mean of cluster-level predicted probabilities for the updated District, PC, and AC boundaries, we arrived at prevalence (%) estimates for 720 Districts, 543 PCs, and 4,119 ACs. The following is the stepwise elaboration.

5.4.1 Aggregating mean prevalence for District, PC, and AC.

- We computed the mean of cluster-level probabilities to arrive at District, PC, and AC level prevalence estimates.
- For example, the prevalence of Child Underweight in Karauli District of Rajasthan is 34.5%, which is the average estimate of predicted probabilities of 44 clusters within Karauli.
- A District-level prevalence (%) represents the average of cluster-level predicted probabilities (%) within that respective District.
- This method was used to estimate the prevalence at the District, PC, and AC levels for both NFHS-4 and NFHS-5.

5.4.2 Estimating means prevalence at State and national level.

- We also computed prevalence estimates for larger geographies at the State and national levels.
- It may be noted that national- and State-level prevalence are untreated estimates and were not obtained from the regression model using cluster-level predicted probabilities.
- We directly computed the weighted average of outcomes for State and national level using the individual data sets.

5.4.3 Village-level predictions.

- Using the Census of India PCA file, we selected all the Villages from the rural areas. Additional Villages with zero population were dropped before analysing the data. The Village-level estimates were computed using semi-supervised machine learning techniques. We used the Census of India indicators to obtain the unlabelled data at the Village level and NFHS-5 indicators to obtain cluster-level estimates as labelled data.
- The Village level indicator estimated data was linked with the Census PCA file to add the identifiers such as sub-Districts, Districts, and State information for each Village. These Village-level files were then merged with the 720 Districts to get the data aligned with AC-, PC-, and District-level data as per the NFHS geographies.

5.4.4 Quality checks, validation, and sensitivity tests

- We followed several rigorous and transparent procedures to ensure the accuracy of the estimates.
- Specifically, through various techniques we performed validation checks at all steps (prior- and post-precision weighted estimation) to ensure the reliability of the estimates.
- At the outset, prior to performing the regression model, weighted prevalence estimates for all indicators obtained directly from individual-level data – not predicted probabilities from the regression model – were crossed-check (matched) with the NFHS India Report. This ensured the correctness of coding for the construction of the numerator and denominator of the indicator. This process was performed and repeated for all 122 HNP indicators.
- We used a range of descriptive measures (mean, median, IQR, and histograms) to examine the statistical distributions of the treated outcomes post estimation. This was also compared with the untreated numbers to check for any visibly huge divergence.
- To ensure the reliability of the District-level and PC-level denominators for the estimation of headcount, we compared the distribution (%) of the District sample across total sample of NFHS with Census 2011 distribution of population across Districts.
- The final estimates for all geographies (District/PC/AC) were thoroughly reviewed by the quality checks and validation team for typos, miscalculations, or any other type of errors.

5.5 Headcount estimation

For Districts and PCs, the absolute headcount for each indicator was estimated using (a) predicted prevalence (%) from the above-discussed regression model; (b) weighted distribution (%) of the District sample across the total sample from NFHS; and (c) all India age-wise projected population for 2021 from Census Projections 2011-2036 (National Commission on Population, 2019). Household level indicators were computed at overall population level (e.g. access to electricity), the total sample was considered (de jure and de facto) for headcount estimation as provided in the NFHS member dataset. Below is the step-by-step guide on the headcount estimation procedure.

5.5.1 Assigning and finalizing denominators

- The first step was to estimate the District-level and PC-level denominators (total population of the corresponding indicator). For this, we used the weighted % share of Districts in the total NFHS-5 sample and the All India age-wise projected population for 2021.

- We assigned clusters from NFHS-5 individual-level data to an updated number of 720 Districts and 543 PC boundaries.
- Following this, we listed the number of denominator categories based on the indicator-specific sample population. For example, the denominator for Child Underweight and Child Stunting is All Living Children Aged 0-59 Months. Whereas the denominator for Child Anaemia was All Alive Children Aged 6-59 Months. A total of 29 denominator categories were listed based on 122 HNP indicators (Appendix 5).

5.5.2 Estimating denominators.

- We then computed the weighted percent share of each District across indicator-specific sample populations in NFHS-5. This provided the percent share of 720 Districts in the total indicator-specific denominator. It may be noted that the total sample varied across indicators depending on the denominator[1]. For example, the denominator for Child Underweight was All Living Children Aged 0-59 Months, and therefore we computed the percent share of 720 Districts in the total NFHS-5 sample of 224,218 alive children aged 0-59 months.
- Finally, District- and PC-level denominators were computed by obtaining the product of the percent share of each District with the respective All India age-specific population from Census projections. In the above example, we multiplied the percent share of each District (in total NFHS-5 sample of 224,218 alive children aged 0-59 months) with the projected population of 11,4273,000 children aged 0-59 months in 2021 (from Census). For instance, the weighted share of Kupwara District in the sample (0-59 months children) was 4.2 percent, hence, multiplying it with the All-India child population (0-59 months), i.e., 114,273,000, we get the projected denominator for Kupwara of (4.2/100*114,273,000) 4,799,466 children aged 0–59-months in 2021.

5.5.3 Estimating headcount (District and PC, NFHS-5)

- The final step was the computation of indicator-wise absolute headcount for 720 Districts and 543 PCs using predicted prevalence (from regression model) and projected denominator for 2021.

[1] The absolute headcount and predicted prevalence for household level indicators (Population with BPL cards; Health Insurance; Iodized Salt Intake; Access to Electricity; Clean Cooking Fuel; Handwashing Facilities; Improved Sanitation Facility; Improved Source of Drinking Water; Private Latrine) were also computed at the individual level using the member file data from NFHS.

- The absolute headcount for each indicator was obtained from the product of the District-level predicted prevalence (%) of that indicator and the respective District-level projected denominator.

For example, the absolute headcount of child underweight for the Kupwara District was 11,753 children - the multiplication of predicted prevalence (i.e., 24.5%) and projected denominator (0-59 months children in Kupwara as computed above) (i.e., 4,799,466). It may be noted that above figures are approximated.

5.6 Estimation of summary statistics

After computing the prevalence (and headcount for 2021) for both rounds for all 122 indicators, we also estimated summary statistics including ranking, median prevalence, and decile for each of the geographical units. Section-wise details and considerations are pointed out below.

5.6.1 Descriptive statistics – 2016 and 2021

- For District- and PC-level estimates, we computed rank and decile categories separately for all indicators for 2016 and 2021.
- Hence, for both 2016 and 2021, all Districts and PCs were classified based on decile position and ranks.
- Ranking was done by considering the normative direction towards which the policy intends the outcome prevalence to move, i.e., to decrease or increase the prevalence. For example, the prevalence of Child Underweight was classified as a "negative" indicator, as policy and programmes aim to reduce (decrease) the prevalence of underweight. Therefore, rank one will be assigned to the District and PC with the lowest prevalence of Child Underweight.
- It may be noted that ranking was ordered so that the lowest rank number (i.e., one) depicts the best-performing District (PC) and vice versa.
- We also categorized the Districts based on their respective decile position. Here also, categorization was ordered in a way to depict the lowest decile as the best-performing group of Districts and the highest decile as the worst-performing group of Districts.
- Headcount and rankings were not calculated for AC- and Village-level estimations.

5.6.2 Descriptive statistics – Change between 2021 and 2016

We computed the change in prevalence between 2021 and 2016 for Districts, PCs and ACs. The change was computed by simple subtraction (2021-2016) in % points. For example, the

prevalence of child underweight in Guntur District was 25.22% in 2021 and 27.43% in 2016, so the change will be -2.21 % points (25.22-27.43).

We also ranked the Districts based on the magnitude of change in the outcomes between 2016 and 2021. Again, ranking was done considering the direction towards which policy intends the outcome prevalence to move.

5.6.3 Descriptive statistics – Create Report

Number of indicators better than All India average (2021):

- **Positive:** If the Indicator Value for the District is greater than the All-India Average.
- **Negative:** If the Indicator Value for the District is less than the All-India Average.
- The direction of the variable was also considered, for example, Population Below Poverty is a negative indicator. Thus, if the estimate for any geometry is lower than the national estimate, the indicator will be considered better than the national average.

Number of indicators better than State average (2021):

- **Positive:** If the Indicator Value for the District is greater than the State Average.
- **Negative:** If the Indicator Value for the District is less than the State Average.

Pie chart with four categories

The Pie Chart with Four Categories is based on four specific performance criteria for categorizing indicators. In the positive category for "Highest Improvement", the indicator change should be greater than 0, and the change should be in the top 50% of indicator changes for all geographic units. Similarly, in the positive category for "Improved," the indicator change should be greater than 0, and the change should be in the bottom 50% of indicator changes for all geographic units. On the negative end, the "Worsened" category is assigned when the indicator change is less than 0, and the change is in the top 50% of indicator changes for all geographic units. Lastly, the "Extremely Worsened" category is designated when the indicator change is less than 0, and the change is in the bottom 50% of indicator changes for all geographic units.

Rank showing any improvement.

The process for determining the rank showing any improvement involves calculating the Any Improvement percentage, which is derived by dividing the count of indicators showing

improvement by the total number of indicators with available data and then multiplying the result by 100. Subsequently, the obtained Any Improvement percentage is used to assign ranks, with higher percentage values considered better. In cases where there are ties in percentage values, competition ranking is applied to ensure fair and consistent ranking among the involved entities.

Top 10 indicators showing improvement.

The top 10 indicators showing improvement are selected based on those showing the greatest change from the set of indicators categorized as "Highest Improvement" or "Improved." Indicators with positive values are ranked based on higher positive net change (2016 – 2021). Conversely, for those with negative values, lower rank is determined based on lower positive net change within the same time period.

Top 10 indicators showing worsening.

Similarly, the top 10 indicators showing worsened conditions are ranked based on those with the lowest net change (2016 – 2021) from the set of indicators categorized as "Extremely Worsened" or "Worsened". For indicators with negative values, higher rank is determined by greater negative change, while for positive values, lower ranking is given to indicators with lower negative change.

Notes:

- Some Districts and PCs lack data for certain indicators in NFHS-5 and NFHS-4.
- In the NFHS-5 survey, 169 ACs and in the NFHS-4 survey, 163 ACs have no data available for all 122 indicators.
- There are several Villages for which no maps are available.
- The indicator change summary is unavailable for the Village report.
- The Village names in the create report are not available in Hindi language.

5.6.4 Mapping conventions

The divergent color legend spans from red to blue and is segmented into 10 percentiles (deciles). Numeric ranges for each decile category are provided beneath, indicating the range for each. The orientation of each indicator is considered in constructing this legend. This applies for all the geographies (District, PC, AC, and Village).

Change analysis.

Initially, all geographic units (District, PC, AC, and Village) were divided into two groups based on improvement or worsening, determined by subtracting NFHS-4 values from NFHS-

5 values. Subsequently, each group of Districts (improved and worsened) for each indicator was further categorized into two additional sub-groups, utilizing the 50th percentile of the improved and worsened groups separately. The orientation of each indicator was also factored into the creation of this legend.

5.6.5 Aspirational Districts

Launched by the Hon'ble Prime Minister in January 2018, the Aspirational Districts Programme (ADP) seeks to rapidly and efficiently transform 112 of the most underdeveloped Districts nationwide. The foundational principles of the program include Convergence (of Central and State Schemes), Collaboration (involving Central- and State-level Nodal Officers and District Collectors), and Competition among Districts through monthly delta ranking. These initiatives are propelled by a mass movement, emphasizing the collective effort required for meaningful and sustainable development. The list of 112 Aspirational Districts is provided in Appendix A7.

6. References

1. International Institute for Population Sciences (IIPS) and ICF. 2021. National Family Health Survey (NFHS-5), 2019-21: Volume I. Mumbai: IIPS.
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4. International Institute for Population Sciences and ORC Macro. National Family Health Survey (NFHS-2), 1998–99: India. Mumbai: IIPS, 2000.
5. International Institute for Population Sciences and Macro International. National Family Health Survey (NFHS-3), 2005–06: India, volume 1. Mumbai: IIPS, 2007.
6. National Commission on Population. "Population projections for India and States 2011-2036." (2019).
7. IIPS. (2021). National Family Health Survey (NFHS-5) 2019–2021 fact sheets: Key Indicators 22 States/UTs from phase I. International Institute of Population Sciences, Ministry of Health and Family Welfare, Government of India.
8. Charlton, C., Rasbash, J., Browne, W.J., Healy, M. and Cameron, B. (2024) *MLwiN Version 3.10*. Centre for Multilevel Modelling, University of Bristol.

7. Appendix

Appendix 1: STATA codes
Appendix 1.1: Estimation of Indicators

Indicator 1: Population with BPL cards

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if sh75==8
*Dropped missing observation - 4,642
********* FINAL ANALYTIC SAMPLE - 2,839,275 sample population
********* Indicator Construction - bplcard
gen bplcard05 = .
replace bplcard05=1 if sh75==1
replace bplcard05=0 if sh75==0
label define bplcard05 1 "Yes" 0 "No"
label values bplcard05 bplcard05
```

Indicator 2: Acute Respiratory Infection [All Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
drop if b19>60
*Dead children - 11884
********* Sample Exclusion - Indicator-Specific Criteria
********* FINAL ANALYTIC SAMPLE -
********* Indicator Construction - Ari symptoms
gen arisymptoms = .
replace arisymptoms = 1 if h31b==1 & (h31c==1 | h31c==3)
replace arisymptoms = 0 if h31b==0 | h31c==6 | h31c==8 | h31c==2
label define arisymptoms 1 "Yes" 0 "No"
label values arisymptoms arisymptoms
```

Indicator 3: Acute Respiratory Infection [Children Getting Treatment - Facility]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
gen arisymptoms = .
replace arisymptoms = 1 if h31==2 & (h31b==1 & h31c==1)
replace arisymptoms = 0 if h31==0
label define arisymptoms 1 "Yes" 0 "No"
label values arisymptoms arisymptoms
drop if h31==8
drop if h22==8
drop if h22==0 & arisymptoms==0
* Dropped Flagged Observations/Don't Know - 526
* Dropped Children with no fever or ARI symptoms - 183,504
```

```
********* FINAL ANALYTIC SAMPLE - 40,188 children aged 0-59 months with fever/ARI
symptoms
********* Indicator Construction - fevaritrt
gen fevaritrt05 = .
replace fevaritrt05 = 1 if h32z==1 & (h22==1 | arisymptoms==1)
replace fevaritrt05 = 0 if h32z==0 & (h22==1 | arisymptoms==1)
replace fevaritrt05 = . if h22==0
```

Indicator 4: Diarrhoea [Received ORS]

```
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if h11==0 | h11==8
drop if h13==8
* Dropped Children who don't have diarrhoea/Don't know - 208,884
* Dropped children dont know about ORS - 32
********* FINAL ANALYTIC SAMPLE - 15,302 CHILDREN aged 0-59 months who had diarrhoea in
last two weeks
********* Indicator Construction - Diarrhoea
gen diarrors05 =.
replace diarrors05 = 1 if h11==2 & h13==2
replace diarrors05 = 0 if h11==2 & h13==0
label define diarrors05 1 "Yes" 0 "No"
label values diarrors05 diarrors05
```

Indicator 5: Diarrhoea [Received Zinc]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if h11==0 | h11==8
drop if h15e==8
* Dropped Children who don't have diarrhoea/Don't know - 208,884
* Dropped children dont know about zinc - 420
********* FINAL ANALYTIC SAMPLE - 14,914 CHILDREN aged 0-59 months who had diarrhoea in
last two weeks
********* Indicator Construction
gen diarrzinc05 =.
replace diarrzinc05 = 1 if h11==2 & h15e==1
replace diarrzinc05 = 0 if h11==2 & h15e==0
label define diarrzinc05 1 "Yes" 0 "No"
label values diarrzinc05 diarrzinc05
```

Indicator 6: Diarrhoea Treatment [Facility]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
```

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if h11==0 | h11==8
* Dropped Children who don't have diarrhoea/Don't know - 208,884
********* FINAL ANALYTIC SAMPLE - 15,334 CHILDREN aged 0-59 months who had diarrhoea in
last two weeks
********* Indicator Construction -
gen diarmedtrt05 =.
replace diarmedtrt05 = 1 if h12z==1
replace diarmedtrt05 = 0 if h12z==0
label define diarmedtrt05 1 "Yes" 0 "No"
label values diarmedtrt05 diarmedtrt05
```

Indicator 7: DPT Vaccination [3 Doses]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<12 | age>23
drop if h3==. | h5==. | h7==.
drop if h3==8 | h5==8 | h7==8
*Age Criteria - 180,726
*Missing Observations - 0
*Flagged/Dont' know - 115
********* FINAL ANALYTIC SAMPLE - 49023 CHILDREN aged 12-23 months
********* Indicator Construction - dptv
gen dptv105 = inrange(h3,1,3) if h3<8 & !missing(h3)
gen dptv205 = inrange(h5,1,3) if h5<8 & !missing(h5)
gen dptv305 = inrange(h7,1,3) if h7<8 & !missing(h7)
gen dptv05 = .
replace dptv05 = 0 if dptv1==0 | dptv2==0 | dptv3==0
replace dptv05 = 1 if dptv1==1 & dptv2==1 & dptv3==1
label define dptv05 0 "No" 1 "Yes"
label values dptv05 dptv
```

Indicator 8: Full Vaccination

```
********* Age - 0-59 months [age
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<12 | age>23
drop if h2==. | h3==. | h4==. | h5==. | h6==. | h7==. | h8==. | h9==.
drop if h2==8 | h3==8 | h4==8 | h5==8 | h6==8 | h7==8 | h8==8 | h9==8
*Age Criteria - 180,726
*Missing Observations - 0
*Flagged/Dont' know - 366
********* FINAL ANALYTIC SAMPLE - 48661 CHILDREN aged 12-23 months
********* Indicator Construction - fullv
gen bcgv05 = inrange(h2,1,3) if h2<8 & !missing(h2)
```

```
label define bcgv05 0 "No" 1 "Yes"
label values bcgv05 bcgv
gen mslv05 = inrange(h9,1,3) if h9<8 & !missing(h9)
label define mslv05 0 "No" 1 "Yes"
label values mslv05 mslv
gen poliov105 = inrange(h4,1,3) if h4<8 & !missing(h4)
gen poliov205 = inrange(h6,1,3) if h6<8 & !missing(h6)
gen poliov305 = inrange(h8,1,3) if h8<8 & !missing(h8)
gen poliov05 = .
replace poliov05 = 0 if poliov105==0 | poliov205==0 | poliov305==0
replace poliov05 = 1 if poliov105==1 & poliov205==1 & poliov305==1
label define poliov05 0 "No" 1 "Yes"
label values poliov05 poliov
gen dptv105 = inrange(h3,1,3) if h3<8 & !missing(h3)
gen dptv205 = inrange(h5,1,3) if h5<8 & !missing(h5)
gen dptv305 = inrange(h7,1,3) if h7<8 & !missing(h7)
gen dptv05 = .
replace dptv05 = 0 if dptv105==0 | dptv205==0 | dptv305==0
replace dptv05 = 1 if dptv105==1 & dptv205==1 & dptv305==1
label define dptv05 0 "No" 1 "Yes"
label values dptv05 dptv
egen fullv05 = anycount(dptv05 poliov05 mslv05 bcgv05) if !missing(dptv05) &
!missing(poliov05) & !missing(mslv05) & !missing(bcgv05), v(1)
replace fullv05 = . if missing(dptv05) | missing(poliov05) | missing(mslv05) |
missing(bcgv05)
recode fullv05 1/3=0 4=1
label define fullv05 0 "No" 1 "Yes"
label values fullv05 fullv
```

Indicator 9: Full Vaccination [Vaccination Card]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<12 | age>23
drop if h2==. | h3==. | h4==. | h5==. | h6==. | h7==. | h8==. | h9==.
drop if h2==8 | h3==8 | h4==8 | h5==8 | h6==8 | h7==8 | h8==8 | h9==8
drop if h1~=1
*Age Criteria - 180,726
*Missing Observations - 0
*Flagged/Dont' know - 366
*Vaccine/health Card Not Seen - 5,389
********* FINAL ANALYTIC SAMPLE - 37,737 CHILDREN aged 12-23 months
********* Indicator Construction - fullvcard
gen bcgv05 = inrange(h2,1,3) if h2<8 & !missing(h2)
replace bcgv05=0 if h2==2
label define bcgv05 0 "No" 1 "Yes"
label values bcgv05 bcgv
gen mslv05 = inrange(h9,1,4) if h9<8 & !missing(h9)
replace mslv05=0 if h9==2
```

```
label define mslv05 0 "No" 1 "Yes"
label values mslv05 mslv
gen poliov105 = inrange(h4,1,3) if h4<8 & !missing(h4)
replace poliov105=0 if h4==2
gen poliov205 = inrange(h6,1,3) if h6<8 & !missing(h6)
replace poliov205=0 if h6==2
gen poliov305 = inrange(h8,1,3) if h8<8 & !missing(h8)
replace poliov305=0 if h8==2
gen poliov05 = .
replace poliov05 = 0 if poliov105==0 | poliov205==0 | poliov305==0
replace poliov05 = 1 if poliov105==1 & poliov205==1 & poliov305==1
label define poliov05 0 "No" 1 "Yes"
label values poliov05 poliov
gen dptv105 = inrange(h3,1,3) if h3<8 & !missing(h3)
replace dptv105=0 if h3==2
gen dptv205 = inrange(h5,1,3) if h5<8 & !missing(h5)
replace dptv205=0 if h5==2
gen dptv305 = inrange(h7,1,3) if h7<8 & !missing(h7)
replace dptv305=0 if h7==2
gen dptv05 = .
replace dptv05 = 0 if dptv105==0 | dptv205==0 | dptv305==0
replace dptv05 = 1 if dptv105==1 & dptv205==1 & dptv305==1
label define dptv05 0 "No" 1 "Yes"
label values dptv05 dptv
egen fullvcard05 = anycount(dptv05 poliov05 mslv05 bcgv05) if !missing(dptv05) &
!missing(poliov05) & !missing(mslv05) & !missing(bcgv05), v(1)
replace fullvcard05 = . if missing(dptv05) | missing(poliov05) | missing(mslv05) |
missing(bcgv05)
recode fullvcard05 1/3=0 4=1
label define fullvcard05 0 "No" 1 "Yes"
label values fullvcard05 fullvcard
```

Indicator 10: Health Insurance [Any]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if sh71==.
drop if sh71==8
*dropped don't know observation - 14,292
********* FINAL ANALYTIC SAMPLE - 2,829,625 sample population
********* Indicator Construction – health insurance
gen healthinsu05 =.
replace healthinsu05 = 1 if sh71==1
replace healthinsu05 = 0 if sh71==0
label define healthinsu05 1 "Yes" 0 "No"
label values healthinsu05 healthinsu05
```

Indicator 11: Hepatitis B Vaccine [3 Doses]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
```

```
drop if age<12 | age>23
drop if h61==. | h62==. | h63==.
drop if h61==8 | h62==8 | h63==8
*Age Criteria - 180,726
*Missing Observations - 0
*Flagged/Dont' know - 205
********* FINAL ANALYTIC SAMPLE - 43,287 CHILDREN aged 12-23 months
********* Indicator Construction - hepv1
gen hepv105 = inrange(h61,1,3) if h61<8 & !missing(h61)
gen hepv205 = inrange(h62,1,3) if h62<8 & !missing(h62)
gen hepv305 = inrange(h63,1,3) if h63<8 & !missing(h63)
gen hepv05 = .
replace hepv05 = 0 if h61==0 | h62==0 | h63==0
replace hepv05 = 1 if h61==1 & h62==1 & h63==1
label define hepv05 0 "No" 1 "Yes"
label values hepv05 hepv
```

Indicator 12: ICDS Benefits [Children]

```
********* FINAL ANALYTIC SAMPLE -  349034 children aged 0-6 years
********* Indicator Construction - childbenicds
gen childbenicds = .
replace childbenicds = 1 if icdschild==1
replace childbenicds = 0 if icdschild==0
label define childbenicds 1 "Yes" 0 "No"
label values childbenicds childbenicds
```

Indicator 13: Low Birth Weight

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if m19==9996
drop if m19==9998
* Dropped observations children not weighed - 17421
* Dropped Missing/Don't know observations - 3702
******** FINAL ANALYTIC SAMPLE - 203095 children aged 0-59
********* Indicator Construction - lowbw
gen birthweight = m19/1000
gen lowbw05 = .
replace lowbw05 = 1 if birthweight < 2.5
replace lowbw05 = 0 if birthweight >= 2.5
label define lowbw05 1 "Yes" 2 "No"
label values lowbw05 lowbw05
```

Indicator 14: Measles-Containing Vaccine [First Dose]

```
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<12 | age>23
drop if h9==.
```

```
drop if h9==8
*Age Criteria - 180,726
*Missing Observations - 0
*Flagged/Dont' know - 295
********* FINAL ANALYTIC SAMPLE - 43,197 CHILDREN aged 12-23 months
********* Indicator Construction - mslv
gen mslv05 = inrange(h9,1,3) if h9<8 & !missing(h9)
label define mslv05 0 "No" 1 "Yes"
label values mslv05 mslv
```

Indicator 15: Measles-Containing Vaccine [Second Dose]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion -Indicator-Specific Criteria
drop if age<24 | age>35
drop if h9a==.
drop if h9a==8

*Age criteria - 179,980
*Missing observations - 0
*Flagged/Don't know - 401
********* FINAL ANALYTIC SAMPLE - 43,837
********* Indicator Construction - mslv2
gen mslv205 = inrange(h9a,1,3) if h9a<8 & !missing(h9a)
label define mslv205 0 "No" 1 "Yes"
label values mslv205 mslv2
```

Indicator 16: Polio Vaccination [3 Doses]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<12 | age>23
drop if h4==. | h6==. | h8==.
drop if h4==8 | h6==8 | h8==8
*Age Criteria - 180,726
*Missing Observations - 0
*Flagged/Dont' know - 41
********* FINAL ANALYTIC SAMPLE - 43,451 CHILDREN aged 12-23 months
********* Indicator Construction - poliov
gen poliov105 = inrange(h4,1,3) if h4<8 & !missing(h4)
gen poliov205 = inrange(h6,1,3) if h6<8 & !missing(h6)
gen poliov305 = inrange(h8,1,3) if h8<8 & !missing(h8)
gen poliov05 = .
replace poliov05 = 0 if poliov105==0 | poliov205==0 | poliov305==0
replace poliov05 = 1 if poliov105==1 & poliov205==1 & poliov305==1
label define poliov05 0 "No" 1 "Yes"
```

```
label values poliov05 poliov
```

Indicator 18: Rotavirus Vaccine [3 Doses]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<12 | age>23
*Age criteria - 180,726
********* FINAL ANALYTIC SAMPLE - 43,492
********* Indicator Construction - rotavirusvacc
gen rotavirus105 = inrange(h57,1,3) if h57<8 & !missing(h57)
gen rotavirus205 = inrange(h58,1,3) if h58<8 & !missing(h58)
gen rotavirus305 = inrange(h59,1,3) if h59<8 & !missing(h59)
gen rotavirus05 = .
replace rotavirus05 = 0 if rotavirus1==0 | rotavirus2==0 | rotavirus3==0
replace rotavirus05 = 1 if rotavirus1==1 & rotavirus2==1 & rotavirus3==1
label define rotavirus05 0 "No" 1 "Yes"
label values rotavirus05 rotavirus
```

Indicator 19: Vitamin A Dose

```
********* Age - 0-59 months [age]

gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<9 | age>35
drop if h34==.
drop if h34==8
*Age Criteria - 125,788
*Missing Observations - 0
*Flagged/Dont' know - 1,143
********* FINAL ANALYTIC SAMPLE - 97,287 CHILDREN aged 9-35 months
********* Indicator Construction - vitaminAdose
gen vitaminAdose05 = .
replace vitaminAdose05 = 1 if h34==1
replace vitaminAdose05 = 0 if h34==0
label define vitaminAdose05 0 "No" 1 "Yes"
label values vitaminAdose05 vitaminAdose
```

Indicator 20: Zero Dose [Child Immunization]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<12 | age>23
drop if h3==. | h5==. | h7==.
```

```
drop if h3==8 | h5==8 | h7==8
*Age Criteria - 180,726
*Missing Observations - 0
*Flagged/Dont' know - 115
********* FINAL ANALYTIC SAMPLE - 43,377 CHILDREN aged 12-23 months
********* Indicator Construction - dptv
gen dptv105 = inrange(h3,1,3) if h3<8 & !missing(h3)
gen dptv205 = inrange(h5,1,3) if h5<8 & !missing(h5)
gen dptv305 = inrange(h7,1,3) if h7<8 & !missing(h7)
gen zerodose05 = .
replace zerodose05 = 1 if dptv1==0
replace zerodose05 = 0 if dptv1==1
label define zerodose05 0 "No" 1 "Yes"
label values zerodose05 zerodose
```

Indicator 21: Antenatal Care Visit [Four or More]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
drop if m14==. | m14==98
*dropped birth index>1 - 51,792
*dropped mising/flagged/don't know observations - 2,319
********* FINAL ANALYTIC SAMPLE - 170,107 Mothers with most recent last birth
********* Indicator Construction - ancfourplus (ANC Visits - four or more)
gen ancfourplus05 = .
replace ancfourplus05 = 1 if m14>=4
replace ancfourplus05 = 0 if m14<4
label define ancfourplus05 1 "Yes" 0 "No"
label values ancfourplus05 ancfourplus05
```

Indicator 22: Antenatal Care Visit [First Trimester]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
*Dropped birth index>1 - 51,792
********* FINAL ANALYTIC SAMPLE - 172,426 Mothers with most recent last birth
********* Indicator Construction - anc1trimester (First ANC visit in 3 months)
gen anc1trimester05 = .
replace anc1trimester05 = 1 if m13<4
replace anc1trimester05 = 0 if m13>3
label define anc1trimester05 1 "Yes" 0 "No"
label values anc1trimester05 anc1trimester05
```

Indicator 23: Birth Registration

```
********* Sample Exclusion - Indicator-Specific Criteria
```

```
drop if hv105>=5
* Dropped population above 5 years - 2,606,140
********* FINAL ANALYTIC SAMPLE - 237,777 children age below 5 years
********* Indicator Construction - birthreg
gen birthreg05 =.
replace birthreg05 = 1 if (hv140==1 | hv140==2) & (hv102==1)
replace birthreg05 = 0 if (hv140==0 | hv140==8) & (hv102==1)
replace birthreg05 = 0 if (hv140==.) & (hv102==1)
label define birthreg05 1 "Yes" 2 "no"
label values birthreg05 birthre
```

Indicator 24: Birth Weight Recorded

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
*None
********* FINAL ANALYTIC SAMPLE -  224,218 alive children aged 0-59
********* Indicator Construction - bweightrec
gen bweightrec05 = .
replace bweightrec05 = 1 if m19a==1 | m19a==2
replace bweightrec05 = 0 if m19a==0 | m19a==8 | m19a==9
label define bweightrec05 1 "Yes" 0 "No"
label values bweightrec05 bweightrec05
```

Indicator 25: Caesarean Section Delivery

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if m17==.
*Dropped missing and flagged observartion - 0
********* FINAL ANALYTIC SAMPLE - 247743 alive births
********* Indicator Construction - csecdelivery - C-Section delivery   - Diarrhoea
gen csecdelivery05 = .
replace csecdelivery05 = 1 if m17==1
replace csecdelivery05 = 0 if m17==0
```

Indicator 26: Caesarean Section in Private Sector

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*8702 dropped
********* Sample Exclusion - Indicator-Specific Criteria
keep if m15==31 | m15==32
*176186 dropped
********* FINAL ANALYTIC SAMPLE - 48032
********* Indicator Construction - csecprivate
```

```
gen csecprivate05 = .
replace csecprivate05 = 1 if m17==1
replace csecprivate05 = 0 if m17==0
label define csecprivate05 1 "Yes" 0 "No"
label values csecprivate05 csecprivate05
```

Indicator 27: Caesarean Section in Public Sector

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
* 8702 deleted
********* Sample Exclusion - Indicator-Specific Criteria
keep if m15>20 & m15<28
* 79171 deleted
********* FINAL ANALYTIC SAMPLE - 145,047
********* Indicator Construction - csecpublic
gen csecpublic05 = .
replace csecpublic05 = 1 if m17==1
replace csecpublic05 = 0 if m17==0
label define csecpublic05 1 "Yes" 0 "No"
label values csecpublic05 csecpublic05
```

Indicator 28: Childbirths in Public Facility

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
* 8702 dropped
********* FINAL ANALYTIC SAMPLE - 224218
********* Indicator Construction - publicdel
gen publicdel05 = .
replace publicdel05 = 1 if m15>20 & m15<28
replace publicdel05 = 0 if m15>27
replace publicdel05 = 0 if m15<21
label define publicdel05 1 "Yes" 0 "No"
label values publicdel05 publicdel05
```

Indicator 29: Condom

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*dropped women not married currently - 211,707
********* FINAL ANALYTIC SAMPLE - 512,408 individual who are currently married
********* Indicator Construction - condom
gen condom05 = .
replace condom05 = 1 if v312==5
replace condom05 = 0 if v312~=5
label define condom05 1 "Yes" 0 "No"
label values condom05 condom
```

Indicator 30: Family Planning [Any Methods by Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
```

```
*dropped women not currently married - 211,707
********* FINAL ANALYTIC SAMPLE - 512,408 currently married women aged 15-49 years
********* Indicator Construction - anyfamplan
gen anyfamplan05 = .
replace anyfamplan05 = 1 if v312>0
replace anyfamplan05 = 0 if v312==0
label define anyfamplan05 1 "Yes" 0 "No"
label values anyfamplan05 anyfamplan05
```

Indicator 31: Family Planning [Modern]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*dropped women not currently married - 211,707
********* FINAL ANALYTIC SAMPLE - 512,408 currently married women aged 15-49 years
********* Indicator Construction - modernfamplan
gen modernfamplan05 = .
replace modernfamplan05 = 1 if v313==3
replace modernfamplan05 = 0 if v313==2 | v313==0
label define modernfamplan05 1 "Yes" 0 "No"
label values modernfamplan05 modernfamplan05
```

Indicator 32: Family Planning [Unmet Need]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*dropped women not married currently - 211,707
********* FINAL ANALYTIC SAMPLE - 512,408 currently married women aged 15-49 years
********* Indicator Construction - unmetfp
gen unmetfp05 = .
replace unmetfp05 = 1 if v626a==1 | v626a==2
replace unmetfp05 = 0 if v626a~=1 & v626a~=2
label define unmetfp05 1 "Yes" 0 "No"
label values unmetfp05 unmetfp05
```

Indicator 33: Family Planning Services Quality [Family Planning Counselling]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v312==0
*dropped family planning users - 261,258
********* FINAL ANALYTIC SAMPLE - 373,711 currently married women aged 15-49 years
********* Indicator Construction - famplancounsel
gen famplancounsel05 = .
replace famplancounsel05 = 1 if s356==1
replace famplancounsel05 = 0 if s356==0
replace famplancounsel05 = 0 if famplancounsel05==.
label define famplancounsel05 1 "Yes" 0 "No"
label values famplancounsel05 famplancounsel05
```

Indicator 34: Female Sterilization

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*dropped women not married currently - 211,707
********* FINAL ANALYTIC SAMPLE - 512,408 currently married women aged 15-49 years
********* Indicator Construction - femsteriliz
```

```
gen femsteriliz05 = .
replace femsteriliz05 = 1 if v312==6
replace femsteriliz05 = 0 if v312~=6
label define femsteriliz05 1 "Yes" 0 "No"
label values femsteriliz05 femsteriliz05
```

Indicator 35: Family Planning Services Quality [Side Effects Counselling]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v312==1 | v312==2 | v312==3 | v312==6
gen duration = v008-v317
keep if duration<60
*dropped non-users and others users - 487,888
*dropped duration more than 5 years - 167,152
********* FINAL ANALYTIC SAMPLE - 69,075 women aged 15-49 years
********* Indicator Construction – counsel side effects
gen counselsideffects05 = .
replace counselsideffects05 = 1 if v3a02==1 | v3a03==1
replace counselsideffects05 = 0 if v3a02==0 & v3a03==0
replace counselsideffects05 = 0 if v3a02==.
label define counselsideffects05 1 "Yes" 0 "No"
label values counselsideffects05 counselsideffects05
```

Indicator 36: Home Delivery by Skilled Health Personnel

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion
*drop if m15>13
drop if b5==0
********* Sample Exclusion -
********* FINAL ANALYTIC SAMPLE
********* Indicator Construction - birthattskill
gen homebirthskill = .
replace homebirthskill = 1 if (m3a==1 | m3b==1 | m3c==1) & m15<14
replace homebirthskill = 0 if homebirthskill~=1
label define homebirthskill 0 "No" 1 "Yes"
label values homebirthskill homebirthattskill
```

Indicator 37: Injectables

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*dropped women not married currently - 211,707
********* FINAL ANALYTIC SAMPLE - 512,408 individual who are currently married
********* Indicator Construction - injectables
gen injectables05 = .
replace injectables05 = 1 if v312==3
replace injectables05 = 0 if v312~=3
label define injectables05 1 "Yes" 0 "No"
label values injectables05 injectables
```

Indicator 38: Institutional Childbirth

```
********* Age - 0-59 months [age]
gen age = v008-b3
```

```
********* Sample Exclusion - Common Criteria
*drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if m15==.
* Missing values for place of delivery = 0
********* FINAL ANALYTIC SAMPLE - 232920 alive children aged 0-59 months
********* Indicator Construction - Institutional Childbirth
replace m15 = 0 if m15==96
gen instbirth05 =.
replace instbirth05 = 1 if m15>20
replace instbirth05 = 0 if m15<14
label define instbirth05 1 "Yes" 0 "No"
label values instbirth05 instbirth05
```

Indicator 39: Iron Folic Acid [100 days or More]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
*dropped obsevtaions birth index>1 - 51,792
********* FINAL ANALYTIC SAMPLE - 172,426 Mothers with most recent last birth
********* Indicator Construction - ifa100 (IFA Supplementation 100 days or more)
gen ifa = .
replace ifa = 0 if m46==0 | m45==0
replace ifa = 1 if m46 > 0 & m46 < 100
replace ifa = 2 if m46 >= 100 & m46 < 301
replace ifa = 3 if m46==998
gen ifa10005 = .
replace ifa10005 = 1 if ifa==2
replace ifa10005 = 0 if ifa==0 | ifa==1 | ifa==3
replace ifa10005 = 0 if ifa10005==.
label define ifa10005 1 "Yes" 0 "No"
label values ifa10005 ifa10005
```

Indicator 40: Iron Folic Acid [180 days or More]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
*dropped obsevtaions birth index>1 - 51,792
********* FINAL ANALYTIC SAMPLE - 172,426 Mothers with most recent last birth
********* Indicator Construction - ifa180 (IFA Supplementation 180 days or more)
gen ifa = .
replace ifa = 0 if m46==0 | m45==0
replace ifa = 1 if m46 > 0 & m46 < 100
```

```
replace ifa = 2 if m46 >= 100 & m46 < 179
replace ifa = 3 if m46 >= 180 & m46<301
replace ifa = 4 if m46==998
gen ifa18005 = .
replace ifa18005 = 1 if ifa==3
replace ifa18005 = 0 if ifa==0 | ifa==1 | ifa==4 | ifa==2
replace ifa18005 = 0 if ifa18005==.
label define ifa18005 1 "Yes" 0 "No"
label values ifa18005 ifa18005
```

Indicator 41: IUD/PPIUD

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*dropped women not married currently - 211,707
********* FINAL ANALYTIC SAMPLE - 512,408 individual who are currently married
********* Indicator Construction - iud
gen iud05 = .
replace iud05 = 1 if v312==2
replace iud05 = 0 if v312~=2
label define iud05 1 "Yes" 0 "No"
label values iud05 iud
```

Indicator 42: Male Sterilization

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*Dropped women not married currently - 211,707
********* FINAL ANALYTIC SAMPLE - 512,408 individual who are currently married
********* Indicator Construction - male sterilization
gen malesterilization05 = .
replace malesterilization05 = 1 if v312==7
replace malesterilization05 = 0 if v312~=7
label define malesterilization05 1 "Yes" 0 "No"
label values malesterilization05 malesterilization
```

Indicator 43: Maternal Care Quality [Postpartum]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
drop if s361==0
*dropped birth index >1 - 51,792
*drop if women did not met CHW in last 3 months - 78,250
********* FINAL ANALYTIC SAMPLE - 94,176 Mothers with most recent births who met CHW in
last 3 months
gen matqcons05 = .
replace matqcons05 = 1 if s440a==1 | s440b==1 | s440c==1 | s440d==1 | s440e==1
replace matqcons05 = 0 if s440a==0 & s440b==0 & s440c==0 & s440d==0 & s440e==0
label define matqcons05 1 "Yes" 0 "No"
label values matqcons05 matqcons
```

Indicator 44: Mother and Child Protection Card

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
*drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
drop if s410==0
*dropped birth index>1 - 56077
*dropped pregnancy not registered - 10902
********* FINAL ANALYTIC SAMPLE - 165941 alive CHILDREN aged 0-59 months
********* Indicator Construction - mcpcard - mothers who receive mcp card for their last
(most recent) registered pregnancy
gen mcpcard05 = .
replace mcpcard05 = 1 if s413==1
replace mcpcard05 = 0 if s413==0
label define mcpcard05 1 "Yes" 0 "No"
label values mcpcard05 mcpcard05
```

Indicator 45: Neonatal Tetanus

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
drop if m1==8 | m1a==8 | m1d==98
*dropped birth index>1 - 51,792
*Missed Flagged/Don't Know Observations - 2,935
********* FINAL ANALYTIC SAMPLE - 169,491 a mothers with with youngest last birth
********* Indicator Construction - nntltetanus - Mothers last birth protected with
Neonatal Tetanus
replace m1 = 0 if m1==.
replace m1a = 0 if m1a==.
gen tottetanus05 = .
replace tottetanus05 = m1 + m1a
gen lastinjec05 = 99
replace lastinjec05 = 0 if m1>0 & m1<8
replace lastinjec05 = (m1d-(age/12)) if (m1d>0 & m1d<41)
gen nntltetanus05 = .
replace nntltetanus05 = 1 if m1>1
replace nntltetanus05 = 1 if tottetanus>=2 & lastinjec<3
replace nntltetanus05 = 1 if tottetanus>=3 & lastinjec<5
replace nntltetanus05 = 1 if tottetanus>=4 & lastinjec<10
replace nntltetanus05 = 1 if tottetanus>=5
replace nntltetanus05 = 0 if nntltetanus~=1
replace nntltetanus05 = 0 if nntltetanus==.
label define nntltetanus05 1 "Yes" 0 "No"
label values nntltetanus05 nntltetanus
```

Indicator 46: Pill

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*dropped women not married currently - 211,707
********* FINAL ANALYTIC SAMPLE
********* Indicator Construction - pill
gen pill05 = .
replace pill05 = 1 if v312==1
replace pill05 = 0 if v312~=1
label define pill05 1 "Yes" 0 "No"
label values pill05 pill
```

Indicator 47: Postnatal Care [Mothers]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 11884
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1

*dropped index>1 = 62642
********* FINAL ANALYTIC SAMPLE - 185101 most recent live births in last five years
********* Indicator Construction - sbahomebirths
gen pstntlmothers05 = .
replace pstntlmothers05 = 0 if m50==0
replace pstntlmothers05 = 1 if m66==1 & m51<=202 & (m52==11 | m52==12 | m52==13)
replace pstntlmothers05 = 0 if m66==1 & m51>202
replace pstntlmothers05 = 0 if m66==1 & m51<=202 & (m52==21 | m52==22 | m52==96)
replace pstntlmothers05 = 1 if m62==1 & s460<=202 & (s461==11 | s461==12 | s461==13)
replace pstntlmothers05 = 0 if m66==1 & m51>202
replace pstntlmothers05 = 0 if m66==1 & m51<=202 & (s461==21 | s461==22 | s461==96)
replace pstntlmothers05 = 0 if pstntlmothers05==.
label define pstntlmothers05 1 "Yes" 0 "No"
label values pstntlmothers05 pstntlmothers
```

Indicator 49: Pregnancy Registration

```
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
*dropped obsevtaions birth index>1 - 51,792
********* FINAL ANALYTIC SAMPLE - 172,426 Mothers with most recent last birth
********* Indicator Construction - preregistered
gen pregregistered05 = .
replace pregregistered05 = 1 if s410==1
replace pregregistered05 = 0 if s410==0
label define pregregistered05 1 "Yes" 0 "No"
label values pregregistered05 pregregistered05
```

Indicator 50: Skilled Birth Attendance

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if m3a==. | m3b==. | m3c==. | m3g==. | m3h==. | m3k==. | m3n==.
*Dropped institutional deliveries - ********
*Dropped missing observations - 0
********* FINAL ANALYTIC SAMPLE - 224,218 live births
********* Indicator Construction - sbahomebirths
gen sbahomebirths05 = .
replace sbahomebirths05 = 1 if m3a==1 | m3b==1 | m3c==1
replace sbahomebirths05 = 0 if m3a==0 & m3b==0 & m3c==0
label define sbahomebirths05 1 "Yes" 0 "No"
label values sbahomebirths05 sbahomebirths
```

Indicator 51: Unmet Need for Spacing

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
*dropped women not married currently -
********* FINAL ANALYTIC SAMPLE - 499627 currently married women aged 15-49 years
********* Indicator Construction - unmetspacing
gen unmetspacing = .
replace unmetspacing = 1 if v626a==1
replace unmetspacing = 0 if v626a~=1
label define unmetspacing 1 "Yes" 0 "No"
label values unmetspacing unmetspacing
```

Indicator 52: Diarrhoea [Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if h11==.
drop if h11==8
*Dropped missing and flagged observartion - 433
********* FINAL ANALYTIC SAMPLE - 223,785 alive children 0-59 months
********* Indicator Construction - diarrhoea - Diarrhoea
gen diarrhoea05 = .
replace diarrhoea05 = 1 if h11==2
replace diarrhoea05 = 0 if h11==0
```

Indicator 53: Elevated Blood Pressure or On Medication [Men]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh10a==1
drop if shb25s==. | shb29s==. | shb25d==. | shb29d==.
drop if shb25s==994 | shb29s==994 | shb25d==994 | shb29d==994
drop if shb25s==995 | shb29s==995 | shb25d==995 | shb29d==995
drop if shb25s==996 | shb29s==996 | shb25d==996 | shb29d==996
********* FINAL ANALYTIC SAMPLE -
```

```
********* Indicator Construction – blood pressure men
gen avgsystolic = (shb25s + shb29s)/2
gen avgdiastolic = (shb25d + shb29d)/2
gen bloodpressuremen = .
replace bloodpressuremen = 1 if avgsystolic>=140 | avgdiastolic>=90 |  shb21==1
replace bloodpressuremen = 0 if avgsystolic<140 & avgdiastolic<90 & shb21==0
label define bloodpressuremen 1 "Yes" 0 "No"
label values bloodpressuremen bloodpressuremen
```

Indicator 54: Elevated Blood Pressure or On Medication [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh09a==1
drop if shb25s==. | shb29s==. | shb25d==. | shb29d==.
drop if shb25s==994 | shb29s==994 | shb25d==994 | shb29d==994
drop if shb25s==995 | shb29s==995 | shb25d==995 | shb29d==995
drop if shb25s==996 | shb29s==996 | shb25d==996 | shb29d==996
********* FINAL ANALYTIC SAMPLE -
********* Indicator Construction - bloodpressurewomen
gen avgsystolic = (shb25s + shb29s)/2
gen avgdiastolic = (shb25d + shb29d)/2
gen bloodpressurewomen = .
replace bloodpressurewomen = 1 if avgsystolic>=140 | avgdiastolic>=90 |  shb21==1
replace bloodpressurewomen = 0 if avgsystolic<140 & avgdiastolic<90 & shb21==0
label define bloodpressurewomen 1 "Yes" 0 "No"
label values bloodpressurewomen bloodpressurewomen
```

Indicator 55: High Blood Sugar [Men]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh10a==1
* dropped non eligible - 1,853,443
drop if shb74==.
drop if shb74==995 | shb74==996 | shb74==998
* dropped missing observations - 135,046
* dropped flagged - 19,207
********* FINAL ANALYTIC SAMPLE - 836,221 Men aged 15 and above years
********* Indicator Construction - high blood sugar
gen highbloodsugarm05 = .
replace highbloodsugarm05 = 1 if shb74>140 & shb74<160
replace highbloodsugarm05 = 0 if shb74>=160
replace highbloodsugarm05 = 0 if shb74<=140
label define highbloodsugarm05 1 "Yes" 0 "No"
label values highbloodsugarm05 highbloodsugarm05
```

Indicator 56: High Blood Sugar [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if sb74==.
drop if sb74==995 | sb74==996 | sb74==998
*dropped missing observations - 21,623
*dropped flagged observations - 11,744
********* FINAL ANALYTIC SAMPLE - 690,748 women aged 15-49 years
********* Indicator Construction - high blood sugar
gen highbloodsugar05 = .
replace highbloodsugar05 = 1 if sb74>140
```

```
replace highbloodsugar05 = 0 if sb74<=140
label define highbloodsugar05 1 "Yes" 0 "No"
label values highbloodsugar05 highbloodsugar05
```

Indicator 57: High or Very High Blood Sugar or On Medication [Men]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh10a==1
* dropped non eligible - 1,853,443
drop if shb74==.
drop if shb74==995 | shb74==996 | shb74==998
* dropped missing observations - 135,046
* dropped flagged - 19,207
********* FINAL ANALYTIC SAMPLE - 836,221 Men aged 15 and above year
********* Indicator Construction – high blood sugar on medicine men
gen highbsugarmedsm05 = .
replace highbsugarmedsm05 = 1 if shb74>140 | shb57==1
replace highbsugarmedsm05 = 0 if shb74<=140 & shb57==0
label define highbsugarmedsm05 1 "Yes" 0 "No"
label values highbsugarmedsm05 highbsugarmedsm05
```

Indicator 58: High or Very High Blood Sugar or On Medication [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh09a==1
* dropped non eligible - 1,802,274
drop if shb74==.
drop if shb74==995 | shb74==996 | shb74==998
* dropped missing observations - 65,460
* dropped flagged - 21,377
********* FINAL ANALYTIC SAMPLE - 954,806 Women aged 15 and above years
********* Indicator Construction – high blood sugar medicine women
gen highbsugarmedswom05 = .
replace highbsugarmedswom05 = 1 if shb74>140 | shb57==1
replace highbsugarmedswom05 = 0 if shb74<=140 & shb57==0
label define highbsugarmedswom05 1 "Yes" 0 "No"
label values highbsugarmedswom05 highbsugarmedswom05
```

Indicator 59: Mildly Elevated Blood Pressure [Men]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh10a==1
* dropped not eligible - 1,853,443
drop if shb25s==. | shb29s==. | shb25d==. | shb29d==.
drop if shb25s==994 | shb29s==994 | shb25d==994 | shb29d==994
drop if shb25s==995 | shb29s==995 | shb25d==995 | shb29d==995
drop if shb25s==996 | shb29s==996 | shb25d==996 | shb29d==996
* dropped missing observations - 206,377
* dropped flagged - 0
********* FINAL ANALYTIC SAMPLE - 784,097 Men aged 15 and above years
********* Indicator Construction – mild high bp men
gen avgsystolic05 = (shb25s + shb29s)/2
gen avgdiastolic05 = (shb25d + shb29d)/2
```

```
gen mildhighbpmen05 = .
replace mildhighbpmen05 = 1 if (avgsystolic05>140 & avgsystolic05<159) | (avgdiastolic05>90 & avgdiastolic05<99)
replace mildhighbpmen05 = 0 if (avgsystolic05<=140 | avgsystolic05>=159) & (avgdiastolic05<=90 | avgdiastolic05>=99)
label define mildhighbpmen05 1 "Yes" 0 "No"
label values mildhighbpmen05 mildhighbpmen05
```

Indicator 60: Mildly Elevated Blood Pressure [Women]

```
******* Sample Exclusion - Indicator-Specific Criteria
drop if sb18s==. | sb25s==. | sb29s==. | sb18d==. | sb25d==. | sb29d==.
drop if sb18s==994 | sb25s==994 | sb29s==994 | sb18d==994 | sb25d==994 | sb29d==994
drop if sb18s==995 | sb25s==995 | sb29s==995 | sb18d==995 | sb25d==995 | sb29d==995
drop if sb18s==996 | sb25s==996 | sb29s==996 | sb18d==996 | sb25d==996 | sb29d==996
*Dropped missing observations - 72,305 observations deleted
*Dropped flagged observations - 0
********* FINAL ANALYTIC SAMPLE - 651,810 women aged 15-49 years
********* Indicator Construction – mild high bp women
gen avgsystolic = (sb25s + sb29s)/2
gen avgdiastolic = (sb25d + sb29d)/2
gen mildhighbpwom05 = .
replace mildhighbpwom05 = 1 if (avgsystolic>140 & avgsystolic<159) | (avgdiastolic>90 & avgdiastolic<99)
replace mildhighbpwom05 = 0 if (avgsystolic<=140 | avgsystolic>=159) & (avgdiastolic<=90 | avgdiastolic>=99)
label define mildhighbpwom05 1 "Yes" 0 "No"
label values mildhighbpwom05 mildhighbpwom05
```

Indicator 61: Moderate or Severe Blood Pressure [Men]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh10a==1
* dropped not eligible - 1,802,274
drop if shb18s==. | shb25s==. | shb29s==. | shb18d==. | shb25d==. | shb29d==.
drop if shb18s==994 | shb25s==994 | shb29s==994 | shb18d==994 | shb25d==994 | shb29d==994
drop if shb18s==995 | shb25s==995 | shb29s==995 | shb18d==995 | shb25d==995 | shb29d==995
drop if shb18s==996 | shb25s==996 | shb29s==996 | shb18d==996 | shb25d==996 | shb29d==996
********* FINAL ANALYTIC SAMPLE -
********* Indicator Construction - sevhighbpwom
gen avgsystolic05 = (shb25s + shb29s)/2
gen avgdiastolic05 = (shb25d + shb29d)/2
gen modsevhighbpmen05 = .
replace modsevhighbpmen05 = 1 if (avgsystolic05>=160) | (avgdiastolic05>=100)
replace modsevhighbpmen05 = 0 if (avgsystolic05<160) & (avgdiastolic05<100)
label define modsevhighbpmen05 1 "Yes" 0 "No"
label values modsevhighbpmen05 modsevhighbpmen05
```

Indicator 62: Moderate or Severe Blood Pressure [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh09a==1
* Dropped not eligible - 1,802,274
drop if shb18s==. | shb25s==. | shb29s==. | shb18d==. | shb25d==. | shb29d==.
drop if shb18s==994 | shb25s==994 | shb29s==994 | shb18d==994 | shb25d==994 | shb29d==994
drop if shb18s==995 | shb25s==995 | shb29s==995 | shb18d==995 | shb25d==995 | shb29d==995
```

```
drop if shb18s==996 | shb25s==996 | shb29s==996 | shb18d==996 | shb25d==996 | shb29d==996
* Dropped missing observations - 129,290
* Dropped flagged - 0
********* FINAL ANALYTIC SAMPLE - 912,353 Women aged 15 and above years
********* Indicator Construction – severe high bp women
gen avgsystolic05 = (shb25s + shb29s)/2
gen avgdiastolic05 = (shb25d + shb29d)/2
gen sevhighbpwom05 = .
replace sevhighbpwom05 = 1 if (avgsystolic05>=160) | (avgdiastolic05>=100)
replace sevhighbpwom05 = 0 if (avgsystolic05<160) & (avgdiastolic05<100)
label define sevhighbpwom05 1 "Yes" 0 "No"
label values sevhighbpwom05 sevhighbpwom05
```

Indicator 63: Probability of Dying before Five Years

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* FINAL ANALYTIC SAMPLE - 232920 births in last five years
********* Indicator Construction - probdie5
gen probdie505 = .
replace probdie505 = 1 if b5==0
replace probdie505 = 0 if b5==1
label define probdie505 1 "Yes" 0 "No"
label values probdie505 probdie505
```

Indicator 64: Probability of Dying before One Year

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* FINAL ANALYTIC SAMPLE - 232920 births in last five years
********* Indicator Construction - probdie1
gen probdie105 = .
replace probdie105 = 1 if b5==0 & b7<12
replace probdie105 = 0 if b5==0 & b7>11
replace probdie105 = 0 if b5==1
label define probdie105 1 "Yes" 0 "No"
label values probdie105 probdie105
```

Indicator 65: Probability of Dying within 28 Days

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* FINAL ANALYTIC SAMPLE - 232,920 births in last five years
********* Indicator Construction - probdie28
gen probdie2805 = .
replace probdie2805 = 1 if b5==0 & b6<128
replace probdie2805 = 0 if b5==0 & b6>127
replace probdie2805 = 0 if b5==1
label define probdie2805 1 "Yes" 0 "No"
label values probdie2805 probdie2805
```

Indicator 66: Risky Waist-to-hip Ratio [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v213==0
* dropped pregnant women - 28,408
gen age = v008-b3_01
```

```
keep if age>2
* dropped - 9,772
********* FINAL ANALYTIC SAMPLE - 685,935 Women
********* Indicator Construction - Risky Waist to Hip Ratio
gen waisthipratio05 = s305/s306
gen riskwaisthip05 = .
replace riskwaisthip05 = 1 if waisthipratio05>=0.85
replace riskwaisthip05 = 0 if waisthipratio05<0.85
label define riskwaisthip05 1 "Yes" 0 "No"
label values riskwaisthip05 riskwaisthip05
```

Indicator 67: Very High Blood Sugar [Men]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh10a==1
* dropped not eligible - 1,853,443
drop if shb74==.
drop if shb74==995 | shb74==996 | shb74==998
* dropped missing observations - 135,046
* dropped flagged - 19,207
********* FINAL ANALYTIC SAMPLE - 836,221 Men aged 15 and above years
********* Indicator Construction – very high blood sugar men
gen vhighbloodsugarm05 = .
replace vhighbloodsugarm05 = 1 if shb74>160
replace vhighbloodsugarm05 = 0 if shb74<=160
replace vhighbloodsugarm05 = 0 if shb74==995 | shb74==996 | shb74==998
label define vhighbloodsugarm05 1 "Yes" 0 "No"
label values vhighbloodsugarm05 vhighbloodsugarm05
```

Indicator 68: Very High Blood Sugar [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if sb74==.
drop if sb74==995 | sb74==996 | sb74==998
*dropped missing observations - 21,623
*dropped flagged observations - 11,744
********* FINAL ANALYTIC SAMPLE - 690,748 women aged 15-49 years
********* Indicator Construction – very high blood sugar
gen vhighbloodsugar05 = .
replace vhighbloodsugar05 = 1 if sb74>160
replace vhighbloodsugar05 = 0 if sb74<=160
label define vhighbloodsugar05 1 "Yes" 0 "No"
label values vhighbloodsugar05 vhighbloodsugar05
```

Indicator 69: Anaemia [Any - Adolescent Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v012>19
drop if v456==.
*Dropped age above 19 years - 601,635
*Dropped mssing observations on hemoglobin - 0
********* FINAL ANALYTIC SAMPLE - 122,480 Women aged 15-19 years
********* Indicator Construction – any anemia adolescent
gen hb = .
replace hb = v456 / 10
gen anyanemiaadol05 = .
```

```
replace anyanemiaadol05 = 1 if hb < 11 & v213==1
replace anyanemiaadol05 = 1 if hb < 12 & v213==0
replace anyanemiaadol05 = 0 if hb >= 11 & v213==1
replace anyanemiaadol05 = 0 if hb >= 12 & v213==0
label define anyanemiaadol05 1 "Yes" 0 "No"
label values anyanemiaadol05 anyanemiaadol05
```

Indicator 70: Anaemia [Any - All Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v456==.
*dropped missing observations on hemoglobin - 0
********* FINAL ANALYTIC SAMPLE - 724,115 Women 15-49 years
********* Indicator Construction – any anemia
gen hb = .
replace hb = v456 / 10
gen anyanemia05 = .
replace anyanemia05 = 1 if hb < 11 & v213==1
replace anyanemia05 = 1 if hb < 12 & v213==0
replace anyanemia05 = 0 if hb >= 11 & v213==1
replace anyanemia05 = 0 if hb >= 12 & v213==0
label define anyanemia05 1 "Yes" 0 "No"
label values anyanemia05 anyanemia05
```

Indicator 71: Anaemia [Any - Pregnant Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v213==0
drop if v456==.
*Dropped non-pregnant women - 695,707
*Dropped missing observations on hemoglobin - 0
********* FINAL ANALYTIC SAMPLE - 28,408 pregnant Women
********* Indicator Construction – any anemia pregnant
gen hb = .
replace hb = v456 / 10
gen anyanemiapreg05 = .
replace anyanemiapreg05 = 1 if hb < 11
replace anyanemiapreg05 = 0 if hb >= 11
label define anyanemiapreg05 1 "Yes" 0 "No"
label values anyanemiapreg05 anyanemiapreg05
```

Indicator 72: Child Anaemia [Any]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if age<6
drop if hw56==.
drop if hw56==994 | hw56==995 | hw56==996
*Dropped children below 6 months - 22087
*Dropped missing and flagged observartion - 26953
********* FINAL ANALYTIC SAMPLE - 183,880 children 6-59 months
********* Indicator Construction - any anemia - Any Anemia
gen anyanemia05 = .
replace anyanemia05 = 1 if hw56<110
replace anyanemia05 = 0 if hw56>=110
```

Indicator 73: Child Stunting

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if hw3==.
drop if hw70==.
drop if hw3==9994 | hw3==9995 | hw3==9996
drop if hw70 > 600
*Missing Height Observations-6654
*Missing Height/Age SD-6475
*Flagged Observations-66
*Outliers Height/Age SD-4998
********* FINAL ANALYTIC SAMPLE - 206025 CHILDREN aged 0-59 months
********* Indicator Construction - Stunting
gen stunting05 = .
replace stunting05 = 1 if hw70 >= -600 & hw70 < -200
replace stunting05 = 0 if hw70 >= -200 & hw70 <= 600
label define stunting05 1 "Yes" 0 "No"
label values stunting05 stunting05
```

Indicator 74: Child Underweight

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if hw2==.
drop if hw71==.
drop if hw2==9994 | hw2==9995 | hw2==9996
drop if hw71 > 600
*Missing Weight Observations-6179
*Missing Weight/Age SD-6355
*Flagged Observations-0
*Outliers weight/Age SD-1160
********* FINAL ANALYTIC SAMPLE - 210524 CHILDREN aged 0-59 months

********* Indicator Construction - Child underweight
gen underweight05 = .
replace underweight05 = 1 if hw71>= -600 & hw71< -200
replace underweight05 = 0 if hw71>= -200 & hw71< 600
label define underweight05 1 "Yes" 0 "No"
label values underweight05 underweight05
```

Indicator 75: Child Wasting

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if hw2==.
drop if hw3==.
drop if hw72==.
```

```
drop if hw2==9994 | hw2==9995 | hw2==9996
drop if hw3==9994 | hw3==9995 | hw3==9996
drop if hw72 > 600
*Missing weight Observations-6179
*Missing Height Observations-480
*Missing weight/height SD-3462
*Flagged Observations- 2953+14=2967
*Outliers weight/Age SD-9443
********* FINAL ANALYTIC SAMPLE - 201687 CHILDREN aged 0-59 months
********* Indicator Construction - wasting
gen wasting05 = .
replace wasting05 = 1 if hw72>= -600 & hw72< -200
replace wasting05 = 0 if hw72>= -200 & hw72< 600
label define wasting05 1 "Yes" 0 "No"
label values wasting05 wasting05
```

Indicator 76: Mild Anaemia [Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<6
drop if age==.
drop if hw56==.
drop if hw56==9994 | hw56==995 | hw56==9996
*dropped Age Criteria - 21325
*Missing Observations - 19013
*Flagged/Dont' know - 0
********* FINAL ANALYTIC SAMPLE - 209495 CHILDREN aged 6-59 months
********* Indicator Construction - mild anemia
gen mildanemiak05 = .
replace mildanemiak05 = 1 if hw53 < 110 & hw53 >= 100
replace mildanemiak05 = 0 if hw53 >= 110 | hw53 < 100
replace mildanemiak05 = . if hw53==.
replace mildanemiak05 = . if hw53==994 | hw53==995 | hw53==996
```

Indicator 77: Mild Anaemia [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v456==.
*dropped mssing observations on hemoglobin - 0
********* FINAL ANALYTIC SAMPLE - 724,115 Women aged 15-49 years
********* Indicator Construction – mild anaemia
gen hb = .
replace hb = v456 / 10
gen mildanaemia05 = .
replace mildanaemia05 = 0 if hb < 11
replace mildanaemia05 = 1 if (hb >= 10 & hb < 11) & v213==1
replace mildanaemia05 = 1 if (hb >= 11 & hb < 12) & v213==0
replace mildanaemia05 = 0 if hb >= 11 & v213==1
replace mildanaemia05 = 0 if hb >= 12 & v213==0
```

```
label define mildanaemia05 1 "Yes" 0 "No"
label values mildanaemia05 mildanaemia05
```

Indicator 78: Moderate Anaemia [Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<6
drop if age==.
drop if hw56==.
drop if hw56==9994 | hw56==995 | hw56==9996
*Dropped Age Criteria - 21325
*Missing Observations - 19013
*Flagged/Dont' know - 0
********* FINAL ANALYTIC SAMPLE - 209495 CHILDREN aged 6-59 months
********* Indicator Construction – moderate anemia
gen modanemiak05 = .
replace modanemiak05 = 1 if hw53 < 100 & hw53 >= 70
replace modanemiak05 = 0 if hw53 >= 100 | hw53 < 70
replace modanemiak05 = . if hw53==.
replace modanemiak05 = . if hw53==994 | hw53==995 | hw53==996
```

Indicator 79: Moderate Anaemia [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v456==.
*dropped mssing observations on hemoglobin - 0
********* FINAL ANALYTIC SAMPLE - 724,115 Women aged 15-49 years
********* Indicator Construction – moderate anaemia
gen hb = .
replace hb = v456 / 10

gen modanaemia05 = .
replace modanaemia05 = 1 if (hb >= 7 & hb < 10) & v213==1
replace modanaemia05 = 1 if (hb >= 8 & hb < 11) & v213==0
replace modanaemia05 = 0 if hb >= 10 & v213==1
replace modanaemia05 = 0 if hb >= 11 & v213==0
label define modanaemia05 1 "Yes" 0 "No"
label values modanaemia05 modanaemia05
```

Indicator 80: Overweight Children

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if hw2==.
drop if hw72==.
drop if hw2==9994 | hw2==9995 | hw2==9996
drop if hw72 > 600
```

```
*Missing Weight Observations - 6,179
*Missing Weight/Age SD - 3,508
*Flagged Observations - 3,387
*Outliers weight/Age SD - 9,457
********* FINAL ANALYTIC SAMPLE - 201,687
********* Indicator Construction - Overweight
gen overweight05 = .
replace overweight05 = 1 if hw72<= +600 & hw72> +200
replace overweight05 = 0 if hw72< +200 & hw72>= -600
label define overweight05 1 "Yes" 0 "No"
label values overweight05 overweight05
```

Indicator 81: Overweight or Obese [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v213==1
drop if v445==.
*dropped pregnant women - 28,408
*dropped missing observations on bmi - 23,190
********* FINAL ANALYTIC SAMPLE - 672,517 non-pregnant women aged 15-49 years
********* Indicator Construction - overweightwom
gen bmi=v445/100
replace bmi=. if bmi > 60
gen wombmi=.
replace wombmi = 1 if bmi < 17 & bmi~=.
replace wombmi = 2 if bmi >= 17 & bmi < 18.5
replace wombmi = 3 if bmi >= 18.5 & bmi < 25.0
replace wombmi = 4 if bmi >= 25 & bmi < 30
replace wombmi = 5 if bmi >= 30 & bmi~=.
gen overweightwom05 = .
replace overweightwom05 = 1 if wombmi==4 | wombmi==5
replace overweightwom05 = 0 if wombmi==1 | wombmi==2 | wombmi==3
label define overweightwom05 1 "Yes" 0 "No"
label values overweightwom05 overweightwom05
```

Indicator 82: Severe Anaemia [Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<6
drop if age==.
drop if hw56==.
drop if hw56==9994 | hw56==995 | hw56==9996
*dropped Age Criteria - 21325
*Missing Observations - 19,013
*Flagged/Dont' know - 0
********* FINAL ANALYTIC SAMPLE - 183,880 CHILDREN aged 6-59 months
********* Indicator Construction - sevanemiak
gen sevanaemiak05 = .
replace sevanaemiak05 = 1 if hw53 < 70
```

```
replace sevanaemiak05 = 0 if hw53 >= 70
replace sevanaemiak05 = . if hw53==.
replace sevanaemiak05 = . if hw53==994 | hw53==995 | hw53==996
```

Indicator 83: Severe Anaemia [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v456==.
*dropped missing observations on hemoglobin - 0
********* FINAL ANALYTIC SAMPLE - 724,115 Women aged 15-49 years
********* Indicator Construction – severe anaemia
gen hb = .
replace hb = v456 / 10
gen sevanaemia05 = .
replace sevanaemia05 = 1 if hb < 7  & v213==1
replace sevanaemia05 = 1 if hb < 8  & v213==0
replace sevanaemia05 = 0 if hb >= 7 & v213==1
replace sevanaemia05 = 0 if hb >= 8 & v213==0
label define sevanaemia05 1 "Yes" 0 "No"
label values sevanaemia05 sevanaemia05
```

Indicator 84: Severe Stunting [Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if hw3==.
drop if hw70==.
drop if hw3==9994 | hw3==9995 | hw3==9996
drop if hw70 > 600

*Missing Height Observations-6654
*Missing Height/Age SD-6475
*Flagged Observations-66
*Outliers Height/Age SD-4998
********* FINAL ANALYTIC SAMPLE - 206,025 CHILDREN aged 0-59 months
********* Indicator Construction - Severe Stunting
gen severestunting05 = .
replace severestunting05 = 1 if hw70 >= -600 & hw70 < -300
replace severestunting05 = 0 if hw70 >= -300 & hw70 < 600
label define severestunting05 1 "Yes" 0 "No"
label values severestunting05 severestunting05
```

Indicator 85: Severe Underweight [Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if hw2==.
drop if hw71==.
```

```
drop if hw2==9994 | hw2==9995 | hw2==9996
drop if hw71 > 600
*Missing Weight Observations-6179
*Missing Weight/Age SD-6335
*Flagged Observations-0
*Outliers weight/Age SD-1160
********* FINAL ANALYTIC SAMPLE - 210524 CHILDREN aged 0-59 months
********* Indicator Construction - Severe underweight
gen severeunderweight05 = .
replace severeunderweight05 = 1 if hw71>= -600 & hw71< -300
replace severeunderweight05 = 0 if hw71>= -300 & hw71< 600
label define severeunderweight05 1 "Yes" 0 "No"
label values severeunderweight05 severeunderweight05
```

Indicator 86: Severe Wasting [Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8702
********* Sample Exclusion - Indicator-Specific Criteria
drop if hw2==.
drop if hw3==.
drop if hw72==.
drop if hw2==9994 | hw2==9995 | hw2==9996
drop if hw3==9994 | hw3==9995 | hw3==9996
drop if hw72 > 600
*Missing weight Observations-6179
*Missing Height Observations-480
*Missing weight/height SD-3462
*Flagged Observations-14
*Outliers weight/Age SD-9443
********* FINAL ANALYTIC SAMPLE - 201,687 CHILDREN aged 0-59 months
********* Indicator Construction - Severe Wasting
gen severewasting05 = .
replace severewasting05 = 1 if hw72>= -600 & hw72< -300
replace severewasting05 = 0 if hw72>= -300 & hw72< 600
label define severewasting05 1 "Yes" 0 "No"
label values severewasting05 severewasting05
```

Indicator 87: Underweight [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v213==1
drop if v445==.
*Dropped pregnant women - 28,408
*Dropped missing observations on bmi - 23,190
********* FINAL ANALYTIC SAMPLE - 672,517 non-pregnant women aged 15-49 years
********* Indicator Construction – underweight women
gen bmi=v445/100
replace bmi=. if bmi > 60
gen wombmi=.
replace wombmi = 1 if bmi < 17 & bmi~=.
```

```
replace wombmi = 2 if bmi >= 17 & bmi < 18.5
replace wombmi = 3 if bmi >= 18.5 & bmi < 25.0
replace wombmi = 4 if bmi >= 25 & bmi < 30
replace wombmi = 5 if bmi >= 30 & bmi~=.
gen underweightwom05 = .
replace underweightwom05 = 1 if wombmi==1 | wombmi==2
replace underweightwom05 = 0 if wombmi==3 | wombmi==4 | wombmi==5
label define underweightwom05 1 "Yes" 0 "No"
label values underweightwom05 underweightwom05
```

Indicator 88: Adequate Diet [Breastfed Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<6 | age>23
drop if v411==. | v411a==. | v412a==. | v414a==. | v414g==. | v414m==. | v414n==. |
v414t==. | v414o==. | v414e==. | v414f==. | v414i==. | v414j==. | v414k==. | v414l==. |
v414p==. | v414v==. | m4==. | b9==. | m39==. | m39a==.
drop if v411==8 | v411a==8 | v412a==8 | v414a==8 | v414g==8 | v414m==8 | v414n==8 |
v414t==8 | v414o==8 | v414e==8 | v414f==8 | v414i==8 | v414j==8 | v414k==8 | v414l==8 |
v414p==8 | v414v==8 | m4==8 | b9==8 | m39==8 | m39a==8
keep if m4==95
keep if b9==0
keep if midx==1
*Dropped age exclusion - 159,027
*Dropped missing values - 2,711
*Dropped flagged/don't know values - 1,288
*Dropped Non-breastfeeding children - 0
*********  FINAL  ANALYTIC  SAMPLE  -  53,068  CHILDREN  aged  6-23  months  currently
breastfeeding
********* Indicator Construction - minaccpdiet (Minimum Acceptable Diet)
gen foodgrp105 = .
replace foodgrp105 = 1 if v411==1 | v411a==1 | v414p==1 | v414v==1
replace foodgrp105 = 0 if v411==0 & v411a==0 & v414p==0 & v414v==0
*replace foodgrp1 = 0 if v411==. & v411a==. & v414p==. & v414v==.
*replace foodgrp1 = 0 if v411==8 & v411a==8 & v414p==8 & v414v==8
gen foodgrp205 = .
replace foodgrp205 = 1 if v414e==1 | v412a==1 | v414f==1
replace foodgrp205 = 0 if v414e==0 & v412a==0 & v414f==0
*replace foodgrp2 = 0 if v414e==. & v412a==. & v414f==.
*replace foodgrp2 = 0 if v414e==8 & v412a==8 & v414f==8
gen foodgrp305 = .
replace foodgrp305 = 1 if v414i==1 | v414j==1 | v414k==1
replace foodgrp305 = 0 if v414i==0 & v414j==0 & v414k==0
*replace foodgrp3 = 0 if v414i==. & v414j==. & v414k==.
*replace foodgrp3 = 0 if v414i==8 & v414j==8 & v414k==8
gen foodgrp405 = .
replace foodgrp405 = 1 if v414l==1
replace foodgrp405 = 0 if v414l==0
```

```
*replace foodgrp4 = 0 if v414l==.
*replace foodgrp4 = 0 if v414l==8
gen foodgrp505 = .
replace foodgrp505 = 1 if v414g==1
replace foodgrp505 = 0 if v414g==0
*replace foodgrp5 = 0 if v414g==.
*replace foodgrp5 = 0 if v414g==8
gen foodgrp605 = .
replace foodgrp605 = 1 if v414a==1 | v414m==1 | v414n==1 | v414t==1
replace foodgrp605 = 0 if v414a==0 & v414m==0 & v414n==0 & v414t==0
*replace foodgrp6 = 0 if v414a==. & v414m==. & v414n==. & v414t==.
*replace foodgrp6 = 0 if v414a==8 & v414m==8 & v414n==8 & v414t==8
gen foodgrp705 = .
replace foodgrp705 = 1 if v414o==1
replace foodgrp705 = 0 if v414o==0
*replace foodgrp7 = 0 if v414o==.
*replace foodgrp7 = 0 if v414o==8
gen dd05 = foodgrp105 + foodgrp205 + foodgrp305 + foodgrp405 + foodgrp505 + foodgrp605
+ foodgrp705
gen mindd05 = .
replace mindd05 = 1 if dd05>=4
replace mindd05 = 0 if dd05<4
tab mindd05 [aw=wt]
gen minmealfreq05 = .
replace minmealfreq05 = 1 if m39>=2 &(age==6 | age==7 | age==8)
replace minmealfreq05 = 1 if m39>=3 &(age>=9)
replace minmealfreq05 = 0 if m39<2 &(age==6 | age==7 | age==8)
replace minmealfreq05 = 0 if m39<3 &(age>=9)
tab minmealfreq05 [aw=wt]
gen minaccdiet05 = .
replace minaccdiet05 = 1 if mindd05==1 & minmealfreq05==1
replace minaccdiet05 = 0 if mindd05==0 | minmealfreq05==0
label define minaccdiet05 1 "Yes" 0 "No"
label values minaccdiet05 minaccdiet
```

Indicator 89: Adequate Diet [Non-breastfed Children]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<6 | age>23
drop if v411==. | v411a==. | v412a==. | v414a==. | v414g==. | v414m==. | v414n==. |
v414t==. | v414o==. | v414e==. | v414f==. | v414i==. | v414j==. | v414k==. | v414l==. |
v414p==. | v414v==. | m4==. | b9==. | m39==. | m39a==.
drop if v411==8 | v411a==8 | v412a==8 | v414a==8 | v414g==8 | v414m==8 | v414n==8 |
v414t==8 | v414o==8 | v414e==8 | v414f==8 | v414i==8 | v414j==8 | v414k==8 | v414l==8 |
v414p==8 | v414v==8 | m4==8 | b9==8 | m39==8 | m39a==8
keep if m4~=95
keep if b9==0
keep if midx==1
```

```
drop if v469e==8 | v469f==8 | v469x==8
replace v469e = 0 if v469e==.
replace v469f = 0 if v469f==.
replace v469x = 0 if v469x==.
*dropped age exclusion - 159,027
*dropped missing values - 2,711
*dropped flagged/don't know values - 1,288
*dropped breastfeeding children - 53,076
*dropped birth index higher than 1 - 22
*dropped flagged/don't know values for milk consumption frequency - 62
********* FINAL ANALYTIC SAMPLE - 8,032 CHILDREN aged 6-23 months non-breastfeeding
********* Indicator Construction - minaccpdietnbf (Minimum Acceptable Diet - Non
Breastfed Children)
gen foodgrp105 = .
replace foodgrp105 = 1 if v411==1 | v411a==1 | v414p==1 | v414v==1
replace foodgrp105 = 0 if v411==0 & v411a==0 & v414p==0 & v414v==0
*replace foodgrp1 = 0 if v411==. & v411a==. & v414p==. & v414v==.
*replace foodgrp1 = 0 if v411==8 & v411a==8 & v414p==8 & v414v==8
gen foodgrp205 = .
replace foodgrp205 = 1 if v414e==1 | v412a==1 | v414f==1
replace foodgrp205 = 0 if v414e==0 & v412a==0 & v414f==0
*replace foodgrp2 = 0 if v414e==. & v412a==. & v414f==.
*replace foodgrp2 = 0 if v414e==8 & v412a==8 & v414f==8
gen foodgrp305 = .
replace foodgrp305 = 1 if v414i==1 | v414j==1 | v414k==1
replace foodgrp305 = 0 if v414i==0 & v414j==0 & v414k==0
*replace foodgrp3 = 0 if v414i==. & v414j==. & v414k==.
*replace foodgrp3 = 0 if v414i==8 & v414j==8 & v414k==8
gen foodgrp405 = .
replace foodgrp405 = 1 if v414l==1
replace foodgrp405 = 0 if v414l==0
*replace foodgrp4 = 0 if v414l==.
*replace foodgrp4 = 0 if v414l==8
gen foodgrp505 = .
replace foodgrp505 = 1 if v414g==1
replace foodgrp505 = 0 if v414g==0
*replace foodgrp5 = 0 if v414g==.
*replace foodgrp5 = 0 if v414g==8
gen foodgrp605 = .
replace foodgrp605 = 1 if v414a==1 | v414m==1 | v414n==1 | v414t==1
replace foodgrp605 = 0 if v414a==0 & v414m==0 & v414n==0 & v414t==0
*replace foodgrp6 = 0 if v414a==. & v414m==. & v414n==. & v414t==.
*replace foodgrp6 = 0 if v414a==8 & v414m==8 & v414n==8 & v414t==8
gen foodgrp705 = .
replace foodgrp705 = 1 if v414o==1
replace foodgrp705 = 0 if v414o==0
*replace foodgrp7 = 0 if v414o==.
*replace foodgrp7 = 0 if v414o==8
gen dd05 = foodgrp105 + foodgrp205 + foodgrp305 + foodgrp405 + foodgrp505 + foodgrp605
+ foodgrp705
gen mindd05 = .
```

```
replace mindd05 = 1 if dd05>=4
replace mindd05 = 0 if dd05<4
tab mindd05 [aw=wt]
gen milkprodfreq05 = v469e+v469f+v469x
gen milkprodfreq205 = .
replace milkprodfreq205 = 1 if milkprodfreq05>=2
replace milkprodfreq205 = 0 if milkprodfreq05<2
tab milkprodfreq205 [aw=wt]
gen totmealfreq05 = .
replace totmealfreq05 = milkprodfreq05 + m39
gen minmealfreq05 = .
replace minmealfreq05 = 1 if totmealfreq05>=4
replace minmealfreq05 = 0 if totmealfreq05<4
tab minmealfreq05 [aw=wt]
gen ddnonmilk05 = foodgrp205 + foodgrp305 + foodgrp405 + foodgrp505 + foodgrp605 +
foodgrp705
gen minddnonmilk05 = .
replace minddnonmilk05 = 1 if ddnonmilk05>=4
replace minddnonmilk05 = 0 if ddnonmilk05<4
gen minaccdietnbf05 = .
replace minaccdietnbf05 = 1 if minddnonmilk05==1 & minmealfreq05==1 & milkprodfreq205==1
replace minaccdietnbf05 = 0 if minddnonmilk05==0 | minmealfreq05==0 | milkprodfreq205==0
label define minaccdietnbf05 1 "Yes" 0 "No"
label values minaccdietnbf05 minaccdietnbf
```

Indicator 90: Adequate Diet [Total]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if age<6 | age>23
drop if v411==. | v411a==. | v412a==. | v414a==. | v414g==. | v414m==. | v414n==. |
v414t==. | v414o==. | v414e==. | v414f==. | v414i==. | v414j==. | v414k==. | v414l==. |
v414p==. | v414v==. | m4==. | b9==. | m39==. | m39a==.
drop if v411==8 | v411a==8 | v412a==8 | v414a==8 | v414g==8 | v414m==8 | v414n==8 |
v414t==8 | v414o==8 | v414e==8 | v414f==8 | v414i==8 | v414j==8 | v414k==8 | v414l==8 |
v414p==8 | v414v==8 | m4==8 | b9==8 | m39==8 | m39a==8
keep if b9==0
keep if midx==1
drop if v469e==8 | v469f==8 | v469x==8
*dropped age exclusion - 159,027
*dropped missing values - 2,711
*dropped flagged/don't know values - 1,288
*dropped birth index higher than 1 - 30
*dropped flagged/don't know values for milk consumption frequency - 209
********* FINAL ANALYTIC SAMPLE - 60,953 CHILDREN aged 6-23 months
********* Indicator Construction - minaccpdietnbf (Minimum Acceptable Diet - Non
Breastfed Children)
replace v469e = 0 if v469e==.
replace v469f = 0 if v469f==.
```

```
replace v469x = 0 if v469x==.
des v411 v411a v414p v414v v414e v412a v414f v414i v414j v414k v414l v414g v414a v414m
v414n v414t v414o
gen foodgrp105 = .
replace foodgrp105 = 1 if v411==1 | v411a==1 | v414p==1 | v414v==1
replace foodgrp105 = 0 if v411==0 & v411a==0 & v414p==0 & v414v==0
replace foodgrp105 = 0 if v411==. & v411a==. & v414p==. & v414v==.
replace foodgrp105 = 0 if v411==8 & v411a==8 & v414p==8 & v414v==8
gen foodgrp205 = .
replace foodgrp205 = 1 if v414e==1 | v412a==1 | v414f==1
replace foodgrp205 = 0 if v414e==0 & v412a==0 & v414f==0
replace foodgrp205 = 0 if v414e==. & v412a==. & v414f==.
replace foodgrp205 = 0 if v414e==8 & v412a==8 & v414f==8
gen foodgrp305 = .
replace foodgrp305 = 1 if v414i==1 | v414j==1 | v414k==1
replace foodgrp305 = 0 if v414i==0 & v414j==0 & v414k==0
replace foodgrp305 = 0 if v414i==. & v414j==. & v414k==.
replace foodgrp305 = 0 if v414i==8 & v414j==8 & v414k==8
gen foodgrp405 = .
replace foodgrp405 = 1 if v414l==1
replace foodgrp405 = 0 if v414l==0
replace foodgrp405 = 0 if v414l==.
replace foodgrp405 = 0 if v414l==8
gen foodgrp505 = .
replace foodgrp505 = 1 if v414g==1
replace foodgrp505 = 0 if v414g==0
replace foodgrp505 = 0 if v414g==.
replace foodgrp505 = 0 if v414g==8
gen foodgrp605 = .
replace foodgrp605 = 1 if v414a==1 | v414m==1 | v414n==1 | v414t==1
replace foodgrp605 = 0 if v414a==0 & v414m==0 & v414n==0 & v414t==0
replace foodgrp605 = 0 if v414a==. & v414m==. & v414n==. & v414t==.
replace foodgrp605 = 0 if v414a==8 & v414m==8 & v414n==8 & v414t==8
gen foodgrp705 = .
replace foodgrp705 = 1 if v414o==1
replace foodgrp705 = 0 if v414o==0
replace foodgrp705 = 0 if v414o==.
replace foodgrp705 = 0 if v414o==8
gen dd05 = foodgrp105 + foodgrp205 + foodgrp305 + foodgrp405 + foodgrp505 + foodgrp605
+ foodgrp705
********* Min Acc Diet Breastfeeding
gen minddbf05 = .
replace minddbf05 = 1 if dd05>=4 & m4==95
replace minddbf05 = 0 if dd05<4 & m4==95
tab minddbf05 [aw=wt] if m4==95
gen minmealfreqbf05 = .
replace minmealfreqbf05 = 1 if m39>=2 &(age==6 | age==7 | age==8) & m4==95
replace minmealfreqbf05 = 1 if m39>=3 &(age>=9) & m4==95
replace minmealfreqbf05 = 0 if m39<2 &(age==6 | age==7 | age==8) & m4==95
replace minmealfreqbf05 = 0 if m39<3 &(age>=9) & m4==95
tab minmealfreqbf05 [aw=wt] if m4==95
```

```
gen minaccdietbf05 = .
replace minaccdietbf05 = 1 if (minddbf05==1 & minmealfreqbf05==1) & m4==95
replace minaccdietbf05 = 0 if (minddbf05==0 | minmealfreqbf05==0) & m4==95
tab minaccdietbf05 [aw=wt] if m4==95
********* Min Acc Diet Non-Breastfed
gen milkprodfreq05 = v469e+v469f+v469x if m4~=95
gen milkprodfreq205 = .
replace milkprodfreq205 = 1 if milkprodfreq05>=2 & m4~=95
replace milkprodfreq205 = 0 if milkprodfreq05<2 & m4~=95
tab milkprodfreq205 [aw=wt]
gen totmealfreq05 = .
replace totmealfreq05 = milkprodfreq05 + m39 if m4~=95
gen minmealfreqnbf05 = .
replace minmealfreqnbf05 = 1 if totmealfreq05>=4 & m4~=95
replace minmealfreqnbf05 = 0 if totmealfreq05<4 & m4~=95
tab minmealfreqnbf05 [aw=wt]
gen ddnonmilk05 = foodgrp205 + foodgrp305 + foodgrp405 + foodgrp505 + foodgrp605 +
foodgrp705 if m4~=95
gen minddnonmilk05 = .
replace minddnonmilk05 = 1 if ddnonmilk05>=4 & m4~=95
replace minddnonmilk05 = 0 if ddnonmilk05<4 & m4~=95
gen minaccdietnbf05 = .
replace minaccdietnbf05 = 1 if (minddnonmilk05==1 & minmealfreqnbf05==1 &
milkprodfreq205==1) & m4~=95
replace minaccdietnbf05 = 0 if (minddnonmilk05==0 | minmealfreqnbf05==0 |
milkprodfreq205==0) & m4~=95
gen minaccdiettot05 = .
replace minaccdiettot05 = 1 if minaccdietbf05==1 & m4==95
replace minaccdiettot05 = 0 if minaccdietbf05==0 & m4==95
replace minaccdiettot05 = 1 if minaccdietnbf05==1 & m4~=95
replace minaccdiettot05 = 0 if minaccdietnbf05==0 & m4~=95
replace minaccdiettot05 = 0 if m4==98
label define minaccdiettot05 1 "Yes" 0 "No"
label values minaccdiettot05 minaccdiettot
```

Indicator 91: Early Breastfeeding Initiation

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
keep if age<36
drop if midx>1
* dropped children above 3 years - 93,464
* dropped children before last birth - 12,780
* Note: Missing values on breastfeeding initiation should not be excluded from
denominator (DHS Guide)
********* FINAL ANALYTIC SAMPLE - 117,974 alive children aged 0-36 months
********* Indicator Construction - earlybf
gen earlybf05 = .
replace earlybf05 = 0 if m34>0
```

```
replace earlybf05 = 1 if m34==0 & (m4~=94 | m4~=98)
label define earlybf05 0 "No" 1 "Yes"
label values earlybf05 earlybf
```

Indicator 92: ICDS Supplementary Nutrition

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Crieria
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
drop if midx>1
*dropped index>1 = 51,792
********* FINAL ANALYTIC SAMPLE - 172,426 most recent live births in last five years
********* Indicator Construction - suppnutrition
gen suppnutrition05 = .
replace suppnutrition05 = 1 if s436==1
replace suppnutrition05 = 0 if s436==0
label define suppnutrition05 1 "Yes" 0 "No"
label values suppnutrition05 suppnutrition05
```

Indicator 93: Iodized Salt Intake

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if hv234a==.
*dropped don't know observation -0
********* FINAL ANALYTIC SAMPLE - 2,843,917 sample population
********* Indicator Construction – iodized salt
gen iodizedsalt05 =.
replace iodizedsalt05 = 1 if hv234a==1
replace iodizedsalt05 = 0 if hv234a==0 | hv234a==3 | hv234a==6
label define iodizedsalt05 1 "Yes" 0 "No"
label values iodizedsalt05 iodizedsalt05
```

Indicator 94: Exclusive Breastfeeding [Under 6 Months]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
drop if b5==0
*Dead children - 11884
********* Sample Exclusion - Indicator-Specific Criteria
keep if age<6
keep if b9==0
keep if caseid != caseid[_n-1]
********* FINAL ANALYTIC SAMPLE
********* Indicator Construction - diarrhoea - Diarrhoea
gen exclusivebf = .
replace exclusivebf = 1 if m4==95 & m55==0
replace exclusivebf = 0 if exclusivebf~=1
```

Indicator 95: Receiving Solid/Semi-solid Food [6-8 Months]

```
********* Age - 0-59 months [age]
gen age = v008-b3
********* Sample Exclusion - Common Criteria
```

```
drop if b5==0
*Dead children - 8,702
********* Sample Exclusion - Indicator-Specific Criteria
keep if b19>=6 & b19<=8 //213,311 observations deleted
*keep if age>=6 & age<=8 //213,219 observations deleted
keep if b9==0
keep if caseid != caseid[_n-1]
*Age criteria - 213,311
*Child lives with whom lives elsewhere - 20
********Caseid - 85
********* FINAL ANALYTIC SAMPLE - 10,802
********* Indicator Construction - solidfoodbf
gen solidfoodbf05 = .
replace solidfoodbf05 = 1 if v404==1 & (m39a==1 | v412a==1)
replace solidfoodbf05 = 0 if v404==0 | (m39a==0 & v412a==0)
```

Indicator 96: Zero Food [Children]

```
********* Sample Weights Construction
gen age = b19
gen wt=v005/1000000
recode age (6/23=1 "6-23") (else=0), gen(agecats623)
label define yesno 0 "No" 1 "Yes"
label variable v024 "State/Union Territory Name"
**CHECK VIA M39A
gen any_eat= m39a==1 | v411a==1 | v411==1
**FOOD GENERATION
gen any_food= v414s==1 | v414p==1 | v414v==1 | v414g==1 | v414a==1 | v414m==1 | v414n==1
| v414t==1 | v414o==1 | v414f==1 | v414l==1 | v414i==1 | v414j==1 | v414k==1 | v412a==1
| v414e==1 | v411==1 | v411a==1
label values any_food yesno
label var any_food "Child given any food in the last 24 hours"
gen any_food1= v414s==1 | v414p==1 | v414v==1 | v414g==1 | v414a==1 | v414m==1 | v414n==1
| v414t==1 | v414o==1 | v414f==1 | v414l==1 | v414i==1 | v414j==1 | v414k==1 | v412a==1
| v414e==1 | v411==1 | v411a==1 | v410==1| v412c==1| v413==1
label values any_food yesno
***Denominator: study population
keep if age < 24 & b9 == 0
keep if midx==1
keep if agecats623 == 1
keep if b5 == 1
drop if v414s==8 | v414p==8 | v414v==8 | v414g==8 | v414a==8 | v414m==8 | v414n==8 |
v414t==8 | v414o==8 | v414f==8 | v414l==8 | v414i==8 | v414j==8 | v414k==8 | v412a==8 |
v414e==8 | v411==8 | v411a==8
drop if v414s==. | v414p==. | v414v==. | v414g==. | v414a==. | v414m==. | v414n==. |
v414t==. | v414o==. | v414f==. | v414l==. | v414i==. | v414j==. | v414k==. | v412a==. |
v414e==. | v411==. | v411a==.
ta any_food
***breastfed***
recode m4 (95=1) (.=.) (else=0), ge(breastfed)
***state***
clonevar state_new=v024
ge missing= 0
```

```
replace missing=1 if v410==.| v412c==.| v413==.
ge nfhs=5
recode any_food (1=0) (0=1) (9=9) (else=.), ge(zerofood)
```

Indicator 97: Access to Electricity

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if hv206==.
********* FINAL ANALYTIC SAMPLE - 2,843,917 sample population
********* Indicator Construction - accelec
gen accelec05 = .
replace accelec05=1 if hv206==1
replace accelec05=0 if hv206==0
label define accelec05 1 "Yes" 0 "No"
label values accelec05 accelec05
```

Indicator 98: Clean Cooking Fuel

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if hv226==.
*dropped missing observation - 0
********* FINAL ANALYTIC SAMPLE - 2,843,917 sample population
********* Indicator Construction - cleancookfuel
gen cleancookfuel05 =.
replace cleancookfuel05 = 1 if hv226==1 | hv226==2 | hv226==4
replace cleancookfuel05 = 0 if hv226>4
label define cleancookfuel05 1 "Yes" 0 "No"
label values cleancookfuel05 cleancookfuel05
```

Indicator 99: Death Registration

```
******** Sample Exclusion - Indicator-Specific Criteria
drop if sh88==.
*dropped missing observations-560,107
*************FINAL ANALYTIC SAMPLE: 81,340
*************reshaping the file
rename sh91_1 death1
rename sh91_2 death2
rename sh91_3 death3
rename sh91_4 death4
rename sh91_5 death5
reshape long death, i(hhid) j(deathorder)
********* Indicator Construction - deathreg05
gen deathreg05 =.
replace deathreg05 = 1 if death==1
replace deathreg05 = 0 if death==0
label define deathreg05 1 "Yes" 0 "No"
label values deathreg05 deathreg05
```

Indicator 100: Handwashing Facilities

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if hv230a==. | hv230b==. | hv232==.
*dropped don't know observation - 95,469
********* FINAL ANALYTIC SAMPLE - 2,748,448 sample population
********* Indicator Construction - handwashfacility
gen handwashfacility05 =.
```

```
replace handwashfacility05 = 1 if (hv230a==1 | hv230a==2) & hv230b==1 & hv232==1
replace handwashfacility05 = 0 if hv230a>2 | hv230b==0 | hv232==0
label define handwashfacility05 1 "Yes" 0 "No"
label values handwashfacility05 handwashfacility05
```

Indicator 101: Hygienic Protection Methods [Menstruation]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v012>24
drop if v215==996 | v215==998
*dropped age greater than 24 - 482,935
*dropped never mensturated/don't know - 1,605
********* FINAL ANALYTIC SAMPLE - 239,575 women aged 15-24 years ever mensturated
********* Indicator Construction - hygprotecmens
gen hygprotecmens05 = .
replace hygprotecmens05 = 1 if s260b==1 | s260c==1 | s260d==1 | s260e==1
replace hygprotecmens05 = 0 if s260b==0 & s260c==0 & s260d==0 & s260e==0
label define hygprotecmens05 1 "Yes" 0 "No"
label values hygprotecmens05 hygprotecmens05
```

Indicator 102: Improved Sanitation Facility

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if hv205==.
*dropped don't know observation - 7
********* FINAL ANALYTIC SAMPLE - 2,843,910 sample population
********* Indicator Construction - imprsanitation
gen imprsanitation05 =.
replace imprsanitation05 = 1 if (hv205==11 | hv205==12 | hv205==13 | hv205==21 |
hv205==22 | hv205==41) & hv225==0
replace imprsanitation05 = 0 if (hv205==14 | hv205==15 | hv205==23 | hv205==31 |
hv205==44 | hv205==96)
replace imprsanitation05 = 0 if hv225==1
label define imprsanitation05 1 "Yes" 0 "No"
label values imprsanitation05 imprsanitation05
```

Indicator 103: Improved Source of Drinking Water

```
******** Sample Exclusion - Indicator-Specific Criteria
drop if hv201==.
*dropped don't know observation - 0
********* FINAL ANALYTIC SAMPLE - 2,843,917 sample population
********* Indicator Construction - imprdrinkwater
gen imprdrinkwater05 =.
replace imprdrinkwater05 = 1 if (hv201==11 | hv201==12 | hv201==13 | hv201==14 |hv201==21
| hv201==31 | hv201==41 | hv201==51 | hv201==61| hv201==62| hv201==71| hv201==92)
replace imprdrinkwater05 = 0 if imprdrinkwater05~=1
label define imprdrinkwater05 1 "Yes" 0 "No"
label values imprdrinkwater05 imprdrinkwater05
```

Indicator 104: Internet Usage [Women]

```
********* Indicator Construction
gen internetwom = .
replace internetwom = 1 if v171a==3
replace internetwom = 0 if v171a==0
label define internetwom 1 "Yes" 0 "No"
```

```
label values internetwom internetwom
```

Indicator 105: Private Latrine

```
********* Sample Exclusion - Indicator-Specific Criteria
*dropped don't know observation - 0
********* FINAL ANALYTIC SAMPLE - 2,843,917 sample population
********* Indicator Construction - private latrine
gen privatelatrine05 =.
replace privatelatrine05 = 1 if hv225==0
replace privatelatrine05 = 0 if hv225==1
replace privatelatrine05 = 0 if hv225==.
label define privatelatrine05 1 "Yes" 0 "No"
label values privatelatrine05 privatelatrine05
```

Indicator 106: Safe Stool Disposal

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v465==.
*dropped sample not eligible (only youngest child) - 638,911
********* FINAL ANALYTIC SAMPLE - 85,204 women aged 15-49 years with youngest child
********* Indicator Construction - safestooldisp
gen safestooldisp05 = .
replace safestooldisp05 = 1 if v465==1 | v465==2 | v465==5
replace safestooldisp05 = 0 if v465==3 | v465==4 | v465==9 | v465==96 | v465==98
label define safestooldisp05 1 "Yes" 0 "No"
label values safestooldisp05 safestooldisp05
```

Indicator 107: Women with Personal Mobile Phone

```
The variable is already constructed in the dataset and used directly.
```

Indicator 108: Alcohol Consumption [Men]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if sh10a==1
* 1853443 deleted
********* FINAL ANALYTIC SAMPLE - 990,474
********* Indicator Construction - alcoholmen
gen alcoholmen05 = .
replace alcoholmen05 = 1 if sh26==1
replace alcoholmen05 = 0 if sh26==0 | sh26==8
label define alcoholmen05 1 "Yes" 0 "No"
label values alcoholmen05 alcoholmen05
```

Indicator 109: Alcohol Consumption [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if s720==.
********* FINAL ANALYTIC SAMPLE -  724,115 women aged 15-49 years
********* Indicator Construction - alcoholwom05
gen alcoholwom05 = .
replace alcoholwom05 = 1 if s720==1
replace alcoholwom05 = 0 if s720==0
label define alcoholwom05 1 "Yes" 0 "No"
label values alcoholwom05 alcoholwom05
```

Indicator 110: Child Marriage [Boy]

```
********* Sample Exclusion - Indicator-Specific Criteria
```

```
keep if mv012>24 & mv012<30
*dropped age criteria - 95971
********* FINAL ANALYTIC SAMPLE -  16151 Men
********* Indicator Construction – boy child marriage
gen cmcagemar = mv509-mv011
gen agemar = int((cmcagemar - 1) / 12)
gen boychildmarriage =.
replace boychildmarriage = 1 if agemar < 21
replace boychildmarriage = 0 if agemar >= 21
```

Indicator 111: Child Marriage [Girl]

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v012>19 & v012<25
*dropped age criteria - 605,415
********* FINAL ANALYTIC SAMPLE - 118,700 women aged 20-24 years
********* Indicator Construction - child marriage
gen cmcagemar = v509-v011
gen agemar = int((cmcagemar - 1) / 12)
gen childmarriage05 =.
replace childmarriage05 = 1 if agemar < 18
replace childmarriage05 = 0 if agemar >= 18
```

Indicator 112: Currently Working Women

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v731==.
*dropped missing observations - 615,330
********* FINAL ANALYTIC SAMPLE -  108,785 women aged 15-49 years
********* Indicator Construction – working women
gen workingwom05 = .
replace workingwom05 = 1 if (v731==1 | v731==2 | v731==3) & v741==1
replace workingwom05 = 0 if v731==0
label define workingwom05 1 "Yes" 0 "No"
label values workingwom05 workingwom05
```

Indicator 113: Female School Attendance

```
********* Sample Exclusion -
keep if hv104==2
*dropped observations- 1,410,337
drop if hml16<6
*dropped if corrected age is below 6 - 139,807

********* FINAL ANALYTIC SAMPLE - 1,293,773
********* Indicator Construction - femaleschool05
gen femaleschool05 = .
replace femaleschool05 = 1 if hv106>0
replace femaleschool05 = 0 if hv106==0
label define femaleschool05 1 "Yes" 0 "No"
label values femaleschool05 femaleschool05
```

Indicator 114: High School Matriculation [Men]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if mv012>49
********* FINAL ANALYTIC SAMPLE -  112122 Men
```

```
********* Indicator Construction - male matric
gen malematric = .
replace malematric = 1 if mv133>=10
replace malematric = 0 if mv133<10
label define malematric 1 "Yes" 0 "No"
label values malematric malematric
```

Indicator 115: High School Matriculation [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v133==.
********* FINAL ANALYTIC SAMPLE -  724,115 women aged 15-49 years
********* Indicator Construction - female matric
gen femalematric05 = .
replace femalematric05 = 1 if v133>=10
replace femalematric05 = 0 if v133<10
label define femalematric05 1 "Yes" 0 "No"
label values femalematric05 femalematric05
```

Indicator 116: Intimate Partner Violence [Against Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v501==0
drop if v012<18
keep if v044==1
*dropped wpmen never married - 181,285
*dropped age criteria (less than 18) - 2,255
*dropped women not selected for domestic violence module - 476,760
********* FINAL ANALYTIC SAMPLE - 63,815 ever married women aged 18-49 years
********* Indicator Construction - ipv
gen ipv05 = .
replace ipv05 = 1 if d106==1 | d107==1 | d108==1
replace ipv05 = 0 if d106==0 & d107==0 & d108==0
label define ipv05 1 "Yes" 0 "No"
label values ipv05 ipv05
```

Indicator 117: Literacy [Men]

```
******** Sample Exclusion - Indicator-Specific Criteria
drop if mv012>49
********* FINAL ANALYTIC SAMPLE - 112122 men
********* Indicator Construction - literacy men
gen literacymen = .
replace literacymen = 1 if mv106>=3 | mv155==1 | mv155==2
replace literacymen = 0 if mv106<3 & (mv155==0 | mv155==3 | mv155==4)
label define literacymen 1 "Yes" 0 "No"
label values literacymen literacymen
```

Indicator 118: Literacy [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
********* FINAL ANALYTIC SAMPLE - 724,115 women aged 15-49 years
********* Indicator Construction – literacy women
gen literacywom05 = .
replace literacywom05 = 1 if v106>=3 | v155==1 | v155==2
replace literacywom05 = 0 if v106<3 & (v155==0 | v155==3 | v155==4)
label define literacywom05 1 "Yes" 0 "No"
```

```
label values literacywom05 literacywom05
```

Indicator 119: Population below 15 Years

```
********* FINAL ANALYTIC SAMPLE -
********* Indicator Construction
gen agebelow15 = .
replace agebelow15 = 1 if hml16<15
replace agebelow15 = 0 if hml16>=15
label define agebelow15 1 "Yes" 0 "No"
label values agebelow15 agebelow15
```

Indicator 120: Sexual Violence [Young Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
drop if v012<18
drop if v012>29
keep if v044==1
*dropped age<18 - 73,299
*dropped age>29 - 364,556
*dropped not selected for domestic violence module - 257,843
********* FINAL ANALYTIC SAMPLE - 28,417 women aged 18-29 years
********* Indicator Construction – sexual violence
gen sexviolence05 = .
replace sexviolence05 = 1 if d108==1 & d126<18
replace sexviolence05 = 0 if d108==1 & d126>=18
replace sexviolence05 = 0 if d108==0
label define sexviolence05 1 "Yes" 0 "No"
label values sexviolence05 sexviolence05
```

Indicator 121: Teenage Pregnancy

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v012<20
*dropped age criteria - 601,635
********* FINAL ANALYTIC SAMPLE -  122,480 women aged 15-19 years
********* Indicator Construction – teenage pregnancy
gen teenpreg05 = .
replace teenpreg05 = 1 if v213==1 | v201>0
replace teenpreg05 = 0 if v213==0 & v201==0
label define teenpreg05 1 "Yes" 0 "No"
label values teenpreg05 teenpreg05
```

Indicator 122: Tobacco Consumption [Women]

```
********* Sample Exclusion - Indicator-Specific Criteria
********* FINAL ANALYTIC SAMPLE -  724,115 women aged 15-49 years
********* Indicator Construction – tobacco women
gen tobaccowom05 = .
replace tobaccowom05 = 1 if v463c==1 | v463j==1 | v463l==1 | v463z==0
replace tobaccowom05 = 0 if v463c==0 & v463j==0 & v463l==0 & v463z==1
label define tobaccowom05 1 "Yes" 0 "No"
label values tobaccowom05 tobaccowom05
```

Indicator 123: Tobacco Use [Men]

```
********* FINAL ANALYTIC SAMPLE - 990,474
********* Indicator Construction - tobacco men
gen tobaccomen05 = .
```

```
replace tobaccomen05 = 1 if sh25==1
replace tobaccomen05 = 0 if sh25==0 | sh25==8
label define tobaccomen05 1 "Yes" 0 "No"
label values tobaccomen05 tobaccomen05
```

Indicator 124: Women Participation in Household Decisions

```
********* Sample Exclusion - Indicator-Specific Criteria
keep if v501==1
drop if v743a==. | v743b==. | v743d==.
*dropped women not currently not married - 211,707
*dropped missing observations - 435,498
********* FINAL ANALYTIC SAMPLE - 76,910 currently married women
********* Indicator Construction - parthhdecision
gen parthhdecision05 = .
replace parthhdecision05 = 1 if v743a==1 | v743b==1 | v743d==1 | v743a==2 | v743b==2 |
v743d==2
replace parthhdecision05 = 0 if v743a~=1 & v743b~=1 & v743d~=1 & v743a~=2 & v743b~=2 &
v743d~=2
label define parthhdecision05 1 "Yes" 0 "No"
label values parthhdecision05 parthhdecision05
```

Appendix 1.2: Aggregation Codes

```
********************************************** Computing Headcount
use "D:\Sunil\KU work\IPI\estimation\district\ipi_districtprevestimatesnfhs4&5&denom",
clear
gen hc_1 = (p_indfive1/100)*denom29
gen hc_2 = (p_indfive2/100)*denom18
gen hc_3 = (p_indfive3/100)*denom18
gen hc_4 = (p_indfive4/100)*denom18
gen hc_5 = (p_indfive5/100)*denom18
gen hc_6 = (p_indfive6/100)*denom18
gen hc_7 = (p_indfive7/100)*denom16
gen hc_8 = (p_indfive8/100)*denom16
gen hc_9 = (p_indfive9/100)*denom16
gen hc_10 = (p_indfive10/100)*denom29
gen hc_11 = (p_indfive11/100)*denom16
gen hc_12 = (p_indfive12/100)*denom18
gen hc_13 = (p_indfive13/100)*denom18
gen hc_14 = (p_indfive14/100)*denom16
gen hc_15 = (p_indfive15/100)*denom26
gen hc_16 = (p_indfive16/100)*denom16
gen hc_17 = (p_indfive17/100)*denom18
gen hc_18 = (p_indfive18/100)*denom16
gen hc_19 = (p_indfive19/100)*denom12
gen hc_20 = (p_indfive20/100)*denom16
gen hc_21 = (p_indfive21/100)*denom2
gen hc_22 = (p_indfive22/100)*denom2
gen hc_23 = (p_indfive23/100)*denom29
gen hc_24 = (p_indfive24/100)*denom18
gen hc_25 = (p_indfive25/100)*denom18
gen hc_26 = (p_indfive26/100)*denom10
```

```
gen hc_27 = (p_indfive27/100)*denom9
gen hc_28 = (p_indfive28/100)*denom18
gen hc_29 = (p_indfive29/100)*denom7
gen hc_30 = (p_indfive30/100)*denom7
gen hc_31 = (p_indfive31/100)*denom7
gen hc_32 = (p_indfive32/100)*denom7
gen hc_33 = (p_indfive33/100)*denom7
gen hc_34 = (p_indfive34/100)*denom7
gen hc_35 = (p_indfive35/100)*denom7
gen hc_36 = (p_indfive36/100)*denom5
gen hc_37 = (p_indfive37/100)*denom7
gen hc_38 = (p_indfive38/100)*denom18
gen hc_39 = (p_indfive39/100)*denom2
gen hc_40 = (p_indfive40/100)*denom2
gen hc_41 = (p_indfive41/100)*denom7
gen hc_42 = (p_indfive42/100)*denom7
gen hc_43 = (p_indfive43/100)*denom2
gen hc_44 = (p_indfive44/100)*denom3
gen hc_45 = (p_indfive45/100)*denom3
gen hc_46 = (p_indfive46/100)*denom7
gen hc_47 = (p_indfive47/100)*denom2
gen hc_49 = (p_indfive49/100)*denom2
gen hc_50 = (p_indfive50/100)*denom18
gen hc_51 = (p_indfive51/100)*denom7
gen hc_52 = (p_indfive52/100)*denom18
gen hc_53 = (p_indfive53/100)*denom23
gen hc_54 = (p_indfive54/100)*denom22
gen hc_55 = (p_indfive55/100)*denom23
gen hc_56 = (p_indfive56/100)*denom22
gen hc_57 = (p_indfive57/100)*denom23
gen hc_58 = (p_indfive58/100)*denom22
gen hc_59 = (p_indfive59/100)*denom23
gen hc_60 = (p_indfive60/100)*denom22
gen hc_61 = (p_indfive61/100)*denom23
gen hc_62 = (p_indfive62/100)*denom22
gen hc_63 = (p_indfive63/100)*denom18
gen hc_64 = (p_indfive64/100)*denom18
gen hc_65 = (p_indfive65/100)*denom18
gen hc_66 = (p_indfive66/100)*denom22
gen hc_67 = (p_indfive67/100)*denom23
gen hc_68 = (p_indfive68/100)*denom22
gen hc_69 = (p_indfive69/100)*denom20
gen hc_70 = (p_indfive70/100)*denom22
gen hc_71 = (p_indfive71/100)*denom6
gen hc_72 = (p_indfive72/100)*denom13
gen hc_73 = (p_indfive73/100)*denom18
gen hc_74 = (p_indfive74/100)*denom18
gen hc_75 = (p_indfive75/100)*denom18
gen hc_76 = (p_indfive76/100)*denom13
gen hc_77 = (p_indfive77/100)*denom22
gen hc_78 = (p_indfive78/100)*denom13
```

```
gen hc_79 = (p_indfive79/100)*denom22
gen hc_80 = (p_indfive80/100)*denom18
gen hc_81 = (p_indfive81/100)*denom22
gen hc_82 = (p_indfive82/100)*denom13
gen hc_83 = (p_indfive83/100)*denom22
gen hc_84 = (p_indfive84/100)*denom18
gen hc_85 = (p_indfive85/100)*denom18
gen hc_86 = (p_indfive86/100)*denom18
gen hc_87 = (p_indfive87/100)*denom11
gen hc_88 = (p_indfive88/100)*denom8
gen hc_89 = (p_indfive89/100)*denom1
gen hc_90 = (p_indfive90/100)*denom15
gen hc_91 = (p_indfive91/100)*denom17
gen hc_92 = (p_indfive92/100)*denom18
gen hc_93 = (p_indfive93/100)*denom29
gen hc_94 = (p_indfive94/100)*denom19
gen hc_95 = (p_indfive95/100)*denom14
gen hc_96 = (p_indfive96/100)*denom15
gen hc_97 = (p_indfive97/100)*denom29
gen hc_98 = (p_indfive98/100)*denom29
gen hc_99 = (p_indfive99/100)*denom29
gen hc_100 = (p_indfive100/100)*denom29
gen hc_101 = (p_indfive101/100)*denom21
gen hc_102 = (p_indfive102/100)*denom29
gen hc_103 = (p_indfive103/100)*denom29
gen hc_104 = (p_indfive104/100)*denom22
gen hc_105 = (p_indfive105/100)*denom29
gen hc_106 = (p_indfive106/100)*denom2
gen hc_107 = (p_indfive107/100)*denom22
gen hc_108 = (p_indfive108/100)*denom23
gen hc_109 = (p_indfive109/100)*denom22
gen hc_110 = (p_indfive110/100)*denom27
gen hc_111 = (p_indfive111/100)*denom25
gen hc_112 = (p_indfive112/100)*denom22
gen hc_113 = (p_indfive113/100)*denom28
gen hc_114 = (p_indfive114/100)*denom23
gen hc_115 = (p_indfive115/100)*denom22
gen hc_116 = (p_indfive116/100)*denom4
gen hc_117 = (p_indfive117/100)*denom23
gen hc_118 = (p_indfive118/100)*denom22
gen hc_119 = (p_indfive119/100)*denom29
gen hc_120 = (p_indfive120/100)*denom24
gen hc_121 = (p_indfive121/100)*denom20
gen hc_122 = (p_indfive122/100)*denom22
gen hc_123 = (p_indfive123/100)*denom23
gen hc_124 = (p_indfive124/100)*denom7
********** Master Estimation and Formatting
********** Ranking
egen rankfive3 =rank(-p_indfive3)
egen rankfive4 =rank(-p_indfive4)
egen rankfive5 =rank(-p_indfive5)
```

```
egen rankfive6 =rank(-p_indfive6)
egen rankfive7 =rank(-p_indfive7)
egen rankfive8 =rank(-p_indfive8)
egen rankfive9 =rank(-p_indfive9)
egen rankfive10 =rank(-p_indfive10)
egen rankfive11 =rank(-p_indfive11)
egen rankfive12 =rank(-p_indfive12)
egen rankfive14 =rank(-p_indfive14)
egen rankfive15 =rank(-p_indfive15)
egen rankfive16 =rank(-p_indfive16)
egen rankfive17 =rank(-p_indfive17)
egen rankfive18 =rank(-p_indfive18)
egen rankfive19 =rank(-p_indfive19)
egen rankfive21 =rank(-p_indfive21)
egen rankfive22 =rank(-p_indfive22)
egen rankfive23 =rank(-p_indfive23)
egen rankfive24 =rank(-p_indfive24)
egen rankfive28 =rank(-p_indfive28)
egen rankfive29 =rank(-p_indfive29)
egen rankfive30 =rank(-p_indfive30)
egen rankfive31 =rank(-p_indfive31)
egen rankfive33 =rank(-p_indfive33)
egen rankfive34 =rank(-p_indfive34)
egen rankfive35 =rank(-p_indfive35)
egen rankfive36 =rank(-p_indfive36)
egen rankfive37 =rank(-p_indfive37)
egen rankfive38 =rank(-p_indfive38)
egen rankfive39 =rank(-p_indfive39)
egen rankfive40 =rank(-p_indfive40)
egen rankfive41 =rank(-p_indfive41)
egen rankfive42 =rank(-p_indfive42)
egen rankfive43 =rank(-p_indfive43)
egen rankfive44 =rank(-p_indfive44)
egen rankfive45 =rank(-p_indfive45)
egen rankfive46 =rank(-p_indfive46)
egen rankfive47 =rank(-p_indfive47)
egen rankfive49 =rank(-p_indfive49)
egen rankfive50 =rank(-p_indfive50)
egen rankfive88 =rank(-p_indfive88)
egen rankfive89 =rank(-p_indfive89)
egen rankfive90 =rank(-p_indfive90)
egen rankfive91 =rank(-p_indfive91)
egen rankfive92 =rank(-p_indfive92)
egen rankfive93 =rank(-p_indfive93)
egen rankfive94 =rank(-p_indfive94)
egen rankfive95 =rank(-p_indfive95)
egen rankfive97 =rank(-p_indfive97)
egen rankfive98 =rank(-p_indfive98)
egen rankfive99 =rank(-p_indfive99)
egen rankfive100 =rank(-p_indfive100)
egen rankfive101 =rank(-p_indfive101)
```

```
egen rankfive102 =rank(-p_indfive102)
egen rankfive103 =rank(-p_indfive103)
egen rankfive104 =rank(-p_indfive104)
egen rankfive105 =rank(-p_indfive105)
egen rankfive106 =rank(-p_indfive106)
egen rankfive107 =rank(-p_indfive107)
egen rankfive112 =rank(-p_indfive112)
egen rankfive113 =rank(-p_indfive113)
egen rankfive114 =rank(-p_indfive114)
egen rankfive115 =rank(-p_indfive115)
egen rankfive117 =rank(-p_indfive117)
egen rankfive118 =rank(-p_indfive118)
egen rankfive124 =rank(-p_indfive124)

egen rankfive1 =rank(p_indfive1)
egen rankfive2 =rank(p_indfive2)
egen rankfive13 =rank(p_indfive13)
egen rankfive20 =rank(p_indfive20)
egen rankfive25 =rank(p_indfive25)
egen rankfive26 =rank(p_indfive26)
egen rankfive27 =rank(p_indfive27)
egen rankfive32 =rank(p_indfive32)
egen rankfive51 =rank(p_indfive51)
egen rankfive52 =rank(p_indfive52)
egen rankfive53 =rank(p_indfive53)
egen rankfive54 =rank(p_indfive54)
egen rankfive55 =rank(p_indfive55)
egen rankfive56 =rank(p_indfive56)
egen rankfive57 =rank(p_indfive57)
egen rankfive58 =rank(p_indfive58)
egen rankfive59 =rank(p_indfive59)
egen rankfive60 =rank(p_indfive60)
egen rankfive61 =rank(p_indfive61)
egen rankfive62 =rank(p_indfive62)
egen rankfive63 =rank(p_indfive63)
egen rankfive64 =rank(p_indfive64)
egen rankfive65 =rank(p_indfive65)
egen rankfive66 =rank(p_indfive66)
egen rankfive67 =rank(p_indfive67)
egen rankfive68 =rank(p_indfive68)
egen rankfive69 =rank(p_indfive69)
egen rankfive70 =rank(p_indfive70)
egen rankfive71 =rank(p_indfive71)
egen rankfive72 =rank(p_indfive72)
egen rankfive73 =rank(p_indfive73)
egen rankfive74 =rank(p_indfive74)
egen rankfive75 =rank(p_indfive75)
egen rankfive76 =rank(p_indfive76)
egen rankfive77 =rank(p_indfive77)
egen rankfive78 =rank(p_indfive78)
egen rankfive79 =rank(p_indfive79)
```

```
egen rankfive80 =rank(p_indfive80)
egen rankfive81 =rank(p_indfive81)
egen rankfive82 =rank(p_indfive82)
egen rankfive83 =rank(p_indfive83)
egen rankfive84 =rank(p_indfive84)
egen rankfive85 =rank(p_indfive85)
egen rankfive86 =rank(p_indfive86)
egen rankfive87 =rank(p_indfive87)
egen rankfive96 =rank(p_indfive96)
egen rankfive108 =rank(p_indfive108)
egen rankfive109 =rank(p_indfive109)
egen rankfive110 =rank(p_indfive110)
egen rankfive111 =rank(p_indfive111)
egen rankfive116 =rank(p_indfive116)
egen rankfive119 =rank(p_indfive119)
egen rankfive120 =rank(p_indfive120)
egen rankfive121 =rank(p_indfive121)
egen rankfive122 =rank(p_indfive122)
egen rankfive123 =rank(p_indfive123)


egen rankhc3 =rank(-hc_3)
egen rankhc4 =rank(-hc_4)
egen rankhc5 =rank(-hc_5)
egen rankhc6 =rank(-hc_6)
egen rankhc7 =rank(-hc_7)
egen rankhc8 =rank(-hc_8)
egen rankhc9 =rank(-hc_9)
egen rankhc10 =rank(-hc_10)
egen rankhc11 =rank(-hc_11)
egen rankhc12 =rank(-hc_12)
egen rankhc14 =rank(-hc_14)
egen rankhc15 =rank(-hc_15)
egen rankhc16 =rank(-hc_16)
egen rankhc17 =rank(-hc_17)
egen rankhc18 =rank(-hc_18)
egen rankhc19 =rank(-hc_19)
egen rankhc21 =rank(-hc_21)
egen rankhc22 =rank(-hc_22)
egen rankhc23 =rank(-hc_23)
egen rankhc24 =rank(-hc_24)
egen rankhc28 =rank(-hc_28)
egen rankhc29 =rank(-hc_29)
egen rankhc30 =rank(-hc_30)
egen rankhc31 =rank(-hc_31)
egen rankhc33 =rank(-hc_33)
egen rankhc34 =rank(-hc_34)
egen rankhc35 =rank(-hc_35)
egen rankhc36 =rank(-hc_36)
egen rankhc37 =rank(-hc_37)
egen rankhc38 =rank(-hc_38)
```

```
egen rankhc39 =rank(-hc_39)
egen rankhc40 =rank(-hc_40)
egen rankhc41 =rank(-hc_41)
egen rankhc42 =rank(-hc_42)
egen rankhc43 =rank(-hc_43)
egen rankhc44 =rank(-hc_44)
egen rankhc45 =rank(-hc_45)
egen rankhc46 =rank(-hc_46)
egen rankhc47 =rank(-hc_47)
egen rankhc49 =rank(-hc_49)
egen rankhc50 =rank(-hc_50)
egen rankhc88 =rank(-hc_88)
egen rankhc89 =rank(-hc_89)
egen rankhc90 =rank(-hc_90)
egen rankhc91 =rank(-hc_91)
egen rankhc92 =rank(-hc_92)
egen rankhc93 =rank(-hc_93)
egen rankhc94 =rank(-hc_94)
egen rankhc95 =rank(-hc_95)
egen rankhc97 =rank(-hc_97)
egen rankhc98 =rank(-hc_98)
egen rankhc99 =rank(-hc_99)
egen rankhc100 =rank(-hc_100)
egen rankhc101 =rank(-hc_101)
egen rankhc102 =rank(-hc_102)
egen rankhc103 =rank(-hc_103)
egen rankhc104 =rank(-hc_104)
egen rankhc105 =rank(-hc_105)
egen rankhc106 =rank(-hc_106)
egen rankhc107 =rank(-hc_107)
egen rankhc112 =rank(-hc_112)
egen rankhc113 =rank(-hc_113)
egen rankhc114 =rank(-hc_114)
egen rankhc115 =rank(-hc_115)
egen rankhc117 =rank(-hc_117)
egen rankhc118 =rank(-hc_118)
egen rankhc124 =rank(-hc_124)

egen rankhc1 =rank(hc_1)
egen rankhc2 =rank(hc_2)
egen rankhc13 =rank(hc_13)
egen rankhc20 =rank(hc_20)
egen rankhc25 =rank(hc_25)
egen rankhc26 =rank(hc_26)
egen rankhc27 =rank(hc_27)
egen rankhc32 =rank(hc_32)
egen rankhc51 =rank(hc_51)
egen rankhc52 =rank(hc_52)
egen rankhc53 =rank(hc_53)
egen rankhc54 =rank(hc_54)
egen rankhc55 =rank(hc_55)
```

```
egen rankhc56 =rank(hc_56)
egen rankhc57 =rank(hc_57)
egen rankhc58 =rank(hc_58)
egen rankhc59 =rank(hc_59)
egen rankhc60 =rank(hc_60)
egen rankhc61 =rank(hc_61)
egen rankhc62 =rank(hc_62)
egen rankhc63 =rank(hc_63)
egen rankhc64 =rank(hc_64)
egen rankhc65 =rank(hc_65)
egen rankhc66 =rank(hc_66)
egen rankhc67 =rank(hc_67)
egen rankhc68 =rank(hc_68)
egen rankhc69 =rank(hc_69)
egen rankhc70 =rank(hc_70)
egen rankhc71 =rank(hc_71)
egen rankhc72 =rank(hc_72)
egen rankhc73 =rank(hc_73)
egen rankhc74 =rank(hc_74)
egen rankhc75 =rank(hc_75)
egen rankhc76 =rank(hc_76)
egen rankhc77 =rank(hc_77)
egen rankhc78 =rank(hc_78)
egen rankhc79 =rank(hc_79)
egen rankhc80 =rank(hc_80)
egen rankhc81 =rank(hc_81)
egen rankhc82 =rank(hc_82)
egen rankhc83 =rank(hc_83)
egen rankhc84 =rank(hc_84)
egen rankhc85 =rank(hc_85)
egen rankhc86 =rank(hc_86)
egen rankhc87 =rank(hc_87)
egen rankhc96 =rank(hc_96)
egen rankhc108 =rank(hc_108)
egen rankhc109 =rank(hc_109)
egen rankhc110 =rank(hc_110)
egen rankhc111 =rank(hc_111)
egen rankhc116 =rank(hc_116)
egen rankhc119 =rank(hc_119)
egen rankhc120 =rank(hc_120)
egen rankhc121 =rank(hc_121)
egen rankhc122 =rank(hc_122)
egen rankhc123 =rank(hc_123)

egen rankchange3 =rank(-change3)
egen rankchange4 =rank(-change4)
egen rankchange5 =rank(-change5)
egen rankchange6 =rank(-change6)
egen rankchange7 =rank(-change7)
egen rankchange8 =rank(-change8)
egen rankchange9 =rank(-change9)
```

```
egen rankchange10 =rank(-change10)
egen rankchange11 =rank(-change11)
egen rankchange12 =rank(-change12)
egen rankchange14 =rank(-change14)
egen rankchange15 =rank(-change15)
egen rankchange16 =rank(-change16)
egen rankchange17 =rank(-change17)
egen rankchange18 =rank(-change18)
egen rankchange19 =rank(-change19)
egen rankchange21 =rank(-change21)
egen rankchange22 =rank(-change22)
egen rankchange23 =rank(-change23)
egen rankchange24 =rank(-change24)
egen rankchange28 =rank(-change28)
egen rankchange29 =rank(-change29)
egen rankchange30 =rank(-change30)
egen rankchange31 =rank(-change31)
egen rankchange33 =rank(-change33)
egen rankchange34 =rank(-change34)
egen rankchange35 =rank(-change35)
egen rankchange36 =rank(-change36)
egen rankchange37 =rank(-change37)
egen rankchange38 =rank(-change38)
egen rankchange39 =rank(-change39)
egen rankchange40 =rank(-change40)
egen rankchange41 =rank(-change41)
egen rankchange42 =rank(-change42)
egen rankchange43 =rank(-change43)
egen rankchange44 =rank(-change44)
egen rankchange45 =rank(-change45)
egen rankchange46 =rank(-change46)
egen rankchange47 =rank(-change47)
egen rankchange49 =rank(-change49)
egen rankchange50 =rank(-change50)
egen rankchange88 =rank(-change88)
egen rankchange89 =rank(-change89)
egen rankchange90 =rank(-change90)
egen rankchange91 =rank(-change91)
egen rankchange92 =rank(-change92)
egen rankchange93 =rank(-change93)
egen rankchange94 =rank(-change94)
egen rankchange95 =rank(-change95)
egen rankchange97 =rank(-change97)
egen rankchange98 =rank(-change98)
egen rankchange99 =rank(-change99)
egen rankchange100 =rank(-change100)
egen rankchange101 =rank(-change101)
egen rankchange102 =rank(-change102)
egen rankchange103 =rank(-change103)
egen rankchange104 =rank(-change104)
egen rankchange105 =rank(-change105)
```

```
egen rankchange106 =rank(-change106)
egen rankchange107 =rank(-change107)
egen rankchange112 =rank(-change112)
egen rankchange113 =rank(-change113)
egen rankchange114 =rank(-change114)
egen rankchange115 =rank(-change115)
egen rankchange117 =rank(-change117)
egen rankchange118 =rank(-change118)
egen rankchange124 =rank(-change124)

egen rankchange1 =rank(change1)
egen rankchange2 =rank(change2)
egen rankchange13 =rank(change13)
egen rankchange20 =rank(change20)
egen rankchange25 =rank(change25)
egen rankchange26 =rank(change26)
egen rankchange27 =rank(change27)
egen rankchange32 =rank(change32)
egen rankchange51 =rank(change51)
egen rankchange52 =rank(change52)
egen rankchange53 =rank(change53)
egen rankchange54 =rank(change54)
egen rankchange55 =rank(change55)
egen rankchange56 =rank(change56)
egen rankchange57 =rank(change57)
egen rankchange58 =rank(change58)
egen rankchange59 =rank(change59)
egen rankchange60 =rank(change60)
egen rankchange61 =rank(change61)
egen rankchange62 =rank(change62)
egen rankchange63 =rank(change63)
egen rankchange64 =rank(change64)
egen rankchange65 =rank(change65)
egen rankchange66 =rank(change66)
egen rankchange67 =rank(change67)
egen rankchange68 =rank(change68)
egen rankchange69 =rank(change69)
egen rankchange70 =rank(change70)
egen rankchange71 =rank(change71)
egen rankchange72 =rank(change72)
egen rankchange73 =rank(change73)
egen rankchange74 =rank(change74)
egen rankchange75 =rank(change75)
egen rankchange76 =rank(change76)
egen rankchange77 =rank(change77)
egen rankchange78 =rank(change78)
egen rankchange79 =rank(change79)
egen rankchange80 =rank(change80)
egen rankchange81 =rank(change81)
egen rankchange82 =rank(change82)
egen rankchange83 =rank(change83)
```

```
egen rankchange84 =rank(change84)
egen rankchange85 =rank(change85)
egen rankchange86 =rank(change86)
egen rankchange87 =rank(change87)
egen rankchange96 =rank(change96)
egen rankchange108 =rank(change108)
egen rankchange109 =rank(change109)
egen rankchange110 =rank(change110)
egen rankchange111 =rank(change111)
egen rankchange116 =rank(change116)
egen rankchange119 =rank(change119)
egen rankchange120 =rank(change120)
egen rankchange121 =rank(change121)
egen rankchange122 =rank(change122)
egen rankchange123 =rank(change123)

**************** Decile
************ NFHS5
forvalues k = 1/47 {
   xtile dec_indfive`k' = p_indfive`k', nq(10)
   }

forvalues k = 49/124 {
   xtile dec_indfive`k' = p_indfive`k', nq(10)
   }

*********** NFHS4

forvalues k = 1/14 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }

forvalues k = 16/17 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }

forvalues k = 19/36 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }

forvalues k = 38/47 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }

   forvalues k = 49/52 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }

   forvalues k = 55/65 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }
```

```
forvalues k = 67/98 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }

forvalues k = 100/103 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }

forvalues k = 105/124 {
   xtile dec_indfour`k' = p_indfour`k', nq(10)
   }

*************** Headcount

forvalues k = 1/47 {
   xtile dec_hc`k' = hc_`k', nq(10)
   }

forvalues k = 49/124 {
   xtile dec_hc`k' = hc_`k', nq(10)
   }

xtile catnegimpr_ind1=change1 if status1==1, nq(2)
xtile catnegimpr_ind2=change2 if status2==1, nq(2)
xtile catnegimpr_ind13=change13 if status13==1, nq(2)
xtile catnegimpr_ind20=change20 if status20==1, nq(2)
xtile catnegimpr_ind25=change25 if status25==1, nq(2)
xtile catnegimpr_ind26=change26 if status26==1, nq(2)
xtile catnegimpr_ind27=change27 if status27==1, nq(2)
xtile catnegimpr_ind32=change32 if status32==1, nq(2)
xtile catnegimpr_ind51=change51 if status51==1, nq(2)
xtile catnegimpr_ind52=change52 if status52==1, nq(2)
xtile catnegimpr_ind55=change55 if status55==1, nq(2)
xtile catnegimpr_ind56=change56 if status56==1, nq(2)
xtile catnegimpr_ind57=change57 if status57==1, nq(2)
xtile catnegimpr_ind58=change58 if status58==1, nq(2)
xtile catnegimpr_ind59=change59 if status59==1, nq(2)
xtile catnegimpr_ind60=change60 if status60==1, nq(2)
xtile catnegimpr_ind61=change61 if status61==1, nq(2)
xtile catnegimpr_ind62=change62 if status62==1, nq(2)
xtile catnegimpr_ind63=change63 if status63==1, nq(2)
xtile catnegimpr_ind64=change64 if status64==1, nq(2)
xtile catnegimpr_ind65=change65 if status65==1, nq(2)
xtile catnegimpr_ind67=change67 if status67==1, nq(2)
xtile catnegimpr_ind68=change68 if status68==1, nq(2)
xtile catnegimpr_ind69=change69 if status69==1, nq(2)
xtile catnegimpr_ind70=change70 if status70==1, nq(2)
xtile catnegimpr_ind71=change71 if status71==1, nq(2)
xtile catnegimpr_ind72=change72 if status72==1, nq(2)
xtile catnegimpr_ind73=change73 if status73==1, nq(2)
```

```
xtile catnegimpr_ind74=change74 if status74==1, nq(2)
xtile catnegimpr_ind75=change75 if status75==1, nq(2)
xtile catnegimpr_ind76=change76 if status76==1, nq(2)
xtile catnegimpr_ind77=change77 if status77==1, nq(2)
xtile catnegimpr_ind78=change78 if status78==1, nq(2)
xtile catnegimpr_ind79=change79 if status79==1, nq(2)
xtile catnegimpr_ind80=change80 if status80==1, nq(2)
xtile catnegimpr_ind81=change81 if status81==1, nq(2)
xtile catnegimpr_ind82=change82 if status82==1, nq(2)
xtile catnegimpr_ind83=change83 if status83==1, nq(2)
xtile catnegimpr_ind84=change84 if status84==1, nq(2)
xtile catnegimpr_ind85=change85 if status85==1, nq(2)
xtile catnegimpr_ind86=change86 if status86==1, nq(2)
xtile catnegimpr_ind87=change87 if status87==1, nq(2)
xtile catnegimpr_ind96=change96 if status96==1, nq(2)
xtile catnegimpr_ind108=change108 if status108==1, nq(2)
xtile catnegimpr_ind109=change109 if status109==1, nq(2)
xtile catnegimpr_ind110=change110 if status110==1, nq(2)
xtile catnegimpr_ind111=change111 if status111==1, nq(2)
xtile catnegimpr_ind116=change116 if status116==1, nq(2)
xtile catnegimpr_ind119=change119 if status119==1, nq(2)
xtile catnegimpr_ind120=change120 if status120==1, nq(2)
xtile catnegimpr_ind121=change121 if status121==1, nq(2)
xtile catnegimpr_ind122=change122 if status122==1, nq(2)
xtile catnegimpr_ind123=change123 if status123==1, nq(2)

xtile catposworse_ind1=change1 if status1==3, nq(2)
xtile catposworse_ind2=change2 if status2==3, nq(2)
xtile catposworse_ind13=change13 if status13==3, nq(2)
xtile catposworse_ind20=change20 if status20==3, nq(2)
xtile catposworse_ind25=change25 if status25==3, nq(2)
xtile catposworse_ind26=change26 if status26==3, nq(2)
xtile catposworse_ind27=change27 if status27==3, nq(2)
xtile catposworse_ind32=change32 if status32==3, nq(2)
xtile catposworse_ind51=change51 if status51==3, nq(2)
xtile catposworse_ind52=change52 if status52==3, nq(2)
xtile catposworse_ind55=change55 if status55==3, nq(2)
xtile catposworse_ind56=change56 if status56==3, nq(2)
xtile catposworse_ind57=change57 if status57==3, nq(2)
xtile catposworse_ind58=change58 if status58==3, nq(2)
xtile catposworse_ind59=change59 if status59==3, nq(2)
xtile catposworse_ind60=change60 if status60==3, nq(2)
xtile catposworse_ind61=change61 if status61==3, nq(2)
xtile catposworse_ind62=change62 if status62==3, nq(2)
xtile catposworse_ind63=change63 if status63==3, nq(2)
xtile catposworse_ind64=change64 if status64==3, nq(2)
xtile catposworse_ind65=change65 if status65==3, nq(2)
xtile catposworse_ind67=change67 if status67==3, nq(2)
xtile catposworse_ind68=change68 if status68==3, nq(2)
xtile catposworse_ind69=change69 if status69==3, nq(2)
xtile catposworse_ind70=change70 if status70==3, nq(2)
```

```
xtile catposworse_ind71=change71 if status71==3, nq(2)
xtile catposworse_ind72=change72 if status72==3, nq(2)
xtile catposworse_ind73=change73 if status73==3, nq(2)
xtile catposworse_ind74=change74 if status74==3, nq(2)
xtile catposworse_ind75=change75 if status75==3, nq(2)
xtile catposworse_ind76=change76 if status76==3, nq(2)
xtile catposworse_ind77=change77 if status77==3, nq(2)
xtile catposworse_ind78=change78 if status78==3, nq(2)
xtile catposworse_ind79=change79 if status79==3, nq(2)
xtile catposworse_ind80=change80 if status80==3, nq(2)
xtile catposworse_ind81=change81 if status81==3, nq(2)
xtile catposworse_ind82=change82 if status82==3, nq(2)
xtile catposworse_ind83=change83 if status83==3, nq(2)
xtile catposworse_ind84=change84 if status84==3, nq(2)
xtile catposworse_ind85=change85 if status85==3, nq(2)
xtile catposworse_ind86=change86 if status86==3, nq(2)
xtile catposworse_ind87=change87 if status87==3, nq(2)
xtile catposworse_ind96=change96 if status96==3, nq(2)
xtile catposworse_ind108=change108 if status108==3, nq(2)
xtile catposworse_ind109=change109 if status109==3, nq(2)
xtile catposworse_ind110=change110 if status110==3, nq(2)
xtile catposworse_ind111=change111 if status111==3, nq(2)
xtile catposworse_ind116=change116 if status116==3, nq(2)
xtile catposworse_ind119=change119 if status119==3, nq(2)
xtile catposworse_ind120=change120 if status120==3, nq(2)
xtile catposworse_ind121=change121 if status121==3, nq(2)
xtile catposworse_ind122=change122 if status122==3, nq(2)
xtile catposworse_ind123=change123 if status123==3, nq(2)

xtile catposimpr_ind3=change3 if status3==2, nq(2)
xtile catposimpr_ind4=change4 if status4==2, nq(2)
xtile catposimpr_ind5=change5 if status5==2, nq(2)
xtile catposimpr_ind6=change6 if status6==2, nq(2)
xtile catposimpr_ind7=change7 if status7==2, nq(2)
xtile catposimpr_ind8=change8 if status8==2, nq(2)
xtile catposimpr_ind9=change9 if status9==2, nq(2)
xtile catposimpr_ind10=change10 if status10==2, nq(2)
xtile catposimpr_ind11=change11 if status11==2, nq(2)
xtile catposimpr_ind12=change12 if status12==2, nq(2)
xtile catposimpr_ind14=change14 if status14==2, nq(2)
xtile catposimpr_ind16=change16 if status16==2, nq(2)
xtile catposimpr_ind17=change17 if status17==2, nq(2)
xtile catposimpr_ind19=change19 if status19==2, nq(2)
xtile catposimpr_ind21=change21 if status21==2, nq(2)
xtile catposimpr_ind22=change22 if status22==2, nq(2)
xtile catposimpr_ind23=change23 if status23==2, nq(2)
xtile catposimpr_ind24=change24 if status24==2, nq(2)
xtile catposimpr_ind28=change28 if status28==2, nq(2)
xtile catposimpr_ind29=change29 if status29==2, nq(2)
xtile catposimpr_ind30=change30 if status30==2, nq(2)
xtile catposimpr_ind31=change31 if status31==2, nq(2)
```

```
xtile catposimpr_ind33=change33 if status33==2, nq(2)
xtile catposimpr_ind34=change34 if status34==2, nq(2)
xtile catposimpr_ind35=change35 if status35==2, nq(2)
xtile catposimpr_ind36=change36 if status36==2, nq(2)
xtile catposimpr_ind38=change38 if status38==2, nq(2)
xtile catposimpr_ind39=change39 if status39==2, nq(2)
xtile catposimpr_ind40=change40 if status40==2, nq(2)
xtile catposimpr_ind41=change41 if status41==2, nq(2)
xtile catposimpr_ind42=change42 if status42==2, nq(2)
xtile catposimpr_ind43=change43 if status43==2, nq(2)
xtile catposimpr_ind44=change44 if status44==2, nq(2)
xtile catposimpr_ind45=change45 if status45==2, nq(2)
xtile catposimpr_ind46=change46 if status46==2, nq(2)
xtile catposimpr_ind47=change47 if status47==2, nq(2)
xtile catposimpr_ind49=change49 if status49==2, nq(2)
xtile catposimpr_ind50=change50 if status50==2, nq(2)
xtile catposimpr_ind88=change88 if status88==2, nq(2)
xtile catposimpr_ind89=change89 if status89==2, nq(2)
xtile catposimpr_ind90=change90 if status90==2, nq(2)
xtile catposimpr_ind91=change91 if status91==2, nq(2)
xtile catposimpr_ind92=change92 if status92==2, nq(2)
xtile catposimpr_ind93=change93 if status93==2, nq(2)
xtile catposimpr_ind94=change94 if status94==2, nq(2)
xtile catposimpr_ind95=change95 if status95==2, nq(2)
xtile catposimpr_ind97=change97 if status97==2, nq(2)
xtile catposimpr_ind98=change98 if status98==2, nq(2)
xtile catposimpr_ind100=change100 if status100==2, nq(2)
xtile catposimpr_ind101=change101 if status101==2, nq(2)
xtile catposimpr_ind102=change102 if status102==2, nq(2)
xtile catposimpr_ind103=change103 if status103==2, nq(2)
xtile catposimpr_ind105=change105 if status105==2, nq(2)
xtile catposimpr_ind106=change106 if status106==2, nq(2)
xtile catposimpr_ind107=change107 if status107==2, nq(2)
xtile catposimpr_ind112=change112 if status112==2, nq(2)
xtile catposimpr_ind113=change113 if status113==2, nq(2)
xtile catposimpr_ind114=change114 if status114==2, nq(2)
xtile catposimpr_ind115=change115 if status115==2, nq(2)
xtile catposimpr_ind117=change117 if status117==2, nq(2)
xtile catposimpr_ind118=change118 if status118==2, nq(2)
xtile catposimpr_ind124=change124 if status124==2, nq(2)

xtile catnegworse_ind3=change3 if status3==4, nq(2)
xtile catnegworse_ind4=change4 if status4==4, nq(2)
xtile catnegworse_ind5=change5 if status5==4, nq(2)
xtile catnegworse_ind6=change6 if status6==4, nq(2)
xtile catnegworse_ind7=change7 if status7==4, nq(2)
xtile catnegworse_ind8=change8 if status8==4, nq(2)
xtile catnegworse_ind9=change9 if status9==4, nq(2)
xtile catnegworse_ind10=change10 if status10==4, nq(2)
xtile catnegworse_ind11=change11 if status11==4, nq(2)
xtile catnegworse_ind12=change12 if status12==4, nq(2)
```

```
xtile catnegworse_ind14=change14 if status14==4, nq(2)
xtile catnegworse_ind16=change16 if status16==4, nq(2)
xtile catnegworse_ind17=change17 if status17==4, nq(2)
xtile catnegworse_ind19=change19 if status19==4, nq(2)
xtile catnegworse_ind21=change21 if status21==4, nq(2)
xtile catnegworse_ind22=change22 if status22==4, nq(2)
xtile catnegworse_ind23=change23 if status23==4, nq(2)
xtile catnegworse_ind24=change24 if status24==4, nq(2)
xtile catnegworse_ind28=change28 if status28==4, nq(2)
xtile catnegworse_ind29=change29 if status29==4, nq(2)
xtile catnegworse_ind30=change30 if status30==4, nq(2)
xtile catnegworse_ind31=change31 if status31==4, nq(2)
xtile catnegworse_ind33=change33 if status33==4, nq(2)
xtile catnegworse_ind34=change34 if status34==4, nq(2)
xtile catnegworse_ind35=change35 if status35==4, nq(2)
xtile catnegworse_ind36=change36 if status36==4, nq(2)
xtile catnegworse_ind38=change38 if status38==4, nq(2)
xtile catnegworse_ind39=change39 if status39==4, nq(2)
xtile catnegworse_ind40=change40 if status40==4, nq(2)
xtile catnegworse_ind41=change41 if status41==4, nq(2)
xtile catnegworse_ind42=change42 if status42==4, nq(2)
xtile catnegworse_ind43=change43 if status43==4, nq(2)
xtile catnegworse_ind44=change44 if status44==4, nq(2)
xtile catnegworse_ind45=change45 if status45==4, nq(2)
xtile catnegworse_ind46=change46 if status46==4, nq(2)
xtile catnegworse_ind47=change47 if status47==4, nq(2)
xtile catnegworse_ind49=change49 if status49==4, nq(2)
xtile catnegworse_ind50=change50 if status50==4, nq(2)
xtile catnegworse_ind88=change88 if status88==4, nq(2)
xtile catnegworse_ind89=change89 if status89==4, nq(2)
xtile catnegworse_ind90=change90 if status90==4, nq(2)
xtile catnegworse_ind91=change91 if status91==4, nq(2)
xtile catnegworse_ind92=change92 if status92==4, nq(2)
xtile catnegworse_ind93=change93 if status93==4, nq(2)
xtile catnegworse_ind94=change94 if status94==4, nq(2)
xtile catnegworse_ind95=change95 if status95==4, nq(2)
xtile catnegworse_ind97=change97 if status97==4, nq(2)
xtile catnegworse_ind98=change98 if status98==4, nq(2)
xtile catnegworse_ind100=change100 if status100==4, nq(2)
xtile catnegworse_ind101=change101 if status101==4, nq(2)
xtile catnegworse_ind102=change102 if status102==4, nq(2)
xtile catnegworse_ind103=change103 if status103==4, nq(2)
xtile catnegworse_ind105=change105 if status105==4, nq(2)
xtile catnegworse_ind106=change106 if status106==4, nq(2)
xtile catnegworse_ind107=change107 if status107==4, nq(2)
xtile catnegworse_ind112=change112 if status112==4, nq(2)
xtile catnegworse_ind113=change113 if status113==4, nq(2)
xtile catnegworse_ind114=change114 if status114==4, nq(2)
xtile catnegworse_ind115=change115 if status115==4, nq(2)
xtile catnegworse_ind117=change117 if status117==4, nq(2)
xtile catnegworse_ind118=change118 if status118==4, nq(2)
```

```
xtile catnegworse_ind124=change124 if status124==4, nq(2)


gen catfinal1=1 if catnegimpr_ind1==1 &  status1==1
gen catfinal2=1 if catnegimpr_ind2==1 &  status2==1
gen catfinal13=1 if catnegimpr_ind13==1 &  status13==1
gen catfinal20=1 if catnegimpr_ind20==1 &  status20==1
gen catfinal25=1 if catnegimpr_ind25==1 &  status25==1
gen catfinal26=1 if catnegimpr_ind26==1 &  status26==1
gen catfinal27=1 if catnegimpr_ind27==1 &  status27==1
gen catfinal32=1 if catnegimpr_ind32==1 &  status32==1
gen catfinal51=1 if catnegimpr_ind51==1 &  status51==1
gen catfinal52=1 if catnegimpr_ind52==1 &  status52==1
gen catfinal55=1 if catnegimpr_ind55==1 &  status55==1
gen catfinal56=1 if catnegimpr_ind56==1 &  status56==1
gen catfinal57=1 if catnegimpr_ind57==1 &  status57==1
gen catfinal58=1 if catnegimpr_ind58==1 &  status58==1
gen catfinal59=1 if catnegimpr_ind59==1 &  status59==1
gen catfinal60=1 if catnegimpr_ind60==1 &  status60==1
gen catfinal61=1 if catnegimpr_ind61==1 &  status61==1
gen catfinal62=1 if catnegimpr_ind62==1 &  status62==1
gen catfinal63=1 if catnegimpr_ind63==1 &  status63==1
gen catfinal64=1 if catnegimpr_ind64==1 &  status64==1
gen catfinal65=1 if catnegimpr_ind65==1 &  status65==1
gen catfinal67=1 if catnegimpr_ind67==1 &  status67==1
gen catfinal68=1 if catnegimpr_ind68==1 &  status68==1
gen catfinal69=1 if catnegimpr_ind69==1 &  status69==1
gen catfinal70=1 if catnegimpr_ind70==1 &  status70==1
gen catfinal71=1 if catnegimpr_ind71==1 &  status71==1
gen catfinal72=1 if catnegimpr_ind72==1 &  status72==1
gen catfinal73=1 if catnegimpr_ind73==1 &  status73==1
gen catfinal74=1 if catnegimpr_ind74==1 &  status74==1
gen catfinal75=1 if catnegimpr_ind75==1 &  status75==1
gen catfinal76=1 if catnegimpr_ind76==1 &  status76==1
gen catfinal77=1 if catnegimpr_ind77==1 &  status77==1
gen catfinal78=1 if catnegimpr_ind78==1 &  status78==1
gen catfinal79=1 if catnegimpr_ind79==1 &  status79==1
gen catfinal80=1 if catnegimpr_ind80==1 &  status80==1
gen catfinal81=1 if catnegimpr_ind81==1 &  status81==1
gen catfinal82=1 if catnegimpr_ind82==1 &  status82==1
gen catfinal83=1 if catnegimpr_ind83==1 &  status83==1
gen catfinal84=1 if catnegimpr_ind84==1 &  status84==1
gen catfinal85=1 if catnegimpr_ind85==1 &  status85==1
gen catfinal86=1 if catnegimpr_ind86==1 &  status86==1
gen catfinal87=1 if catnegimpr_ind87==1 &  status87==1
gen catfinal96=1 if catnegimpr_ind96==1 &  status96==1
gen catfinal108=1 if catnegimpr_ind108==1 &  status108==1
gen catfinal109=1 if catnegimpr_ind109==1 &  status109==1
gen catfinal110=1 if catnegimpr_ind110==1 &  status110==1
gen catfinal111=1 if catnegimpr_ind111==1 &  status111==1
gen catfinal116=1 if catnegimpr_ind116==1 &  status116==1
```

```
gen catfinal119=1 if catnegimpr_ind119==1 &  status119==1
gen catfinal120=1 if catnegimpr_ind120==1 &  status120==1
gen catfinal121=1 if catnegimpr_ind121==1 &  status121==1
gen catfinal122=1 if catnegimpr_ind122==1 &  status122==1
gen catfinal123=1 if catnegimpr_ind123==1 &  status123==1

replace catfinal1=2 if catnegimpr_ind1==2 &  status1==1
replace catfinal2=2 if catnegimpr_ind2==2 &  status2==1
replace catfinal13=2 if catnegimpr_ind13==2 &  status13==1
replace catfinal20=2 if catnegimpr_ind20==2 &  status20==1
replace catfinal25=2 if catnegimpr_ind25==2 &  status25==1
replace catfinal26=2 if catnegimpr_ind26==2 &  status26==1
replace catfinal27=2 if catnegimpr_ind27==2 &  status27==1
replace catfinal32=2 if catnegimpr_ind32==2 &  status32==1
replace catfinal51=2 if catnegimpr_ind51==2 &  status51==1
replace catfinal52=2 if catnegimpr_ind52==2 &  status52==1
replace catfinal55=2 if catnegimpr_ind55==2 &  status55==1
replace catfinal56=2 if catnegimpr_ind56==2 &  status56==1
replace catfinal57=2 if catnegimpr_ind57==2 &  status57==1
replace catfinal58=2 if catnegimpr_ind58==2 &  status58==1
replace catfinal59=2 if catnegimpr_ind59==2 &  status59==1
replace catfinal60=2 if catnegimpr_ind60==2 &  status60==1
replace catfinal61=2 if catnegimpr_ind61==2 &  status61==1
replace catfinal62=2 if catnegimpr_ind62==2 &  status62==1
replace catfinal63=2 if catnegimpr_ind63==2 &  status63==1
replace catfinal64=2 if catnegimpr_ind64==2 &  status64==1
replace catfinal65=2 if catnegimpr_ind65==2 &  status65==1
replace catfinal67=2 if catnegimpr_ind67==2 &  status67==1
replace catfinal68=2 if catnegimpr_ind68==2 &  status68==1
replace catfinal69=2 if catnegimpr_ind69==2 &  status69==1
replace catfinal70=2 if catnegimpr_ind70==2 &  status70==1
replace catfinal71=2 if catnegimpr_ind71==2 &  status71==1
replace catfinal72=2 if catnegimpr_ind72==2 &  status72==1
replace catfinal73=2 if catnegimpr_ind73==2 &  status73==1
replace catfinal74=2 if catnegimpr_ind74==2 &  status74==1
replace catfinal75=2 if catnegimpr_ind75==2 &  status75==1
replace catfinal76=2 if catnegimpr_ind76==2 &  status76==1
replace catfinal77=2 if catnegimpr_ind77==2 &  status77==1
replace catfinal78=2 if catnegimpr_ind78==2 &  status78==1
replace catfinal79=2 if catnegimpr_ind79==2 &  status79==1
replace catfinal80=2 if catnegimpr_ind80==2 &  status80==1
replace catfinal81=2 if catnegimpr_ind81==2 &  status81==1
replace catfinal82=2 if catnegimpr_ind82==2 &  status82==1
replace catfinal83=2 if catnegimpr_ind83==2 &  status83==1
replace catfinal84=2 if catnegimpr_ind84==2 &  status84==1
replace catfinal85=2 if catnegimpr_ind85==2 &  status85==1
replace catfinal86=2 if catnegimpr_ind86==2 &  status86==1
replace catfinal87=2 if catnegimpr_ind87==2 &  status87==1
replace catfinal96=2 if catnegimpr_ind96==2 &  status96==1
replace catfinal108=2 if catnegimpr_ind108==2 &  status108==1
replace catfinal109=2 if catnegimpr_ind109==2 &  status109==1
```

```
replace catfinal110=2 if catnegimpr_ind110==2 &  status110==1
replace catfinal111=2 if catnegimpr_ind111==2 &  status111==1
replace catfinal116=2 if catnegimpr_ind116==2 &  status116==1
replace catfinal119=2 if catnegimpr_ind119==2 &  status119==1
replace catfinal120=2 if catnegimpr_ind120==2 &  status120==1
replace catfinal121=2 if catnegimpr_ind121==2 &  status121==1
replace catfinal122=2 if catnegimpr_ind122==2 &  status122==1
replace catfinal123=2 if catnegimpr_ind123==2 &  status123==1


replace catfinal1=3 if catposworse_ind1==1 &  status1==3
replace catfinal2=3 if catposworse_ind2==1 &  status2==3
replace catfinal13=3 if catposworse_ind13==1 &  status13==3
replace catfinal20=3 if catposworse_ind20==1 &  status20==3
replace catfinal25=3 if catposworse_ind25==1 &  status25==3
replace catfinal26=3 if catposworse_ind26==1 &  status26==3
replace catfinal27=3 if catposworse_ind27==1 &  status27==3
replace catfinal32=3 if catposworse_ind32==1 &  status32==3
replace catfinal51=3 if catposworse_ind51==1 &  status51==3
replace catfinal52=3 if catposworse_ind52==1 &  status52==3
replace catfinal55=3 if catposworse_ind55==1 &  status55==3
replace catfinal56=3 if catposworse_ind56==1 &  status56==3
replace catfinal57=3 if catposworse_ind57==1 &  status57==3
replace catfinal58=3 if catposworse_ind58==1 &  status58==3
replace catfinal59=3 if catposworse_ind59==1 &  status59==3
replace catfinal60=3 if catposworse_ind60==1 &  status60==3
replace catfinal61=3 if catposworse_ind61==1 &  status61==3
replace catfinal62=3 if catposworse_ind62==1 &  status62==3
replace catfinal63=3 if catposworse_ind63==1 &  status63==3
replace catfinal64=3 if catposworse_ind64==1 &  status64==3
replace catfinal65=3 if catposworse_ind65==1 &  status65==3
replace catfinal67=3 if catposworse_ind67==1 &  status67==3
replace catfinal68=3 if catposworse_ind68==1 &  status68==3
replace catfinal69=3 if catposworse_ind69==1 &  status69==3
replace catfinal70=3 if catposworse_ind70==1 &  status70==3
replace catfinal71=3 if catposworse_ind71==1 &  status71==3
replace catfinal72=3 if catposworse_ind72==1 &  status72==3
replace catfinal73=3 if catposworse_ind73==1 &  status73==3
replace catfinal74=3 if catposworse_ind74==1 &  status74==3
replace catfinal75=3 if catposworse_ind75==1 &  status75==3
replace catfinal76=3 if catposworse_ind76==1 &  status76==3
replace catfinal77=3 if catposworse_ind77==1 &  status77==3
replace catfinal78=3 if catposworse_ind78==1 &  status78==3
replace catfinal79=3 if catposworse_ind79==1 &  status79==3
replace catfinal80=3 if catposworse_ind80==1 &  status80==3
replace catfinal81=3 if catposworse_ind81==1 &  status81==3
replace catfinal82=3 if catposworse_ind82==1 &  status82==3
replace catfinal83=3 if catposworse_ind83==1 &  status83==3
replace catfinal84=3 if catposworse_ind84==1 &  status84==3
replace catfinal85=3 if catposworse_ind85==1 &  status85==3
replace catfinal86=3 if catposworse_ind86==1 &  status86==3
```

```
replace catfinal87=3 if catposworse_ind87==1 &  status87==3
replace catfinal96=3 if catposworse_ind96==1 &  status96==3
replace catfinal108=3 if catposworse_ind108==1 &  status108==3
replace catfinal109=3 if catposworse_ind109==1 &  status109==3
replace catfinal110=3 if catposworse_ind110==1 &  status110==3
replace catfinal111=3 if catposworse_ind111==1 &  status111==3
replace catfinal116=3 if catposworse_ind116==1 &  status116==3
replace catfinal119=3 if catposworse_ind119==1 &  status119==3
replace catfinal120=3 if catposworse_ind120==1 &  status120==3
replace catfinal121=3 if catposworse_ind121==1 &  status121==3
replace catfinal122=3 if catposworse_ind122==1 &  status122==3
replace catfinal123=3 if catposworse_ind123==1 &  status123==3


replace catfinal1=4 if catposworse_ind1==2 &  status1==3
replace catfinal2=4 if catposworse_ind2==2 &  status2==3
replace catfinal13=4 if catposworse_ind13==2 &  status13==3
replace catfinal20=4 if catposworse_ind20==2 &  status20==3
replace catfinal25=4 if catposworse_ind25==2 &  status25==3
replace catfinal26=4 if catposworse_ind26==2 &  status26==3
replace catfinal27=4 if catposworse_ind27==2 &  status27==3
replace catfinal32=4 if catposworse_ind32==2 &  status32==3
replace catfinal51=4 if catposworse_ind51==2 &  status51==3
replace catfinal52=4 if catposworse_ind52==2 &  status52==3
replace catfinal55=4 if catposworse_ind55==2 &  status55==3
replace catfinal56=4 if catposworse_ind56==2 &  status56==3
replace catfinal57=4 if catposworse_ind57==2 &  status57==3
replace catfinal58=4 if catposworse_ind58==2 &  status58==3
replace catfinal59=4 if catposworse_ind59==2 &  status59==3
replace catfinal60=4 if catposworse_ind60==2 &  status60==3
replace catfinal61=4 if catposworse_ind61==2 &  status61==3
replace catfinal62=4 if catposworse_ind62==2 &  status62==3
replace catfinal63=4 if catposworse_ind63==2 &  status63==3
replace catfinal64=4 if catposworse_ind64==2 &  status64==3
replace catfinal65=4 if catposworse_ind65==2 &  status65==3
replace catfinal67=4 if catposworse_ind67==2 &  status67==3
replace catfinal68=4 if catposworse_ind68==2 &  status68==3
replace catfinal69=4 if catposworse_ind69==2 &  status69==3
replace catfinal70=4 if catposworse_ind70==2 &  status70==3
replace catfinal71=4 if catposworse_ind71==2 &  status71==3
replace catfinal72=4 if catposworse_ind72==2 &  status72==3
replace catfinal73=4 if catposworse_ind73==2 &  status73==3
replace catfinal74=4 if catposworse_ind74==2 &  status74==3
replace catfinal75=4 if catposworse_ind75==2 &  status75==3
replace catfinal76=4 if catposworse_ind76==2 &  status76==3
replace catfinal77=4 if catposworse_ind77==2 &  status77==3
replace catfinal78=4 if catposworse_ind78==2 &  status78==3
replace catfinal79=4 if catposworse_ind79==2 &  status79==3
replace catfinal80=4 if catposworse_ind80==2 &  status80==3
replace catfinal81=4 if catposworse_ind81==2 &  status81==3
replace catfinal82=4 if catposworse_ind82==2 &  status82==3
```

```
replace catfinal83=4 if catposworse_ind83==2 &  status83==3
replace catfinal84=4 if catposworse_ind84==2 &  status84==3
replace catfinal85=4 if catposworse_ind85==2 &  status85==3
replace catfinal86=4 if catposworse_ind86==2 &  status86==3
replace catfinal87=4 if catposworse_ind87==2 &  status87==3
replace catfinal96=4 if catposworse_ind96==2 &  status96==3
replace catfinal108=4 if catposworse_ind108==2 &  status108==3
replace catfinal109=4 if catposworse_ind109==2 &  status109==3
replace catfinal110=4 if catposworse_ind110==2 &  status110==3
replace catfinal111=4 if catposworse_ind111==2 &  status111==3
replace catfinal116=4 if catposworse_ind116==2 &  status116==3
replace catfinal119=4 if catposworse_ind119==2 &  status119==3
replace catfinal120=4 if catposworse_ind120==2 &  status120==3
replace catfinal121=4 if catposworse_ind121==2 &  status121==3
replace catfinal122=4 if catposworse_ind122==2 &  status122==3
replace catfinal123=4 if catposworse_ind123==2 &  status123==3

gen  catfinal3=1 if catposimpr_ind3==2 &  status3==2
gen  catfinal4=1 if catposimpr_ind4==2 &  status4==2
gen  catfinal5=1 if catposimpr_ind5==2 &  status5==2
gen  catfinal6=1 if catposimpr_ind6==2 &  status6==2
gen  catfinal7=1 if catposimpr_ind7==2 &  status7==2
gen  catfinal8=1 if catposimpr_ind8==2 &  status8==2
gen  catfinal9=1 if catposimpr_ind9==2 &  status9==2
gen  catfinal10=1 if catposimpr_ind10==2 &  status10==2
gen  catfinal11=1 if catposimpr_ind11==2 &  status11==2
gen  catfinal12=1 if catposimpr_ind12==2 &  status12==2
gen  catfinal14=1 if catposimpr_ind14==2 &  status14==2
gen  catfinal16=1 if catposimpr_ind16==2 &  status16==2
gen  catfinal17=1 if catposimpr_ind17==2 &  status17==2
gen  catfinal19=1 if catposimpr_ind19==2 &  status19==2
gen  catfinal21=1 if catposimpr_ind21==2 &  status21==2
gen  catfinal22=1 if catposimpr_ind22==2 &  status22==2
gen  catfinal23=1 if catposimpr_ind23==2 &  status23==2
gen  catfinal24=1 if catposimpr_ind24==2 &  status24==2
gen  catfinal28=1 if catposimpr_ind28==2 &  status28==2
gen  catfinal29=1 if catposimpr_ind29==2 &  status29==2
gen  catfinal30=1 if catposimpr_ind30==2 &  status30==2
gen  catfinal31=1 if catposimpr_ind31==2 &  status31==2
gen  catfinal33=1 if catposimpr_ind33==2 &  status33==2
gen  catfinal34=1 if catposimpr_ind34==2 &  status34==2
gen  catfinal35=1 if catposimpr_ind35==2 &  status35==2
gen  catfinal36=1 if catposimpr_ind36==2 &  status36==2
gen  catfinal38=1 if catposimpr_ind38==2 &  status38==2
gen  catfinal39=1 if catposimpr_ind39==2 &  status39==2
gen  catfinal40=1 if catposimpr_ind40==2 &  status40==2
gen  catfinal41=1 if catposimpr_ind41==2 &  status41==2
gen  catfinal42=1 if catposimpr_ind42==2 &  status42==2
gen  catfinal43=1 if catposimpr_ind43==2 &  status43==2
gen  catfinal44=1 if catposimpr_ind44==2 &  status44==2
gen  catfinal45=1 if catposimpr_ind45==2 &  status45==2
```

```
gen  catfinal46=1 if catposimpr_ind46==2 &  status46==2
gen  catfinal47=1 if catposimpr_ind47==2 &  status47==2
gen  catfinal49=1 if catposimpr_ind49==2 &  status49==2
gen  catfinal50=1 if catposimpr_ind50==2 &  status50==2
gen  catfinal88=1 if catposimpr_ind88==2 &  status88==2
gen  catfinal89=1 if catposimpr_ind89==2 &  status89==2
gen  catfinal90=1 if catposimpr_ind90==2 &  status90==2
gen  catfinal91=1 if catposimpr_ind91==2 &  status91==2
gen  catfinal92=1 if catposimpr_ind92==2 &  status92==2
gen  catfinal93=1 if catposimpr_ind93==2 &  status93==2
gen  catfinal94=1 if catposimpr_ind94==2 &  status94==2
gen  catfinal95=1 if catposimpr_ind95==2 &  status95==2
gen  catfinal97=1 if catposimpr_ind97==2 &  status97==2
gen  catfinal98=1 if catposimpr_ind98==2 &  status98==2
gen  catfinal100=1 if catposimpr_ind100==2 &  status100==2
gen  catfinal101=1 if catposimpr_ind101==2 &  status101==2
gen  catfinal102=1 if catposimpr_ind102==2 &  status102==2
gen  catfinal103=1 if catposimpr_ind103==2 &  status103==2
gen  catfinal105=1 if catposimpr_ind105==2 &  status105==2
gen  catfinal106=1 if catposimpr_ind106==2 &  status106==2
gen  catfinal107=1 if catposimpr_ind107==2 &  status107==2
gen  catfinal112=1 if catposimpr_ind112==2 &  status112==2
gen  catfinal113=1 if catposimpr_ind113==2 &  status113==2
gen  catfinal114=1 if catposimpr_ind114==2 &  status114==2
gen  catfinal115=1 if catposimpr_ind115==2 &  status115==2
gen  catfinal117=1 if catposimpr_ind117==2 &  status117==2
gen  catfinal118=1 if catposimpr_ind118==2 &  status118==2
gen  catfinal124=1 if catposimpr_ind124==2 &  status124==2

replace catfinal3=2 if catposimpr_ind3==1 &  status3==2
replace catfinal4=2 if catposimpr_ind4==1 &  status4==2
replace catfinal5=2 if catposimpr_ind5==1 &  status5==2
replace catfinal6=2 if catposimpr_ind6==1 &  status6==2
replace catfinal7=2 if catposimpr_ind7==1 &  status7==2
replace catfinal8=2 if catposimpr_ind8==1 &  status8==2
replace catfinal9=2 if catposimpr_ind9==1 &  status9==2
replace catfinal10=2 if catposimpr_ind10==1 &  status10==2
replace catfinal11=2 if catposimpr_ind11==1 &  status11==2
replace catfinal12=2 if catposimpr_ind12==1 &  status12==2
replace catfinal14=2 if catposimpr_ind14==1 &  status14==2
replace catfinal16=2 if catposimpr_ind16==1 &  status16==2
replace catfinal17=2 if catposimpr_ind17==1 &  status17==2
replace catfinal19=2 if catposimpr_ind19==1 &  status19==2
replace catfinal21=2 if catposimpr_ind21==1 &  status21==2
replace catfinal22=2 if catposimpr_ind22==1 &  status22==2
replace catfinal23=2 if catposimpr_ind23==1 &  status23==2
replace catfinal24=2 if catposimpr_ind24==1 &  status24==2
replace catfinal28=2 if catposimpr_ind28==1 &  status28==2
replace catfinal29=2 if catposimpr_ind29==1 &  status29==2
replace catfinal30=2 if catposimpr_ind30==1 &  status30==2
replace catfinal31=2 if catposimpr_ind31==1 &  status31==2
```

```
replace catfinal33=2 if catposimpr_ind33==1 &  status33==2
replace catfinal34=2 if catposimpr_ind34==1 &  status34==2
replace catfinal35=2 if catposimpr_ind35==1 &  status35==2
replace catfinal36=2 if catposimpr_ind36==1 &  status36==2
replace catfinal38=2 if catposimpr_ind38==1 &  status38==2
replace catfinal39=2 if catposimpr_ind39==1 &  status39==2
replace catfinal40=2 if catposimpr_ind40==1 &  status40==2
replace catfinal41=2 if catposimpr_ind41==1 &  status41==2
replace catfinal42=2 if catposimpr_ind42==1 &  status42==2
replace catfinal43=2 if catposimpr_ind43==1 &  status43==2
replace catfinal44=2 if catposimpr_ind44==1 &  status44==2
replace catfinal45=2 if catposimpr_ind45==1 &  status45==2
replace catfinal46=2 if catposimpr_ind46==1 &  status46==2
replace catfinal47=2 if catposimpr_ind47==1 &  status47==2
replace catfinal49=2 if catposimpr_ind49==1 &  status49==2
replace catfinal50=2 if catposimpr_ind50==1 &  status50==2
replace catfinal88=2 if catposimpr_ind88==1 &  status88==2
replace catfinal89=2 if catposimpr_ind89==1 &  status89==2
replace catfinal90=2 if catposimpr_ind90==1 &  status90==2
replace catfinal91=2 if catposimpr_ind91==1 &  status91==2
replace catfinal92=2 if catposimpr_ind92==1 &  status92==2
replace catfinal93=2 if catposimpr_ind93==1 &  status93==2
replace catfinal94=2 if catposimpr_ind94==1 &  status94==2
replace catfinal95=2 if catposimpr_ind95==1 &  status95==2
replace catfinal97=2 if catposimpr_ind97==1 &  status97==2
replace catfinal98=2 if catposimpr_ind98==1 &  status98==2
replace catfinal100=2 if catposimpr_ind100==1 &  status100==2
replace catfinal101=2 if catposimpr_ind101==1 &  status101==2
replace catfinal102=2 if catposimpr_ind102==1 &  status102==2
replace catfinal103=2 if catposimpr_ind103==1 &  status103==2
replace catfinal105=2 if catposimpr_ind105==1 &  status105==2
replace catfinal106=2 if catposimpr_ind106==1 &  status106==2
replace catfinal107=2 if catposimpr_ind107==1 &  status107==2
replace catfinal112=2 if catposimpr_ind112==1 &  status112==2
replace catfinal113=2 if catposimpr_ind113==1 &  status113==2
replace catfinal114=2 if catposimpr_ind114==1 &  status114==2
replace catfinal115=2 if catposimpr_ind115==1 &  status115==2
replace catfinal117=2 if catposimpr_ind117==1 &  status117==2
replace catfinal118=2 if catposimpr_ind118==1 &  status118==2
replace catfinal124=2 if catposimpr_ind124==1 &  status124==2

replace catfinal3=4 if catnegworse_ind3==1 &  status3==4
replace catfinal4=4 if catnegworse_ind4==1 &  status4==4
replace catfinal5=4 if catnegworse_ind5==1 &  status5==4
replace catfinal6=4 if catnegworse_ind6==1 &  status6==4
replace catfinal7=4 if catnegworse_ind7==1 &  status7==4
replace catfinal8=4 if catnegworse_ind8==1 &  status8==4
replace catfinal9=4 if catnegworse_ind9==1 &  status9==4
replace catfinal10=4 if catnegworse_ind10==1 &  status10==4
replace catfinal11=4 if catnegworse_ind11==1 &  status11==4
replace catfinal12=4 if catnegworse_ind12==1 &  status12==4
```

```
replace catfinal14=4 if catnegworse_ind14==1 &  status14==4
replace catfinal16=4 if catnegworse_ind16==1 &  status16==4
replace catfinal17=4 if catnegworse_ind17==1 &  status17==4
replace catfinal19=4 if catnegworse_ind19==1 &  status19==4
replace catfinal21=4 if catnegworse_ind21==1 &  status21==4
replace catfinal22=4 if catnegworse_ind22==1 &  status22==4
replace catfinal23=4 if catnegworse_ind23==1 &  status23==4
replace catfinal24=4 if catnegworse_ind24==1 &  status24==4
replace catfinal28=4 if catnegworse_ind28==1 &  status28==4
replace catfinal29=4 if catnegworse_ind29==1 &  status29==4
replace catfinal30=4 if catnegworse_ind30==1 &  status30==4
replace catfinal31=4 if catnegworse_ind31==1 &  status31==4
replace catfinal33=4 if catnegworse_ind33==1 &  status33==4
replace catfinal34=4 if catnegworse_ind34==1 &  status34==4
replace catfinal35=4 if catnegworse_ind35==1 &  status35==4
replace catfinal36=4 if catnegworse_ind36==1 &  status36==4
replace catfinal38=4 if catnegworse_ind38==1 &  status38==4
replace catfinal39=4 if catnegworse_ind39==1 &  status39==4
replace catfinal40=4 if catnegworse_ind40==1 &  status40==4
replace catfinal41=4 if catnegworse_ind41==1 &  status41==4
replace catfinal42=4 if catnegworse_ind42==1 &  status42==4
replace catfinal43=4 if catnegworse_ind43==1 &  status43==4
replace catfinal44=4 if catnegworse_ind44==1 &  status44==4
replace catfinal45=4 if catnegworse_ind45==1 &  status45==4
replace catfinal46=4 if catnegworse_ind46==1 &  status46==4
replace catfinal47=4 if catnegworse_ind47==1 &  status47==4
replace catfinal49=4 if catnegworse_ind49==1 &  status49==4
replace catfinal50=4 if catnegworse_ind50==1 &  status50==4
replace catfinal88=4 if catnegworse_ind88==1 &  status88==4
replace catfinal89=4 if catnegworse_ind89==1 &  status89==4
replace catfinal90=4 if catnegworse_ind90==1 &  status90==4
replace catfinal91=4 if catnegworse_ind91==1 &  status91==4
replace catfinal92=4 if catnegworse_ind92==1 &  status92==4
replace catfinal93=4 if catnegworse_ind93==1 &  status93==4
replace catfinal94=4 if catnegworse_ind94==1 &  status94==4
replace catfinal95=4 if catnegworse_ind95==1 &  status95==4
replace catfinal97=4 if catnegworse_ind97==1 &  status97==4
replace catfinal98=4 if catnegworse_ind98==1 &  status98==4
replace catfinal100=4 if catnegworse_ind100==1 &  status100==4
replace catfinal101=4 if catnegworse_ind101==1 &  status101==4
replace catfinal102=4 if catnegworse_ind102==1 &  status102==4
replace catfinal103=4 if catnegworse_ind103==1 &  status103==4
replace catfinal105=4 if catnegworse_ind105==1 &  status105==4
replace catfinal106=4 if catnegworse_ind106==1 &  status106==4
replace catfinal107=4 if catnegworse_ind107==1 &  status107==4
replace catfinal112=4 if catnegworse_ind112==1 &  status112==4
replace catfinal113=4 if catnegworse_ind113==1 &  status113==4
replace catfinal114=4 if catnegworse_ind114==1 &  status114==4
replace catfinal115=4 if catnegworse_ind115==1 &  status115==4
replace catfinal117=4 if catnegworse_ind117==1 &  status117==4
replace catfinal118=4 if catnegworse_ind118==1 &  status118==4
```

```
replace catfinal124=4 if catnegworse_ind124==1 &  status124==4

replace catfinal3=3 if catnegworse_ind3==2 &  status3==4
replace catfinal4=3 if catnegworse_ind4==2 &  status4==4
replace catfinal5=3 if catnegworse_ind5==2 &  status5==4
replace catfinal6=3 if catnegworse_ind6==2 &  status6==4
replace catfinal7=3 if catnegworse_ind7==2 &  status7==4
replace catfinal8=3 if catnegworse_ind8==2 &  status8==4
replace catfinal9=3 if catnegworse_ind9==2 &  status9==4
replace catfinal10=3 if catnegworse_ind10==2 &  status10==4
replace catfinal11=3 if catnegworse_ind11==2 &  status11==4
replace catfinal12=3 if catnegworse_ind12==2 &  status12==4
replace catfinal14=3 if catnegworse_ind14==2 &  status14==4
replace catfinal16=3 if catnegworse_ind16==2 &  status16==4
replace catfinal17=3 if catnegworse_ind17==2 &  status17==4
replace catfinal19=3 if catnegworse_ind19==2 &  status19==4
replace catfinal21=3 if catnegworse_ind21==2 &  status21==4
replace catfinal22=3 if catnegworse_ind22==2 &  status22==4
replace catfinal23=3 if catnegworse_ind23==2 &  status23==4
replace catfinal24=3 if catnegworse_ind24==2 &  status24==4
replace catfinal28=3 if catnegworse_ind28==2 &  status28==4
replace catfinal29=3 if catnegworse_ind29==2 &  status29==4
replace catfinal30=3 if catnegworse_ind30==2 &  status30==4
replace catfinal31=3 if catnegworse_ind31==2 &  status31==4
replace catfinal33=3 if catnegworse_ind33==2 &  status33==4
replace catfinal34=3 if catnegworse_ind34==2 &  status34==4
replace catfinal35=3 if catnegworse_ind35==2 &  status35==4
replace catfinal36=3 if catnegworse_ind36==2 &  status36==4
replace catfinal38=3 if catnegworse_ind38==2 &  status38==4
replace catfinal39=3 if catnegworse_ind39==2 &  status39==4
replace catfinal40=3 if catnegworse_ind40==2 &  status40==4
replace catfinal41=3 if catnegworse_ind41==2 &  status41==4
replace catfinal42=3 if catnegworse_ind42==2 &  status42==4
replace catfinal43=3 if catnegworse_ind43==2 &  status43==4
replace catfinal44=3 if catnegworse_ind44==2 &  status44==4
replace catfinal45=3 if catnegworse_ind45==2 &  status45==4
replace catfinal46=3 if catnegworse_ind46==2 &  status46==4
replace catfinal47=3 if catnegworse_ind47==2 &  status47==4
replace catfinal49=3 if catnegworse_ind49==2 &  status49==4
replace catfinal50=3 if catnegworse_ind50==2 &  status50==4
replace catfinal88=3 if catnegworse_ind88==2 &  status88==4
replace catfinal89=3 if catnegworse_ind89==2 &  status89==4
replace catfinal90=3 if catnegworse_ind90==2 &  status90==4
replace catfinal91=3 if catnegworse_ind91==2 &  status91==4
replace catfinal92=3 if catnegworse_ind92==2 &  status92==4
replace catfinal93=3 if catnegworse_ind93==2 &  status93==4
replace catfinal94=3 if catnegworse_ind94==2 &  status94==4
replace catfinal95=3 if catnegworse_ind95==2 &  status95==4
replace catfinal97=3 if catnegworse_ind97==2 &  status97==4
replace catfinal98=3 if catnegworse_ind98==2 &  status98==4
replace catfinal100=3 if catnegworse_ind100==2 &  status100==4
```

```
replace catfinal101=3 if catnegworse_ind101==2 &  status101==4
replace catfinal102=3 if catnegworse_ind102==2 &  status102==4
replace catfinal103=3 if catnegworse_ind103==2 &  status103==4
replace catfinal105=3 if catnegworse_ind105==2 &  status105==4
replace catfinal106=3 if catnegworse_ind106==2 &  status106==4
replace catfinal107=3 if catnegworse_ind107==2 &  status107==4
replace catfinal112=3 if catnegworse_ind112==2 &  status112==4
replace catfinal113=3 if catnegworse_ind113==2 &  status113==4
replace catfinal114=3 if catnegworse_ind114==2 &  status114==4
replace catfinal115=3 if catnegworse_ind115==2 &  status115==4
replace catfinal117=3 if catnegworse_ind117==2 &  status117==4
replace catfinal118=3 if catnegworse_ind118==2 &  status118==4
replace catfinal124=3 if catnegworse_ind124==2 &  status124==4


reshape long p_indfour p_indfive change hc_ rankfour rankfive rankhc rankchange
dec_indfive dec_indfour dec_hc catfinal status catnegworse_ind catnegimpr_ind
catposimpr_ind catposworse_ind, i(dist_code) j(indicator)

label define dec_indfour ///
1 "10th" ///
2 "20th" ///
3 "30th" ///
4 "40th" ///
5 "50th" ///
6 "60th" ///
7 "70th" ///
8 "80th" ///
9 "90th" ///
10 "100th"
label value dec_indfour dec_indfour

label define dec_indfive ///
1 "10th" ///
2 "20th" ///
3 "30th" ///
4 "40th" ///
5 "50th" ///
6 "60th" ///
7 "70th" ///
8 "80th" ///
9 "90th" ///
10 "100th"
label value dec_indfive dec_indfive

label define dec_hc ///
1 "10th" ///
2 "20th" ///
3 "30th" ///
4 "40th" ///
5 "50th" ///
```

```
6 "60th" ///
7 "70th" ///
8 "80th" ///
9 "90th" ///
10 "100th"
label value dec_hc dec_hc

gen direction=.
replace direction=2 if indicator==1
replace direction=2 if indicator==2
replace direction=1 if indicator==3
replace direction=1 if indicator==4
replace direction=1 if indicator==5
replace direction=1 if indicator==6
replace direction=1 if indicator==7
replace direction=1 if indicator==8
replace direction=1 if indicator==9
replace direction=1 if indicator==10
replace direction=1 if indicator==11
replace direction=1 if indicator==12
replace direction=2 if indicator==13
replace direction=1 if indicator==14
replace direction=1 if indicator==15
replace direction=1 if indicator==16
replace direction=1 if indicator==17
replace direction=1 if indicator==18
replace direction=1 if indicator==19
replace direction=2 if indicator==20
replace direction=1 if indicator==21
replace direction=1 if indicator==22
replace direction=1 if indicator==23
replace direction=1 if indicator==24
replace direction=2 if indicator==25
replace direction=2 if indicator==26
replace direction=2 if indicator==27
replace direction=1 if indicator==28
replace direction=1 if indicator==29
replace direction=1 if indicator==30
replace direction=1 if indicator==31
replace direction=2 if indicator==32
replace direction=1 if indicator==33
replace direction=1 if indicator==34
replace direction=1 if indicator==35
replace direction=1 if indicator==36
replace direction=1 if indicator==37
replace direction=1 if indicator==38
replace direction=1 if indicator==39
replace direction=1 if indicator==40
replace direction=1 if indicator==41
replace direction=1 if indicator==42
replace direction=1 if indicator==43
```

```
replace direction=1 if indicator==44
replace direction=1 if indicator==45
replace direction=1 if indicator==46
replace direction=1 if indicator==47
replace direction=1 if indicator==49
replace direction=1 if indicator==50
replace direction=2 if indicator==51
replace direction=2 if indicator==52
replace direction=2 if indicator==53
replace direction=2 if indicator==54
replace direction=2 if indicator==55
replace direction=2 if indicator==56
replace direction=2 if indicator==57
replace direction=2 if indicator==58
replace direction=2 if indicator==59
replace direction=2 if indicator==60
replace direction=2 if indicator==61
replace direction=2 if indicator==62
replace direction=2 if indicator==63
replace direction=2 if indicator==64
replace direction=2 if indicator==65
replace direction=2 if indicator==66
replace direction=2 if indicator==67
replace direction=2 if indicator==68
replace direction=2 if indicator==69
replace direction=2 if indicator==70
replace direction=2 if indicator==71
replace direction=2 if indicator==72
replace direction=2 if indicator==73
replace direction=2 if indicator==74
replace direction=2 if indicator==75
replace direction=2 if indicator==76
replace direction=2 if indicator==77
replace direction=2 if indicator==78
replace direction=2 if indicator==79
replace direction=2 if indicator==80
replace direction=2 if indicator==81
replace direction=2 if indicator==82
replace direction=2 if indicator==83
replace direction=2 if indicator==84
replace direction=2 if indicator==85
replace direction=2 if indicator==86
replace direction=2 if indicator==87
replace direction=1 if indicator==88
replace direction=1 if indicator==89
replace direction=1 if indicator==90
replace direction=1 if indicator==91
replace direction=1 if indicator==92
replace direction=1 if indicator==93
replace direction=1 if indicator==94
replace direction=1 if indicator==95
```

```
replace direction=2 if indicator==96
replace direction=1 if indicator==97
replace direction=1 if indicator==98
replace direction=1 if indicator==99
replace direction=1 if indicator==100
replace direction=1 if indicator==101
replace direction=1 if indicator==102
replace direction=1 if indicator==103
replace direction=1 if indicator==104
replace direction=1 if indicator==105
replace direction=1 if indicator==106
replace direction=1 if indicator==107
replace direction=2 if indicator==108
replace direction=2 if indicator==109
replace direction=2 if indicator==110
replace direction=2 if indicator==111
replace direction=1 if indicator==112
replace direction=1 if indicator==113
replace direction=1 if indicator==114
replace direction=1 if indicator==115
replace direction=2 if indicator==116
replace direction=1 if indicator==117
replace direction=1 if indicator==118
replace direction=2 if indicator==119
replace direction=2 if indicator==120
replace direction=2 if indicator==121
replace direction=2 if indicator==122
replace direction=2 if indicator==123
replace direction=1 if indicator==124

gen directionname = direction
label define directionname 1 "Positive" 2 "Negative"
label value directionname directionname

gen dec2_indfour = .
replace dec2_indfour = 1 if dec_indfour==1 & direction==2
replace dec2_indfour = 2 if dec_indfour==2 & direction==2
replace dec2_indfour = 3 if dec_indfour==3 & direction==2
replace dec2_indfour = 4 if dec_indfour==4 & direction==2
replace dec2_indfour = 5 if dec_indfour==5 & direction==2
replace dec2_indfour = 6 if dec_indfour==6 & direction==2
replace dec2_indfour = 7 if dec_indfour==7 & direction==2
replace dec2_indfour = 8 if dec_indfour==8 & direction==2
replace dec2_indfour = 9 if dec_indfour==9 & direction==2
replace dec2_indfour = 10 if dec_indfour==10 & direction==2

replace dec2_indfour = 11 if dec_indfour==1 & direction==1
replace dec2_indfour = 12 if dec_indfour==2 & direction==1
replace dec2_indfour = 13 if dec_indfour==3 & direction==1
replace dec2_indfour = 14 if dec_indfour==4 & direction==1
replace dec2_indfour = 15 if dec_indfour==5 & direction==1
```

```
replace dec2_indfour = 16 if dec_indfour==6 & direction==1
replace dec2_indfour = 17 if dec_indfour==7 & direction==1
replace dec2_indfour = 18 if dec_indfour==8 & direction==1
replace dec2_indfour = 19 if dec_indfour==9 & direction==1
replace dec2_indfour = 20 if dec_indfour==10 & direction==1

label define dec2_indfour ///
1 "10th" ///
2 "20th" ///
3 "30th" ///
4 "40th" ///
5 "50th" ///
6 "60th" ///
7 "70th" ///
8 "80th" ///
9 "90th" ///
10 "100th" ///
20 "10th" ///
19 "20th" ///
18 "30th" ///
17 "40th" ///
16 "50th" ///
15 "60th" ///
14 "70th" ///
13 "80th" ///
12 "90th" ///
11 "100th", replace

label value dec2_indfour dec2_indfour

gen dec2_indfive = .
replace dec2_indfive = 1 if dec_indfive==1 & direction==2
replace dec2_indfive = 2 if dec_indfive==2 & direction==2
replace dec2_indfive = 3 if dec_indfive==3 & direction==2
replace dec2_indfive = 4 if dec_indfive==4 & direction==2
replace dec2_indfive = 5 if dec_indfive==5 & direction==2
replace dec2_indfive = 6 if dec_indfive==6 & direction==2
replace dec2_indfive = 7 if dec_indfive==7 & direction==2
replace dec2_indfive = 8 if dec_indfive==8 & direction==2
replace dec2_indfive = 9 if dec_indfive==9 & direction==2
replace dec2_indfive = 10 if dec_indfive==10 & direction==2

replace dec2_indfive = 11 if dec_indfive==1 & direction==1
replace dec2_indfive = 12 if dec_indfive==2 & direction==1
replace dec2_indfive = 13 if dec_indfive==3 & direction==1
replace dec2_indfive = 14 if dec_indfive==4 & direction==1
replace dec2_indfive = 15 if dec_indfive==5 & direction==1
replace dec2_indfive = 16 if dec_indfive==6 & direction==1
replace dec2_indfive = 17 if dec_indfive==7 & direction==1
replace dec2_indfive = 18 if dec_indfive==8 & direction==1
replace dec2_indfive = 19 if dec_indfive==9 & direction==1
```

```
replace dec2_indfive = 20 if dec_indfive==10 & direction==1

label define dec2_indfive ///
1 "10th" ///
2 "20th" ///
3 "30th" ///
4 "40th" ///
5 "50th" ///
6 "60th" ///
7 "70th" ///
8 "80th" ///
9 "90th" ///
10 "100th" ///
20 "10th" ///
19 "20th" ///
18 "30th" ///
17 "40th" ///
16 "50th" ///
15 "60th" ///
14 "70th" ///
13 "80th" ///
12 "90th" ///
11 "100th", replace

label value dec2_indfive dec2_indfive

gen dec2_hc = .
replace dec2_hc = 1 if dec_hc==1 & direction==2
replace dec2_hc = 2 if dec_hc==2 & direction==2
replace dec2_hc = 3 if dec_hc==3 & direction==2
replace dec2_hc = 4 if dec_hc==4 & direction==2
replace dec2_hc = 5 if dec_hc==5 & direction==2
replace dec2_hc = 6 if dec_hc==6 & direction==2
replace dec2_hc = 7 if dec_hc==7 & direction==2
replace dec2_hc = 8 if dec_hc==8 & direction==2
replace dec2_hc = 9 if dec_hc==9 & direction==2
replace dec2_hc = 10 if dec_hc==10 & direction==2

replace dec2_hc = 11 if dec_hc==1 & direction==1
replace dec2_hc = 12 if dec_hc==2 & direction==1
replace dec2_hc = 13 if dec_hc==3 & direction==1
replace dec2_hc = 14 if dec_hc==4 & direction==1
replace dec2_hc = 15 if dec_hc==5 & direction==1
replace dec2_hc = 16 if dec_hc==6 & direction==1
replace dec2_hc = 17 if dec_hc==7 & direction==1
replace dec2_hc = 18 if dec_hc==8 & direction==1
replace dec2_hc = 19 if dec_hc==9 & direction==1
replace dec2_hc = 20 if dec_hc==10 & direction==1

label define dec2_hc ///
1 "10th" ///
```

```
2 "20th" ///
3 "30th" ///
4 "40th" ///
5 "50th" ///
6 "60th" ///
7 "70th" ///
8 "80th" ///
9 "90th" ///
10 "100th" ///
20 "10th" ///
19 "20th" ///
18 "30th" ///
17 "40th" ///
16 "50th" ///
15 "60th" ///
14 "70th" ///
13 "80th" ///
12 "90th" ///
11 "100th", replace

label value dec2_hc dec2_hc

gen catfinalname = catfinal
label define catfinalname ///
1 "Highest Improvement" ///
2 "Improvement" ///
3 "Worsened" ///
4 "Extremely Worsened" ///

********************** Indicator Prevalence Decile cutoff
************************ Prevalence

forvalues k = 1/47 {
   egen maxvalue = max(p_indfive`k')
   egen minvalue = min(p_indfive`k')
   pctile qfive`k' = p_indfive`k', nq(10)
   replace qfive`k' = 99999 in 10
   replace qfive`k' = 88888 in 11
   replace qfive`k' = minvalue if qfive`k'==99999
   replace qfive`k' = maxvalue if qfive`k'==88888
   drop maxvalue
   drop minvalue
   sort qfive`k'
   gen decfive`k' = _n
   replace decfive`k' = decfive`k'- 1
           }

forvalues k = 49/124 {
   egen maxvalue = max(p_indfive`k')
   egen minvalue = min(p_indfive`k')
   pctile qfive`k' = p_indfive`k', nq(10)
```

```
   replace qfive`k' = 99999 in 10
   replace qfive`k' = 88888 in 11
   replace qfive`k' = minvalue if qfive`k'==99999
   replace qfive`k' = maxvalue if qfive`k'==88888
   drop maxvalue
   drop minvalue
   sort qfive`k'
   gen decfive`k' = _n
   replace decfive`k' = decfive`k'- 1
            }

 }

********************** Headcount

forvalues k = 1/47 {
   egen maxvalue = max(hc_`k')
   egen minvalue = min(hc_`k')
   pctile qhcfive`k' = hc_`k', nq(10)
   replace qhcfive`k' = 99999 in 10
   replace qhcfive`k' = 88888 in 11
   replace qhcfive`k' = minvalue if qhcfive`k'==99999
   replace qhcfive`k' = maxvalue if qhcfive`k'==88888
   drop maxvalue
   drop minvalue
   sort qhcfive`k'
   gen dechcfive`k' = _n
   replace dechcfive`k' = dechcfive`k'- 1
            }

forvalues k = 49/124 {
   egen maxvalue = max(hc_`k')
   egen minvalue = min(hc_`k')
   pctile qhcfive`k' = hc_`k', nq(10)
   replace qhcfive`k' = 99999 in 10
   replace qhcfive`k' = 88888 in 11
   replace qhcfive`k' = minvalue if qhcfive`k'==99999
   replace qhcfive`k' = maxvalue if qhcfive`k'==88888
   drop maxvalue
   drop minvalue
   sort qhcfive`k'
   gen dechcfive`k' = _n
   replace dechcfive`k' = dechcfive`k'- 1
            }


drop if qfive1==.
gen id  = _n
reshape long p_indfive p_indfour change qfive decfive qfour decfour qhcfive dechcfive
hc_, i(id) j(indicator)
gen direction=.
```

```
replace direction=2 if indicator==1
replace direction=2 if indicator==2
replace direction=1 if indicator==3
replace direction=1 if indicator==4
replace direction=1 if indicator==5
replace direction=1 if indicator==6
replace direction=1 if indicator==7
replace direction=1 if indicator==8
replace direction=1 if indicator==9
replace direction=1 if indicator==10
replace direction=1 if indicator==11
replace direction=1 if indicator==12
replace direction=2 if indicator==13
replace direction=1 if indicator==14
replace direction=1 if indicator==15
replace direction=1 if indicator==16
replace direction=1 if indicator==17
replace direction=1 if indicator==18
replace direction=1 if indicator==19
replace direction=2 if indicator==20
replace direction=1 if indicator==21
replace direction=1 if indicator==22
replace direction=1 if indicator==23
replace direction=1 if indicator==24
replace direction=2 if indicator==25
replace direction=2 if indicator==26
replace direction=2 if indicator==27
replace direction=1 if indicator==28
replace direction=1 if indicator==29
replace direction=1 if indicator==30
replace direction=1 if indicator==31
replace direction=2 if indicator==32
replace direction=1 if indicator==33
replace direction=1 if indicator==34
replace direction=1 if indicator==35
replace direction=1 if indicator==36
replace direction=1 if indicator==37
replace direction=1 if indicator==38
replace direction=1 if indicator==39
replace direction=1 if indicator==40
replace direction=1 if indicator==41
replace direction=1 if indicator==42
replace direction=1 if indicator==43
replace direction=1 if indicator==44
replace direction=1 if indicator==45
replace direction=1 if indicator==46
replace direction=1 if indicator==47
replace direction=1 if indicator==49
replace direction=1 if indicator==50
replace direction=2 if indicator==51
replace direction=2 if indicator==52
```

```
replace direction=2 if indicator==53
replace direction=2 if indicator==54
replace direction=2 if indicator==55
replace direction=2 if indicator==56
replace direction=2 if indicator==57
replace direction=2 if indicator==58
replace direction=2 if indicator==59
replace direction=2 if indicator==60
replace direction=2 if indicator==61
replace direction=2 if indicator==62
replace direction=2 if indicator==63
replace direction=2 if indicator==64
replace direction=2 if indicator==65
replace direction=2 if indicator==66
replace direction=2 if indicator==67
replace direction=2 if indicator==68
replace direction=2 if indicator==69
replace direction=2 if indicator==70
replace direction=2 if indicator==71
replace direction=2 if indicator==72
replace direction=2 if indicator==73
replace direction=2 if indicator==74
replace direction=2 if indicator==75
replace direction=2 if indicator==76
replace direction=2 if indicator==77
replace direction=2 if indicator==78
replace direction=2 if indicator==79
replace direction=2 if indicator==80
replace direction=2 if indicator==81
replace direction=2 if indicator==82
replace direction=2 if indicator==83
replace direction=2 if indicator==84
replace direction=2 if indicator==85
replace direction=2 if indicator==86
replace direction=2 if indicator==87
replace direction=1 if indicator==88
replace direction=1 if indicator==89
replace direction=1 if indicator==90
replace direction=1 if indicator==91
replace direction=1 if indicator==92
replace direction=1 if indicator==93
replace direction=1 if indicator==94
replace direction=1 if indicator==95
replace direction=2 if indicator==96
replace direction=1 if indicator==97
replace direction=1 if indicator==98
replace direction=1 if indicator==99
replace direction=1 if indicator==100
replace direction=1 if indicator==101
replace direction=1 if indicator==102
replace direction=1 if indicator==103
```

```
replace direction=1 if indicator==104
replace direction=1 if indicator==105
replace direction=1 if indicator==106
replace direction=1 if indicator==107
replace direction=2 if indicator==108
replace direction=2 if indicator==109
replace direction=2 if indicator==110
replace direction=2 if indicator==111
replace direction=1 if indicator==112
replace direction=1 if indicator==113
replace direction=1 if indicator==114
replace direction=1 if indicator==115
replace direction=2 if indicator==116
replace direction=1 if indicator==117
replace direction=1 if indicator==118
replace direction=2 if indicator==119
replace direction=2 if indicator==120
replace direction=2 if indicator==121
replace direction=2 if indicator==122
replace direction=2 if indicator==123
replace direction=1 if indicator==124

gen directionname = direction
label define directionname 1 "Positive" 2 "Negative"
label value directionname directionname

gen decfour1 = decfour
gen decfive1 = decfive
gen dechcfive1 = dechcfive

replace decfive1=0 if decfive==10 & direction==1
replace decfive1=1 if decfive==9 & direction==1
replace decfive1=2 if decfive==8 & direction==1
replace decfive1=3 if decfive==7 & direction==1
replace decfive1=4 if decfive==6 & direction==1
replace decfive1=5 if decfive==5 & direction==1
replace decfive1=6 if decfive==4 & direction==1
replace decfive1=7 if decfive==3 & direction==1
replace decfive1=8 if decfive==2 & direction==1
replace decfive1=9 if decfive==1 & direction==1
replace decfive1=10 if decfive==0 & direction==1


replace decfour1=0 if decfour==10 & direction==1
replace decfour1=1 if decfour==9 & direction==1
replace decfour1=2 if decfour==8 & direction==1
replace decfour1=3 if decfour==7 & direction==1
replace decfour1=4 if decfour==6 & direction==1
replace decfour1=5 if decfour==5 & direction==1
replace decfour1=6 if decfour==4 & direction==1
replace decfour1=7 if decfour==3 & direction==1
```

```
replace decfour1=8 if decfour==2 & direction==1
replace decfour1=9 if decfour==1 & direction==1
replace decfour1=10 if decfour==0 & direction==1

replace dechcfive1=0 if dechcfive==10 & direction==1
replace dechcfive1=1 if dechcfive==9 & direction==1
replace dechcfive1=2 if dechcfive==8 & direction==1
replace dechcfive1=3 if dechcfive==7 & direction==1
replace dechcfive1=4 if dechcfive==6 & direction==1
replace dechcfive1=5 if dechcfive==5 & direction==1
replace dechcfive1=6 if dechcfive==4 & direction==1
replace dechcfive1=7 if dechcfive==3 & direction==1
replace dechcfive1=8 if dechcfive==2 & direction==1
replace dechcfive1=9 if dechcfive==1 & direction==1
replace dechcfive1=10 if dechcfive==0 & direction==1


pctile catnegimpr_ind1=change1 if status1==1, nq(2)
pctile catnegimpr_ind2=change2 if status2==1, nq(2)
pctile catnegimpr_ind13=change13 if status13==1, nq(2)
pctile catnegimpr_ind20=change20 if status20==1, nq(2)
pctile catnegimpr_ind25=change25 if status25==1, nq(2)
pctile catnegimpr_ind26=change26 if status26==1, nq(2)
pctile catnegimpr_ind27=change27 if status27==1, nq(2)
pctile catnegimpr_ind32=change32 if status32==1, nq(2)
pctile catnegimpr_ind51=change51 if status51==1, nq(2)
pctile catnegimpr_ind52=change52 if status52==1, nq(2)
pctile catnegimpr_ind55=change55 if status55==1, nq(2)
pctile catnegimpr_ind56=change56 if status56==1, nq(2)
pctile catnegimpr_ind57=change57 if status57==1, nq(2)
pctile catnegimpr_ind58=change58 if status58==1, nq(2)
pctile catnegimpr_ind59=change59 if status59==1, nq(2)
pctile catnegimpr_ind60=change60 if status60==1, nq(2)
pctile catnegimpr_ind61=change61 if status61==1, nq(2)
pctile catnegimpr_ind62=change62 if status62==1, nq(2)
pctile catnegimpr_ind63=change63 if status63==1, nq(2)
pctile catnegimpr_ind64=change64 if status64==1, nq(2)
pctile catnegimpr_ind65=change65 if status65==1, nq(2)
pctile catnegimpr_ind67=change67 if status67==1, nq(2)
pctile catnegimpr_ind68=change68 if status68==1, nq(2)
pctile catnegimpr_ind69=change69 if status69==1, nq(2)
pctile catnegimpr_ind70=change70 if status70==1, nq(2)
pctile catnegimpr_ind71=change71 if status71==1, nq(2)
pctile catnegimpr_ind72=change72 if status72==1, nq(2)
pctile catnegimpr_ind73=change73 if status73==1, nq(2)
pctile catnegimpr_ind74=change74 if status74==1, nq(2)
pctile catnegimpr_ind75=change75 if status75==1, nq(2)
pctile catnegimpr_ind76=change76 if status76==1, nq(2)
pctile catnegimpr_ind77=change77 if status77==1, nq(2)
pctile catnegimpr_ind78=change78 if status78==1, nq(2)
pctile catnegimpr_ind79=change79 if status79==1, nq(2)
```

```
pctile catnegimpr_ind80=change80 if status80==1, nq(2)
pctile catnegimpr_ind81=change81 if status81==1, nq(2)
pctile catnegimpr_ind82=change82 if status82==1, nq(2)
pctile catnegimpr_ind83=change83 if status83==1, nq(2)
pctile catnegimpr_ind84=change84 if status84==1, nq(2)
pctile catnegimpr_ind85=change85 if status85==1, nq(2)
pctile catnegimpr_ind86=change86 if status86==1, nq(2)
pctile catnegimpr_ind87=change87 if status87==1, nq(2)
pctile catnegimpr_ind96=change96 if status96==1, nq(2)
pctile catnegimpr_ind108=change108 if status108==1, nq(2)
pctile catnegimpr_ind109=change109 if status109==1, nq(2)
pctile catnegimpr_ind110=change110 if status110==1, nq(2)
pctile catnegimpr_ind111=change111 if status111==1, nq(2)
pctile catnegimpr_ind116=change116 if status116==1, nq(2)
pctile catnegimpr_ind119=change119 if status119==1, nq(2)
pctile catnegimpr_ind120=change120 if status120==1, nq(2)
pctile catnegimpr_ind121=change121 if status121==1, nq(2)
pctile catnegimpr_ind122=change122 if status122==1, nq(2)
pctile catnegimpr_ind123=change123 if status123==1, nq(2)

pctile catposworse_ind1=change1 if status1==3, nq(2)
pctile catposworse_ind2=change2 if status2==3, nq(2)
pctile catposworse_ind13=change13 if status13==3, nq(2)
pctile catposworse_ind20=change20 if status20==3, nq(2)
pctile catposworse_ind25=change25 if status25==3, nq(2)
pctile catposworse_ind26=change26 if status26==3, nq(2)
pctile catposworse_ind27=change27 if status27==3, nq(2)
pctile catposworse_ind32=change32 if status32==3, nq(2)
pctile catposworse_ind51=change51 if status51==3, nq(2)
pctile catposworse_ind52=change52 if status52==3, nq(2)
pctile catposworse_ind55=change55 if status55==3, nq(2)
pctile catposworse_ind56=change56 if status56==3, nq(2)
pctile catposworse_ind57=change57 if status57==3, nq(2)
pctile catposworse_ind58=change58 if status58==3, nq(2)
pctile catposworse_ind59=change59 if status59==3, nq(2)
pctile catposworse_ind60=change60 if status60==3, nq(2)
pctile catposworse_ind61=change61 if status61==3, nq(2)
pctile catposworse_ind62=change62 if status62==3, nq(2)
pctile catposworse_ind63=change63 if status63==3, nq(2)
pctile catposworse_ind64=change64 if status64==3, nq(2)
pctile catposworse_ind65=change65 if status65==3, nq(2)
pctile catposworse_ind67=change67 if status67==3, nq(2)
pctile catposworse_ind68=change68 if status68==3, nq(2)
pctile catposworse_ind69=change69 if status69==3, nq(2)
pctile catposworse_ind70=change70 if status70==3, nq(2)
pctile catposworse_ind71=change71 if status71==3, nq(2)
pctile catposworse_ind72=change72 if status72==3, nq(2)
pctile catposworse_ind73=change73 if status73==3, nq(2)
pctile catposworse_ind74=change74 if status74==3, nq(2)
pctile catposworse_ind75=change75 if status75==3, nq(2)
pctile catposworse_ind76=change76 if status76==3, nq(2)
```

```
pctile catposworse_ind77=change77 if status77==3, nq(2)
pctile catposworse_ind78=change78 if status78==3, nq(2)
pctile catposworse_ind79=change79 if status79==3, nq(2)
pctile catposworse_ind80=change80 if status80==3, nq(2)
pctile catposworse_ind81=change81 if status81==3, nq(2)
pctile catposworse_ind82=change82 if status82==3, nq(2)
pctile catposworse_ind83=change83 if status83==3, nq(2)
pctile catposworse_ind84=change84 if status84==3, nq(2)
pctile catposworse_ind85=change85 if status85==3, nq(2)
pctile catposworse_ind86=change86 if status86==3, nq(2)
pctile catposworse_ind87=change87 if status87==3, nq(2)
pctile catposworse_ind96=change96 if status96==3, nq(2)
pctile catposworse_ind108=change108 if status108==3, nq(2)
pctile catposworse_ind109=change109 if status109==3, nq(2)
pctile catposworse_ind110=change110 if status110==3, nq(2)
pctile catposworse_ind111=change111 if status111==3, nq(2)
pctile catposworse_ind116=change116 if status116==3, nq(2)
pctile catposworse_ind119=change119 if status119==3, nq(2)
pctile catposworse_ind120=change120 if status120==3, nq(2)
pctile catposworse_ind121=change121 if status121==3, nq(2)
pctile catposworse_ind122=change122 if status122==3, nq(2)
pctile catposworse_ind123=change123 if status123==3, nq(2)

pctile catposimpr_ind3=change3 if status3==2, nq(2)
pctile catposimpr_ind4=change4 if status4==2, nq(2)
pctile catposimpr_ind5=change5 if status5==2, nq(2)
pctile catposimpr_ind6=change6 if status6==2, nq(2)
pctile catposimpr_ind7=change7 if status7==2, nq(2)
pctile catposimpr_ind8=change8 if status8==2, nq(2)
pctile catposimpr_ind9=change9 if status9==2, nq(2)
pctile catposimpr_ind10=change10 if status10==2, nq(2)
pctile catposimpr_ind11=change11 if status11==2, nq(2)
pctile catposimpr_ind12=change12 if status12==2, nq(2)
pctile catposimpr_ind14=change14 if status14==2, nq(2)
pctile catposimpr_ind16=change16 if status16==2, nq(2)
pctile catposimpr_ind17=change17 if status17==2, nq(2)
pctile catposimpr_ind19=change19 if status19==2, nq(2)
pctile catposimpr_ind21=change21 if status21==2, nq(2)
pctile catposimpr_ind22=change22 if status22==2, nq(2)
pctile catposimpr_ind23=change23 if status23==2, nq(2)
pctile catposimpr_ind24=change24 if status24==2, nq(2)
pctile catposimpr_ind28=change28 if status28==2, nq(2)
pctile catposimpr_ind29=change29 if status29==2, nq(2)
pctile catposimpr_ind30=change30 if status30==2, nq(2)
pctile catposimpr_ind31=change31 if status31==2, nq(2)
pctile catposimpr_ind33=change33 if status33==2, nq(2)
pctile catposimpr_ind34=change34 if status34==2, nq(2)
pctile catposimpr_ind35=change35 if status35==2, nq(2)
pctile catposimpr_ind36=change36 if status36==2, nq(2)
pctile catposimpr_ind38=change38 if status38==2, nq(2)
pctile catposimpr_ind39=change39 if status39==2, nq(2)
```

```
pctile catposimpr_ind40=change40 if status40==2, nq(2)
pctile catposimpr_ind41=change41 if status41==2, nq(2)
pctile catposimpr_ind42=change42 if status42==2, nq(2)
pctile catposimpr_ind43=change43 if status43==2, nq(2)
pctile catposimpr_ind44=change44 if status44==2, nq(2)
pctile catposimpr_ind45=change45 if status45==2, nq(2)
pctile catposimpr_ind46=change46 if status46==2, nq(2)
pctile catposimpr_ind47=change47 if status47==2, nq(2)
pctile catposimpr_ind49=change49 if status49==2, nq(2)
pctile catposimpr_ind50=change50 if status50==2, nq(2)
pctile catposimpr_ind88=change88 if status88==2, nq(2)
pctile catposimpr_ind89=change89 if status89==2, nq(2)
pctile catposimpr_ind90=change90 if status90==2, nq(2)
pctile catposimpr_ind91=change91 if status91==2, nq(2)
pctile catposimpr_ind92=change92 if status92==2, nq(2)
pctile catposimpr_ind93=change93 if status93==2, nq(2)
pctile catposimpr_ind94=change94 if status94==2, nq(2)
pctile catposimpr_ind95=change95 if status95==2, nq(2)
pctile catposimpr_ind97=change97 if status97==2, nq(2)
pctile catposimpr_ind98=change98 if status98==2, nq(2)
pctile catposimpr_ind100=change100 if status100==2, nq(2)
pctile catposimpr_ind101=change101 if status101==2, nq(2)
pctile catposimpr_ind102=change102 if status102==2, nq(2)
pctile catposimpr_ind103=change103 if status103==2, nq(2)
pctile catposimpr_ind105=change105 if status105==2, nq(2)
pctile catposimpr_ind106=change106 if status106==2, nq(2)
pctile catposimpr_ind107=change107 if status107==2, nq(2)
pctile catposimpr_ind112=change112 if status112==2, nq(2)
pctile catposimpr_ind113=change113 if status113==2, nq(2)
pctile catposimpr_ind114=change114 if status114==2, nq(2)
pctile catposimpr_ind115=change115 if status115==2, nq(2)
pctile catposimpr_ind117=change117 if status117==2, nq(2)
pctile catposimpr_ind118=change118 if status118==2, nq(2)
pctile catposimpr_ind124=change124 if status124==2, nq(2)

pctile catnegworse_ind3=change3 if status3==4, nq(2)
pctile catnegworse_ind4=change4 if status4==4, nq(2)
pctile catnegworse_ind5=change5 if status5==4, nq(2)
pctile catnegworse_ind6=change6 if status6==4, nq(2)
pctile catnegworse_ind7=change7 if status7==4, nq(2)
pctile catnegworse_ind8=change8 if status8==4, nq(2)
pctile catnegworse_ind9=change9 if status9==4, nq(2)
pctile catnegworse_ind10=change10 if status10==4, nq(2)
pctile catnegworse_ind11=change11 if status11==4, nq(2)
pctile catnegworse_ind12=change12 if status12==4, nq(2)
pctile catnegworse_ind14=change14 if status14==4, nq(2)
pctile catnegworse_ind16=change16 if status16==4, nq(2)
pctile catnegworse_ind17=change17 if status17==4, nq(2)
pctile catnegworse_ind19=change19 if status19==4, nq(2)
pctile catnegworse_ind21=change21 if status21==4, nq(2)
pctile catnegworse_ind22=change22 if status22==4, nq(2)
```

```
pctile catnegworse_ind23=change23 if status23==4, nq(2)
pctile catnegworse_ind24=change24 if status24==4, nq(2)
pctile catnegworse_ind28=change28 if status28==4, nq(2)
pctile catnegworse_ind29=change29 if status29==4, nq(2)
pctile catnegworse_ind30=change30 if status30==4, nq(2)
pctile catnegworse_ind31=change31 if status31==4, nq(2)
pctile catnegworse_ind33=change33 if status33==4, nq(2)
pctile catnegworse_ind34=change34 if status34==4, nq(2)
pctile catnegworse_ind35=change35 if status35==4, nq(2)
pctile catnegworse_ind36=change36 if status36==4, nq(2)
pctile catnegworse_ind38=change38 if status38==4, nq(2)
pctile catnegworse_ind39=change39 if status39==4, nq(2)
pctile catnegworse_ind40=change40 if status40==4, nq(2)
pctile catnegworse_ind41=change41 if status41==4, nq(2)
pctile catnegworse_ind42=change42 if status42==4, nq(2)
pctile catnegworse_ind43=change43 if status43==4, nq(2)
pctile catnegworse_ind44=change44 if status44==4, nq(2)
pctile catnegworse_ind45=change45 if status45==4, nq(2)
pctile catnegworse_ind46=change46 if status46==4, nq(2)
pctile catnegworse_ind47=change47 if status47==4, nq(2)
pctile catnegworse_ind49=change49 if status49==4, nq(2)
pctile catnegworse_ind50=change50 if status50==4, nq(2)
pctile catnegworse_ind88=change88 if status88==4, nq(2)
pctile catnegworse_ind89=change89 if status89==4, nq(2)
pctile catnegworse_ind90=change90 if status90==4, nq(2)
pctile catnegworse_ind91=change91 if status91==4, nq(2)
pctile catnegworse_ind92=change92 if status92==4, nq(2)
pctile catnegworse_ind93=change93 if status93==4, nq(2)
pctile catnegworse_ind94=change94 if status94==4, nq(2)
pctile catnegworse_ind95=change95 if status95==4, nq(2)
pctile catnegworse_ind97=change97 if status97==4, nq(2)
pctile catnegworse_ind98=change98 if status98==4, nq(2)
pctile catnegworse_ind100=change100 if status100==4, nq(2)
pctile catnegworse_ind101=change101 if status101==4, nq(2)
pctile catnegworse_ind102=change102 if status102==4, nq(2)
pctile catnegworse_ind103=change103 if status103==4, nq(2)
pctile catnegworse_ind105=change105 if status105==4, nq(2)
pctile catnegworse_ind106=change106 if status106==4, nq(2)
pctile catnegworse_ind107=change107 if status107==4, nq(2)
pctile catnegworse_ind112=change112 if status112==4, nq(2)
pctile catnegworse_ind113=change113 if status113==4, nq(2)
pctile catnegworse_ind114=change114 if status114==4, nq(2)
pctile catnegworse_ind115=change115 if status115==4, nq(2)
pctile catnegworse_ind117=change117 if status117==4, nq(2)
pctile catnegworse_ind118=change118 if status118==4, nq(2)
pctile catnegworse_ind124=change124 if status124==4, nq(2)


forvalues k = 1/14 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
```

```
            }


forvalues k = 16/17 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
            }

forvalues k = 19/36 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
            }

forvalues k = 38/47 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
            }

                forvalues k = 49/52 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
            }

forvalues k = 55/65 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
            }

forvalues k = 67/98 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
            }


forvalues k = 100/103 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
            }

forvalues k = 105/124 {
   egen catmin`k' = min(change`k')
   egen catmax`k' = max(change`k')
            }

****************************************
drop if dist_code>1
drop change1-status124
reshape long catnegimpr_ind catposworse_ind catposimpr_ind catnegworse_ind catmin
catmax, i(dist_code) j(indicator)
drop dist_code
gen catnegindicator0 = catmin if catnegimpr_ind~=.
```

```
gen catnegindicator1 = catnegimpr_ind if catnegimpr_ind~=.
gen catnegindicator2 = 0 if catnegimpr_ind~=.
gen catnegindicator3 = catposworse_ind if catposworse_ind~=.
gen catnegindicator4 = catmax if catnegimpr_ind~=.
gen catposindicator0 = catmax if catposimpr_ind~=.
gen catposindicator1 = catposimpr_ind if catposimpr_ind~=.
gen catposindicator2 = 0 if catposimpr_ind~=.
gen catposindicator3 = catnegworse_ind if catnegworse_ind~=.
gen catposindicator4 = catmin if catposimpr_ind~=.
reshape long catnegindicator catposindicator, i(indicator) j(changecat)
gen changecatcutoff = catnegindicator if catnegindicator~=.
replace changecatcutoff = catposindicator if catposindicator~=.
```

Appendix 1.3: Headcount Estimation

```
*************** Denom1 6-23 months Non-Breastfeeding (KR File)
gen agegroup = .
replace agegroup = 1 if hw1<6
replace agegroup = 2 if hw1>5 & hw1<24
replace agegroup = 3 if hw1>23
tab agegroup [aw=wt]
keep if agegroup==2
tab v404 [aw=wt]
keep if v404==0
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom2 - 15-49 years mothers with most recent birth (IR File)
gen wt = v005/1000000
gen motherrecentb = .
replace motherrecentb = 1 if midx_1==1
replace motherrecentb = 0 if midx_1==.
tab motherrecentb [aw=wt]
keep if motherrecentb==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom3 - 0-59 most recent preg registered
gen wt = v005/1000000
gen recent0to59regpreg = .
replace recent0to59regpreg = 1 if midx==1
replace recent0to59regpreg = 0 if midx~=1
tab recent0to59regpreg [aw=wt]
keep if recent0to59regpreg==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom4 - 18-49 years ever married females (IR File)
gen wt = v005/1000000
gen evermarried18to49 = .
replace evermarried18to49 = 1 if(v012>17) & (v502==1 | v502==2)
replace evermarried18to49 = 0 if v012<17 | v502==0
tab evermarried18to49 [aw=wt]
keep if evermarried18to49==1
tab dist_code [aw=wt]
```

```
tab state_code [aw=wt]
*************** Denom5 - 0 to 59 months home births (KR File)
gen wt = v005/1000000
gen homebirths0to59 = .
replace homebirths0to59 = 1 if (m15==11 | m15==12 | m15==13)
replace homebirths0to59 = 0 if (m15>13)
tab homebirths0to59 [aw=wt]
keep if homebirths0to59==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom6 - 15-49 Pregnant Female (PR File)
gen wt = hv005/1000000
keep if hv105>14 & hv105<50
keep if hv104==2
tab hml18 [aw=wt]
keep if hml18==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom7 - 15-49 Currently Married (IR File)
gen wt = v005/1000000
gen currentlymarr = .
replace currentlymarr = 1 if s301==1
replace currentlymarr = 0 if s301~=1
tab currentlymarr [aw=wt]
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom8 - 6-23 months Breastfeeding (KR File)
gen wt = v005/1000000
gen agegroup = .
replace agegroup = 1 if hw1<6
replace agegroup = 2 if hw1>5 & hw1<24
replace agegroup = 3 if hw1>23
tab agegroup [aw=wt]
keep if agegroup==2
tab v404 [aw=wt]
keep if v404==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom9 - 0-59 Births in ppublic facilities (KR File)
gen wt = v005/1000000
gen publicdel = .
replace publicdel = 1 if m15>20 & m15<28
replace publicdel = 0 if publicdel~=1
tab publicdel [aw=wt]
keep if publicdel==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom10 - 0-59 Births in Private facilities (KR File)
gen wt = v005/1000000
gen privatedel = .
replace privatedel = 1 if m15==31 | m15==32
```

```
replace privatedel = 0 if privatedel~=1
tab privatedel [aw=wt]
keep if privatedel==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom11 - 15-49 NonPregnant Female (PR File)
gen wt = hv005/1000000
keep if hv105>14 & hv105<50
keep if hv104==2
tab hml18 [aw=wt]
keep if hml18==0
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom12 - 9-35 months kids (KR File)
gen wt = v005/1000000
gen agegroup9to35 = .
replace agegroup9to35 = 1 if hw1>8 & hw1<36
replace agegroup9to35 = 0 if agegroup9to35~=1
tab agegroup9to35 [aw=wt]
keep if agegroup9to35==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom13 - 6-59 (KR File)
gen wt = v005/1000000
gen agegroup=.
replace agegroup = 1 if hw1<6
replace agegroup = 2 if hw1>5
tab agegroup [aw=wt]
keep if agegroup==2
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom14 - 6-8 months kids (KR File)
gen wt = v005/1000000
gen agegroup=.
replace agegroup = 1 if hw1>5 & hw1<9
replace agegroup = 0 if agegroup~=1
tab agegroup [aw=wt]
keep if agegroup==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom15 - 6-23 months All (KR File)
gen wt = v005/1000000
gen agegroup = .
replace agegroup = 1 if hw1<6
replace agegroup = 2 if hw1>5 & hw1<24
replace agegroup = 3 if hw1>23
tab agegroup [aw=wt]
keep if agegroup==2
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom16 - 12-23 months (PR File)
```

```
gen wt = hv005/1000000
keep if hv105<5
gen agegroup = .
replace agegroup = 1 if hc1<12
replace agegroup = 2 if hc1>11 & hc1<24
replace agegroup = 3 if hc1>23
tab agegroup [aw=wt]
keep if agegroup==2
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom17 - 0-36 months most recent birth (PR File)
gen wt = v005/1000000
gen recentbirth0to36 = .
replace recentbirth0to36 = 1 if hw1<37 & midx==1
replace recentbirth0to36 = 2 if hw1>36 | midx~=1
tab recentbirth0to36 [aw=wt]
keep if recentbirth0to36==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom18 - 0-59 kids  (KR File)
gen wt = v005/1000000
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom19 - 0-6 months living with mother(KR File)
gen wt = v005/1000000
gen child0to6 = .
replace child0to6 = 1 if hw1<7 & b9==0
replace child0to6 = 2 if hw1>6 | b9~=0
tab child0to6 [aw=wt]
keep if child0to6==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom20 -  15-19 years female (IR File)
gen wt = v005/1000000
gen female15to19 = .
replace female15to19 = 1 if (v012>14 & v012<20)
replace female15to19 = 2 if female15to19~=1
tab female15to19 [aw=wt]
keep if female15to19==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom21 - 15-24 years female (IR File)
gen wt = v005/1000000
gen female15to24 = .
replace female15to24 = 1 if (v012>14 & v012<25)
replace female15to24 = 2 if female15to24~=1
tab female15to24 [aw=wt]
keep if female15to24==1
tab dist_code [aw=wt]

tab state_code [aw=wt]
```

```
*************** Denom22 - 15-49 Female (PR File)
gen wt = hv005/1000000
keep if hv105>14 & hv105<50
keep if hv104==2
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom23 - 15-49 Male (PR File)
gen wt = hv005/1000000
keep if hv105>14 & hv105<50
keep if hv104==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom24 - 18-29 years female (IR File)
gen wt = v005/1000000
gen female18to29 = .
replace female18to29 = 1 if (v012>17 & v012<30)
replace female18to29 = 2 if female18to29~=1
tab female18to29 [aw=wt]
keep if female18to29==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom25 - 20-24 years female (IR File)
gen wt = v005/1000000
gen female20to24 = .
replace female20to24 = 1 if (v012>19 & v012<25)
replace female20to24 = 2 if female20to24~=1
tab female20to24 [aw=wt]
keep if female20to24==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom26 -  24-35 months children (PR File)
gen wt = hv005/1000000
keep if hv105<5
gen agegroup = .
replace agegroup = 1 if hc1<24
replace agegroup = 2 if hc1>23 & hc1<36
replace agegroup = 3 if hc1>35
tab agegroup [aw=wt]
keep if agegroup==2
tab dist_code [aw=wt]
tab state_code [aw=wt]
***************  Denom27 - 25-29 years male (PR File)
gen wt = hv005/1000000
keep if hv104==1
gen agegroup = .
replace agegroup = 1 if hv105<25
replace agegroup = 2 if hv105>24 & hv105<30
replace agegroup = 3 if hv105>39
tab agegroup [aw=wt]
keep if agegroup==2
tab dist_code [aw=wt]
```

```
tab state_code [aw=wt]
*************** Denom28 - 6+ years female (PR File)
gen wt = hv005/1000000
keep if hv104==2
gen female6plus = .
replace female6plus = 1 if hv105>5
replace female6plus = 0 if female6plus~=1
tab female6plus [aw=wt]
keep if female6plus==1
tab dist_code [aw=wt]
tab state_code [aw=wt]
*************** Denom29 - All Population (PR File)
gen wt = hv005/1000000
tab dist_code [aw=wt]
tab state_code [aw=wt]
```

Appendix 1.4: Multilevel Modelling

```
********** 4-Level Model (MCMC) taking IGLS estimations as initial
gen beta0 = .
gen case = _n
gen cons=1
global MLwiN_path "C:\Program Files\MLwiN v3.05\mlwin.exe"
sort v024 sdist v001 case
xi: runmlwin parthhdecision05 ///
cons,level4(v024:      cons,      residuals(stateres))      level3(sdist:      cons,
residuals(districtres)) level2(v001: cons, residuals(clusterres)) level1(case:, ) ///
discrete(distribution(binomial)       link(logit)       denominator(cons)       pql2)
mlwinsettings(optimat) nopause
sort v024 sdist v001 case
xi: runmlwin parthhdecision05 ///
cons,level4(v024:      cons,      residuals(stateres1))      level3(sdist:      cons,
residuals(districtres1)) level2(v001: cons, residuals(clusterres1)) level1(case:, ) ///
discrete(distribution(binomial) link(logit) denominator(cons)) mlwinsettings(optimat)
mcmc(burnin(500) chain(5000) refresh(100) orth hc(4)) initsprevious nopause
replace beta0 = _b[cons]
gen                                    predprob                                    =
exp(beta0+stateres10+districtres10+clusterres10)/(1+exp(beta0+stateres10+districtres10
+clusterres10))
rename predprob p_parthhdecision05
rename v001 cluster
rename v024 state
rename sdist district
rename cons sample
replace p_parthhdecision05 = p_parthhdecision05*100
collapse (max) state district p_parthhdecision05 (mean) parthhdecision05 (sum) sample,
by(cluster)
save "womenparticipationhhdecision05.dta"
sum cluster
collapse (mean) p_parthhdecision05 (max) state, by(district)
sum district
collapse (mean) p_parthhdecision05, by(state)
```

Appendix 2: Geography Aggregation by States

The following process was used in ArcGIS Pro to achieve the Village shapefile updates:

Step 1: Select by attribute was performed on the Bharat Map nationwide Village point shapefile Village Location Shapefile.shp, selecting where the "stname" field = 'Arunachal Pradesh' OR 'Himachal Pradesh' OR 'Jammu & Kashmir' OR 'Ladakh' OR 'Manipur' OR 'Mizoram' OR 'Nagaland' OR 'Sikkim'. This selected set was exported into the shapefile Villages_8_states.shp.

Step 2: Create Thiessen Polygons was run with the following parameters:

Input Features: Villages_8_states.shp.

Processing Extent: IPI District Shapefile.shp boundary shapefile. This confined the Thiessen polygon generation extent to the extent of the District borders.

Output shapefile: All_Thiessen_Poly_Merge.shp.

Step 3: Intersect, specifying All_Thiessen_Poly_Merge.shp and District Shapefile.shp as the input layers. This clipped polygons in the All_Thiessen_Poly_Merge.shp to the District borders, eliminating any polygon areas outside District borders.

Step 4: Add Field, adding a text field named "Village_ID" to the All_Thiessen_Poly_Merge.shp shapefile.

Step 5: Calculate Field, the "Village_ID" field in the All_Thiessen_Poly_Merge.shp was calculated = to the "vilcode11" field.

Step 6: Add Field, adding a text field named "Village_ID" to the Village Shapefile.shp shapefile.

Step 7: Calculate Field, the "Village_ID" field in the Village Shapefile.shp shapefile was calculated = to the "vilcode11" field.

Step 8: Merge, specifying Village Shapefile.shp shapefile, and All_Thiessen_Poly_Merge as the inputs, producing Villages_shapefile_06292023 as the result.

For some States the Villages_8_states.shp Village points do not provide coverage across the entire District, mostly for Districts on the edge of the India national border. See the figure below, where the Village points (red dots) are not distributed throughout the entire District. For these areas, the Thiessen polygons extended all the way to the District border in a straight line (blue lines, figure below), producing an unrealistic representation of the Village areas. Manual editing was performed on these Village polygons in the Villages_shapefile_06292023.shp

shapefile, clipping the Village borders to roughly 10 – 20 kilometers beyond the Village point (green lines, figure below). Areas outside of this that did not contain a Village point were labelled as Village_ID = "NOVILL" to indicate this lack of a Village point.

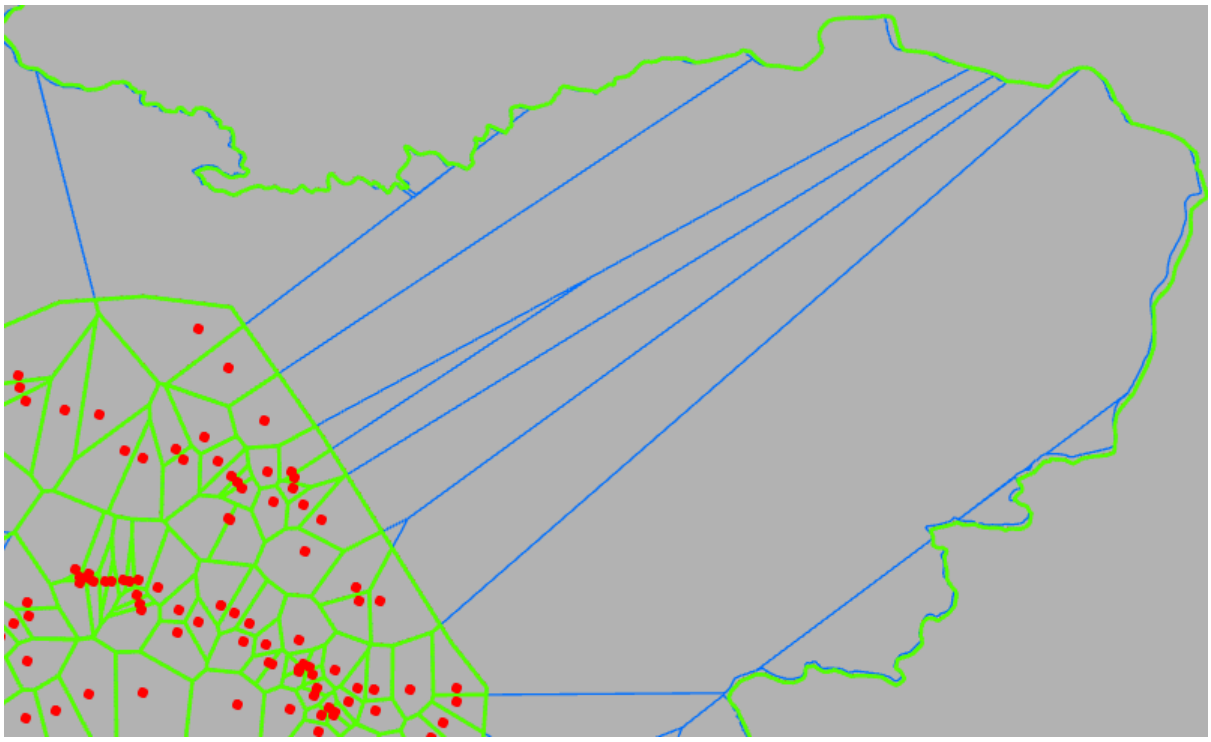

Table A.2: State-wise summary of reorganisations of Districts:

			Change in the Districts				
State Name	**Number of Census 2011 Districts**	**Number of IPI Districts**	**Changed Districts (from 1 Parent)**	**Changed Districts (from 2 Parents)**	**Changed Districts (from 3 Parents)**	**Total Changed Districts**	**Unchanged Districts**
Arunachal Pradesh	16	20	8	1	0	9	11
Assam	27	33	12	0	0	12	21
Chhattisgarh	18	27	14	1	0	15	12
Gujarat	26	33	14	3	0	17	16
Haryana	21	22	2	0	0	2	20
Madhya Pradesh	50	51	2	0	0	2	49
Maharashtra	35	36	2	0	0	2	34
Meghalaya	7	11	8	0	0	8	3
NCT of	9	11	10	0	0	10	1

Delhi							
Punjab	20	22	4	0	0	4	18
Telangana	31	31	22	6	2	30	1
Tripura	4	8	7	0	0	7	1
Uttar Pradesh	71	75	8	2	0	10	65
West Bengal	19	20	2	0	0	2	18

State-wise notes on reorganisation:

To account for the reorganisation of every State, the methodology given above has been followed. There have been cases of some specific steps taken for each District apart from the methodology above. Those steps and the rationale behind them have been given below.

Arunachal Pradesh

5 Districts of East Siang, West Siang, Tirap, Lohit and Kurung Kumey in Arunachal Pradesh. 2 were rearranged into 9 new Districts, as seen in the table. All the sub-Districts and their population in these five parent Districts except the sub-Districts of Nari, Koyu, Seren, and Kora in East Siang and Basar, Tirbin, Daring, Likabali, Kangku, Sibe and Gensi in West Siang were accounted for and reorganised in the below 9 Districts.

Table A.2.1: Reorganisation of Districts in Arunachal Pradesh

State Name	District Name	Parent District	Source Link	Date of Access
Arunachal Pradesh	East Siang	East Siang	https://lgdirectory.gov.in/globalviewDistrict.do	24th June, 2023
Arunachal Pradesh	Kra Daadi	Kurung Kumey	https://lgdirectory.gov.in/globalviewDistrict.do	24th June, 2023
Arunachal Pradesh	Kurung Kumey	Kurung Kumey	https://lgdirectory.gov.in/globalviewDistrict.do	24th June, 2023
Arunachal Pradesh	Lohit	Lohit	https://lgdirectory.gov.in/globalviewDistrict.do	24th June, 2023
Arunachal Pradesh	Namsai	Lohit	https://lgdirectory.gov.in/globalviewDistrict.do	24th June, 2023
Arunachal Pradesh	Langding	Tirap	https://lgdirectory.gov.in/globalvi	25th June, 2023

			ewDistrict.do	
Arunachal Pradesh	Tirap	Tirap	https://lgdirectory.gov.in/globalviewDistrict.do	25th June, 2023
Arunachal Pradesh	West Siang	West Siang	https://lgdirectory.gov.in/globalviewDistrict.do	24th June, 2023
Arunachal Pradesh	Siang	West Siang and East Siang	https://lgdirectory.gov.in/globalviewDistrict.do	24th June, 2023

West Bengal

One District of Barddhaman in West Bengal 2011 PCA file was rearranged into 2 new Districts of Purba and Paschim Barddhaman, as seen in the table below. The notification provided information regarding reorganisation based on subdivisions and not sub-Districts. The District websites of Paschim and Purba Barddhaman were used to get data on reorganisation in sub-Districts. The District websites provided detailed data regarding subdivisions' constitution in terms of sub-Districts:

- Paschim Bardhmann District website source and date of access - https://paschimbardhaman.gov.in/subdivision-blocks/, 30th August, 2023

- Purba Bardhmann District website source and date of access - https://paschimbardhaman.gov.in/subdivision-blocks/, 30th August, 2023

Table A.2.2: Reorganisation of Districts in West Bengal

State Name	District Name	Parent District	Source Link	Date of Access
West Bengal	Paschim Barddhaman	Barddhaman	https://www.satsawb.org/Docs/GOs/Paschim_and_Purba_Bardhaman_Gazette_Notifications.pdf	30th August, 2023
West Bengal	Purba Barddhaman	Barddhaman	https://www.satsawb.org/Docs/GOs/Paschim_and_Purba_Bardhaman_Gazette_Notifications.pdf	30th August, 2023

Chhattisgarh

5 Districts in Chhattisgarh were rearranged into 15 new Districts, as seen in the table below.

Table A.2.3: Reorganisation of Districts in Chhatisgarh

State Name	District Name	Parent District	Link Source	Date of access
Chhattisgarh	Balrampur	Surguja	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Bastar	Bastar	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Dantewada	Bastar & Dakshin Bastar Dantewada	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Kodagaon	Bastar	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Bilaspur	Bilaspur	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Mungeli	Bilaspur	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Sukma	Dakshin Bastar Dantewada	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Balod	Durg	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Bemetara	Durg	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Durg	Durg	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Baloda Bazar	Raipur	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Gariaband	Raipur	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Raipur	Raipur	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023
Chhattisgarh	Surajpur	Surguja	https://revenue.cg.nic.in/rev_notifications/30%20d	22 June, 2023

			ec%202011.pdf	
Chhattisgarh	Surguja	Surguja	https://revenue.cg.nic.in/rev_notifications/30%20dec%202011.pdf	22 June, 2023

Gujarat

10 Districts of Gujarat were rearranged into 17 new Districts, as seen in the table below.

Table A.2.4: Reorganisation of Districts in Gujarat

State Name	District Name	Parent District	Source link	Date of access
Gujarat	Ahmadabad	Ahmadabad	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Botad	Ahmadabad & Bhavnagar	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Bhavnagar	Bhavnagar	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Devbhoomi Dwarka	Jamnagar	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Jamnagar	Jamnagar	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Gir Somnath	Junagadh	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Junagadh	Junagadh	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Kheda	Kheda	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Panch Mahals	Panch Mahals	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Mahisagar	Panch Mahals & Kheda	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Rajkot	Rajkot	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Morbi	Rajkot & Surendranagar	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Aravali	Sabar Kantha	https://revenuedepartment.gujarat.	21 June, 2023

			gov.in/	
Gujarat	Sabar Kantha	Sabar Kantha	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Surendranagar	Surendranagar	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Chhota Udaipur	Vadodara	https://revenuedepartment.gujarat.gov.in/	21 June, 2023
Gujarat	Vadodara	Vadodara	https://revenuedepartment.gujarat.gov.in/	21 June, 2023

Haryana

1 District of Bhiwani in Haryana was rearranged into 2 new Districts of Bhiwani and Dadri, as seen in the table below.

Table A.2.5: Reorganisation of Districts in Haryana

State Name	District Name	Parent District	Source Link	Date of access
Haryana	Bhiwani	Bhiwani	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	24 June 2023
Haryana	Dadri	Bhiwani	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	24 June 2023

Madhya Pradesh

1 District of Shajapur in Madhya Pradesh was rearranged into 2 new Districts of Agar Malwa and Shajapur, as seen in the table below.

Table A.2.6: Reorganisation of Districts in Madhya Pradesh

State Name	District Name	Parent District	Source Link	Date of Access
Madhya Pradesh	Agar Malwa	Shajapur	https://lgdirectory.gov.in/globalviewDistrictf	24 June 2023

			orcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	
Madhya Pradesh	Shajapur	Shajapur	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	24 June 2023

Maharashtra

1 District of Thane in Maharashtra was rearranged into 2 new Districts of Palghar and Thane, as seen in the table below.

Table A.2.7: Reorganisation of Districts in Maharashtra

State Name	District Name	Parent District	Source Link	Date of Access
Maharashtra	Palghar	Thane	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	8 June 2023
Maharashtra	Thane	Thane	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	8 June 2023

Meghalaya

4 Districts in Meghalaya were rearranged into 8 new Districts as seen in the table below – in Meghalaya's case, there were some very specific reorganisations that took place in terms of certain Villages being transferred from certain sub-Districts to the other. The Meghalaya

Government Notifications had a table of Villages and the exact sub-District they were being transferred to and the sub-District they were being transferred from.

The step-by-step process followed by rearranging all sub-Districts like in the case of other States was-

Step 1: Using the Government Notification for a District, the Villages of the newly formed District in Meghalaya were determined.

Step 2: The Government Notifications contained information regarding the transfer of Villages from a District or Districts to the newly formed District. These Districts are the parent Districts. Next, from the 2011 Village Census PCA File, Villages constituting these parent District or Districts were determined.

Step 3: After determining the Villages that constituted the newly formed District (Step 1) and its parent District (Step 2), changes in the Village constitutions of the parent Districts needed to be accounted for, as certain Villages from these parent Districts now were transferred to these newly formed Districts. This meant removing the Villages in list 1 (Villages in the newly formed District) from list 2 (Villages of the parent District from which the new District was formed).

Table A.2.8: Reorganisation of Districts in Meghalaya

State Name	District Name	Parent District	Source Link	Date of Access
Meghalaya	North Garo Hills	East Garo Hills	https://megpolice.gov.in/govt-notifications-regarding-creation-new-Districts-meghalaya	16 July, 2023
Meghalaya	East Garo Hills	East Garo Hills	https://megpolice.gov.in/govt-notifications-regarding-creation-new-Districts-meghalaya	16 July, 2023
Meghalaya	East Jaintia Hills	Jaintia Hills	https://megpolice.gov.in/govt-notifications-regarding-creation-new-Districts-meghalaya	16 July, 2023
Meghalaya	West Jaintia	Jaintia Hills	https://megpolice	16 July, 2023

	Hills		.gov.in/govt-notifications-regarding-creation-new-Districts-meghalaya	
Meghalaya	West Garo Hills	West Garo Hills	https://megpolice.gov.in/govt-notifications-regarding-creation-new-Districts-meghalaya	16 July, 2023
Meghalaya	South West Garo Hills	West Garo Hills	https://megpolice.gov.in/govt-notifications-regarding-creation-new-Districts-meghalaya	16 July, 2023
Meghalaya	West Khasi Hills	West Khasi Hills	https://megpolice.gov.in/govt-notifications-regarding-creation-new-Districts-meghalaya	16 July, 2023
Meghalaya	South West Khasi Hills	West Khasi Hills	https://megpolice.gov.in/govt-notifications-regarding-creation-new-Districts-meghalaya	16 July, 2023

NCT of Delhi

7 Districts of NCT Delhi were rearranged into 10 new Districts, as seen in the table below.

Table A.2.9: Reorganisation of Districts in NCT of Delhi

State Name	District Name	Parent District	Source Link	Date of Access
NCT of Delhi	Central	Central	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-	15 June, 2023

			TSQC-NQLL-LXUZ-JQ3D	
NCT of Delhi	East	East	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	15 June, 2023
NCT of Delhi	South East	South	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	15 June, 2023
NCT of Delhi	Shahdara	North East	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	15 June, 2023
NCT of Delhi	New Delhi	New Delhi	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	15 June, 2023
NCT of Delhi	North	North	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	15 June, 2023
NCT of Delhi	North East	North East	https://lgdirectory.gov.in/globalviewDistrictforcitiz	15 June, 2023

			en.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	
NCT of Delhi	North West	North West	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	15 June, 2023
NCT of Delhi	South	South	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	15 June, 2023
NCT of Delhi	South West	South West	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	15 June, 2023

Punjab

2 Districts of Firozpur and Gurdaspur in Punjab were rearranged into 4 new Districts, as seen in the table below.

Table A.2.10: Reorganisation of Districts in Punjab

State Name	District Name	Parent District	Source Link	Date of Access
Punjab	Fazilka	Firozpur	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-	24 June, 2023

			NQLL-LXUZ-JQ3D	
Punjab	Firozpur	Firozpur	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	24 June, 2023
Punjab	Pathankot	Gurdaspur	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	24 June, 2023
Punjab	Gurdaspur	Gurdaspur	https://lgdirectory.gov.in/globalviewDistrictforcitizen.do?OWASP_CSRFTOKEN=5HPN-H3J3-U1OI-8UNA-TSQC-NQLL-LXUZ-JQ3D	24 June, 2023

Telangana

Table A.2.11: Reorganisation of Districts in Telangana

State Name	District Name	Parent District	Source Link	Date of Access
Telangana	Adilabad	Adilabad	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Adilabad.pdf	25 June, 2023
Telangana	Kumuram Bheem (Asifabad)	Adilabad	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Komaram_Bheem.pdf	25 June, 2023
Telangana	Mancherial	Adilabad	https://mines.tela	25 June, 2023

			ngana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Mancherial.pdf	
Telangana	Nirmal	Adilabad	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Nirmal.pdf	25 June, 2023
Telangana	Jagtial	Karimnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Jagitial.pdf	25 June, 2023
Telangana	Karimnagar	Karimnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Karimnagar.pdf	25 June, 2023
Telangana	Peddapalle	Karimnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Peddapalli.pdf	25 June, 2023
Telangana	Rajanna Sircilla	Karimnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Rajanna.pdf	25 June, 2023
Telangana	Bhadradri Kothagudem	Khammam	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Bhadradri.pdf	25 June, 2023
Telangana	Khammam	Khammam	https://mines.telangana.gov.in/Min	25 June, 2023

			esAndGeology/Documents/GO's/New%20District%20Gos/Khammam.pdf	
Telangana	Jogulambha Gadwal	Mahbubnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Jogulamba.pdf	25 June, 2023
Telangana	Mahbubnagar	Mahbubnagar & Rangareddy	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Mahabubnagar.pdf	25 June, 2023
Telangana	Nagarkurnool	Mahbubnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Nagarkurnool.pdf	25 June, 2023
Telangana	Wanaparthy	Mahbubnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Wanaparthy.pdf	25 June, 2023
Telangana	Medak	Medak	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Medak.pdf	25 June, 2023
Telangana	Sangareddy	Medak	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Sangareddy.pdf	25 June, 2023
Telangana	Siddipet	Medak, Karimnagar & Warangal	https://mines.telangana.gov.in/MinesAndGeology/D	25 June, 2023

			ocuments/GO's/New%20District%20Gos/Siddipet.pdf	
Telangana	Nalgonda	Nalgonda	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Nalgonda.pdf	25 June, 2023
Telangana	Suryapet	Nalgonda	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Suryapet.pdf	25 June, 2023
Telangana	Yadadri Bhuvanagiri	Nalgonda	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Yadadri.pdf	25 June, 2023
Telangana	Kamareddy	Nizamabad	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Kamareddy.pdf	25 June, 2023
Telangana	Nizamabad	Nizamabad	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Nizamabad.pdf	25 June, 2023
Telangana	Ranga Reddy	Rangareddy and Mahboobnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Rangareddy.pdf	25 June, 2023
Telangana	Medchal-Malkajgiri	Rangareddy	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/N	25 June, 2023

			ew%20District%20Gos/Medchal.pdf	
Telangana	Vikarabad	Rangareddy & Mahbubnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Vikarabad.pdf	25 June, 2023
Telangana	Mahabubabad	Warangal & Khammam	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Mahababubabad.pdf	25 June, 2023
Telangana	Warangal Rural	Warangal	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Warangal_Rural.pdf	25 June, 2023
Telangana	Jayashankar Bhupalapally	Warangal, Karimnagar & Khamman	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Jayashankar.pdf	25 June, 2023
Telangana	Warangal Urban	Warangal & Karimnagar	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Warangal_Urban.pdf	25 June, 2023
Telangana	Jangaon	Warangal & Nalgonda	https://mines.telangana.gov.in/MinesAndGeology/Documents/GO's/New%20District%20Gos/Jangaon.pdf	25 June, 2023

Uttar Pradesh

6 Districts of Uttar Pradesh were rearranged into 10 new Districts, as seen in the table below. Government Notifications regarding reorganisation of every District was available except in the case of Amethi, Raebareli and Sultanpur – data regarding their reorganisation was taken from a news article.

Table A.2.12: Reorganisation of Districts in Uttar Pradesh

State Name	District Name	Parent District	Source Link	Date of Access
Uttar Pradesh	Budaun	Budaun	https://rahat.up.nic.in/gofile.aspx?barcode=Mjg3Ni8xLTUtMjAxMS0xNTQvMjAxMS1SQTAtNQ%3D%3D	22 June, 2023
Uttar Pradesh	Ghaziabad	Ghaziabad	https://rahat.up.nic.in/gofile.aspx?barcode=Mjg3Ny8xLTA1LTIwMTEtMTUzLzIwMTEtUkEwLTU%3D	22 June, 2023
Uttar Pradesh	Hapur	Ghaziabad	https://rahat.up.nic.in/gofile.aspx?barcode=Mjg3Ny8xLTA1LTIwMTEtMTUzLzIwMTEtUkEwLTU%3D	22 June, 2023
Uttar Pradesh	Moradabad	Moradabad	https://rahat.up.nic.in/gofile.aspx?barcode=Mjg3Ni8xLTUtMjAxMS0xNTQvMjAxMS1SQTAtNQ%3D%3D	22 June, 2023
Uttar Pradesh	Sambhal	Moradabad & Budaun	https://rahat.up.nic.in/gofile.aspx?barcode=Mjg3Ni8xLTUtMjAxMS0xNTQvMjAxMS1SQTAtNQ%3D%3D	22 June, 2023
Uttar Pradesh	Muzaffarnagar	Muzaffarnagar	https://rahat.up.nic.in/gofile.aspx?barcode=Mjg3NS8xLTUtMjAx	22 June, 2023

			MS0xNTUvMjAxMS1SQTAtNQ%3D%3D	
Uttar Pradesh	Shamli	Muzaffarnagar	https://rahat.up.nic.in/gofile.aspx?barcode=Mjg3NS8xLTUtMjAxMS0xNTUvMjAxMS1SQTAtNQ%3D%3D	22 June, 2023
Uttar Pradesh	Rae Bareli	Rae Bareli	https://economictimes.indiatimes.com/news/politics-and-nation/up-government-issues-notification-for-creation-of-amethi-as-new-District/articleshow/20934157.cms https://www.jagran.com/uttar-pradesh/amethi-13057108.html	22 June, 2023
Uttar Pradesh	Sultanpur	Sultanpur	https://economictimes.indiatimes.com/news/politics-and-nation/up-government-issues-notification-for-creation-of-amethi-as-new-District/articleshow/20934157.cms https://www.jagran.com/uttar-pradesh/amethi-13057108.html	22 June, 2023
Uttar Pradesh	Amethi	Sultanpur & Rae Bareli	https://economictimes.indiatimes.com/news/politics-and-nation/up-government-issues-notification-for-creation-of-	22 June, 2023

			amethi-as-new-District/articleshow/20934157.cms https://www.jagran.com/uttar-pradesh/amethi-13057108.html	

Assam

6 Districts of Assam were rearranged into 12 new Districts, as seen in the table below. The Government Notifications only provided information regarding the name of the newly formed District and the parent District it was formed out of. To account for the reorganisation of each of these 6 Districts, their respective District websites were referred to. From these websites, the revenue circles of these Districts were taken as their sub-Districts and the same methodology as in the case of the remaining States was followed. The Government Notifications were downloaded from the LGD Directory (Source: https://lgdirectory.gov.in/welcome.do?OWASP_CSRFTOKEN=TMX4-FJJH-2GCW-CO82-XKHN-RPI2-IUIP-5EQP, **Date of Access:** 4 August, 2023)

Source Link for the Assam Government Notification: https://dlrs.assam.gov.in/sites/default/files/swf_utility_folder/departments/dlr_revenue_uneecopscloud_com_oid_67/menu/document/notification_of_new_Districts_majuli_hojai_west_karbi_anglong_charaideo_south_salmara_mankachar_and_biswanth.pdf (**Date of Access:** 3rd August, 2023)

Table A.2.13: Reorganisation of Districts in Assam

State Name	District Name	Parent District	Source Link	Date of Access
Assam	Dhubri	Dhubri	PCA District file from: https://Censusindia.gov.in/Census.website/data/population-finder	4 August, 2023
Assam	South Salmara-Mankachar	Dhubri	https://southsalmaramankachar.assam.gov.in/about-us/District-profile	4 August, 2023
Assam	Jorhat	Jorhat	https://jorhat.assam.gov.in/about-us/District-profile	5 August, 2023
Assam	Majuli	Jorhat	PCA District file from: https://Censusindia.gov.in/	5 August, 2023

			Census.website/data/population-finder	
Assam	Karbi Anglong	Karbi Anglong	https://karbianglong.gov.in/information-services/general-data-of-karbi-anglong	3 August, 2023
Assam	Karbi Anglong West	Karbi Anglong	https://westkarbianglong.assam.gov.in/information-services/general-data-of-west-karbi-anglong	3 August, 2023
Assam	Hojai	Nagaon	https://hojai.assam.gov.in/about-us/District-profile	4 August, 2023
Assam	Nagaon	Nagaon	https://nagaon.assam.gov.in/about-us/District-profile	4 August, 2023
Assam	Charaideo	Sivasagar	https://charaideo.assam.gov.in/about-us/District-profile	4 August, 2023
Assam	Sivasagar	Sivasagar	https://sivasagar.assam.gov.in/about-us/about-us	4 August, 2023
Assam	Biswanath	Sonitpur	PCA District file from: https://Censusindia.gov.in/Census.website/data/population-finder	4 August, 2023
Assam	Sonitpur	Sonitpur	https://sonitpur.assam.gov.in/about-us/District-profile	4 August, 2023

Tripura

3 Districts of Assam were rearranged into 7 new Districts, as seen in the table below. The Government Notifications regarding rearrangements only provided information regarding on sub-divisional level and not sub-District or Village level. Due to the lack of information on District websites regarding the constitution of these subdivisions in terms of sub-Districts, these Districts were organised on the basis of subdivisions. Furthermore, to account for every sub-District and the entire population in a District, the same methodology as the remaining States was followed using the PCA file.

Table A.2.14: Reorganisation of Districts in Tripura

State Name	District Name	Parent District	Source Link	Date of Access
Tripura	North Tripura	North Tripura	https://jami.tripura.gov.in/GetFile.aspx?fid=8	23 June, 2023
Tripura	Unakoti	North Tripura	https://jami.tripura.gov.in/GetFile.aspx?fid=8	23 June, 2023
Tripura	Gomati	South Tripura	https://jami.tripura.gov.in/GetFil	23 June, 2023

			e.aspx?fid=8	
Tripura	South Tripura	South Tripura	https://jami.tripura.gov.in/GetFile.aspx?fid=8	23 June, 2023
Tripura	Khowai	West Tripura	https://jami.tripura.gov.in/GetFile.aspx?fid=8	23 June, 2023
Tripura	Sepahijala	West Tripura	https://jami.tripura.gov.in/GetFile.aspx?fid=8	23 June, 2023
Tripura	West Tripura	West Tripura	https://jami.tripura.gov.in/GetFile.aspx?fid=8	23 June, 2023

Appendix 3: Linking Clusters to the Shapefiles

The process below describes how NFHS-5 and NFHS-4 clusters were assigned to each of the four geographies.

A.3.1 – Linking Clusters to Districts

For NFHS-5 clusters, the cluster to district linkages that existed in the DHS microdata were taken as is with no adjustments made other than to the state of Andhra Pradesh.

NFHS-5 clusters that fell into the state of Andhra Pradesh as per the microdata were assigned to a district via a "spatial join" outlined below:

- Target features: NFHS-5 Clusters
- Joining features: 720 District Shapefile

NFHS-4 clusters that were assigned to one of the 564 unchanged districts in the NFHS-4 microdata, were taken as is with no adjustments made.

For clusters that fell within the remaining 156 districts' 76 parent district(s) as per the microdata were assigned to a district via a "spatial join" outlined below:

- Target features: NFHS-4 Clusters
- Joining features: 720 District Shapefile

In this process, 54 clusters in NFHS-4 were not assigned to any district as we could not ascertain the correct district to assign these clusters to. In other words, these clusters came from the 76 changed parent districts in NFHS-4 but did not fall into any of the eligible changed districts that originated from that particular parent district.

Therefore, the final number of clusters matched with districts are 30,170 and 28,470 in NFHS-5 and NFHS-4, respectively.

A.3.2 – Linking Clusters to Parliamentary Constituencies

To link clusters to Parliamentary Constituencies, a "spatial join" was performed for both NFHS-4 and NFHS-5 clusters separately as outlined below:

- Target features: NFHS-4 and NFHS-5 Clusters
- Joining features: 543 Parliamentary Constituency shapefile

After spatial joining, two types of clusters were identified in our quality checks:

Unmatched clusters: These clusters did not fall into any PC polygon in the shapefile. Thus, the unmatched clusters do not have PC attributes after spatial joining.

The number of unmatched clusters was reduced by identifying the associated state/UT names of the unmatched clusters. If one state/UT has only one PC (i.e., if PC and state/UT are the same), these unmatched clusters within these states/UTs can be linked to that PC even if the

clusters were initially "unmatched". This process will be valid for those states/UTs that have only one PC.

Each of the following states/UTs has only one PC.

- Andaman & Nicobar Islands
- Chandigarh
- Dadra & Nagar Haveli
- Daman & Diu
- Lakshadweep
- Mizoram
- Nagaland
- Puducherry
- Sikkim

Mismatched clusters: These clusters were identified within a PC boundary, but that PC belongs to a state/UT different from the original state/UT in the cluster shapefile. Thus, the state/UT name of these clusters in the PC shapefile is different from the NFHS cluster shapefile.

The number of mismatched clusters in NFHS-4 and NFHS-5 is 43 and 71, respectively. Applying the same logic mentioned above, the number of mismatched clusters was reduced. If one state/UT has only one PC (i.e., if PC and state/UT are the same), these unmatched clusters within these states/UTs can be linked to that PC even if the clusters were initially "unmatched". This process will be valid for those states/UTs that have only one PC.

After correcting the unmatched and mismatched clusters, the remaining number of the unmatched and mismatched clusters are shown in the Table below. The remaining unmatched and mismatched clusters were dropped from the final file. Thus, the final number of clusters in the final linking files are 28,372 and 29,998 in NFHS-4 and NFHS-5 respectively.

	Cluster selection flow	NFHS-4	NFHS-5
	Merged clusters from household file		
a	Total clusters in cluster shapefile	28,526	30,197
b	Total clusters in household data file	28,524	30,170
c	Total clusters in shapefile unmatched with household data file	2	27
d	Total clusters in shapefile matched with household data file	28,524	30,170
	Unmatched clusters		
e	Total unmatched clusters	180	157
f	Unmatched clusters that were fixed	53	26
g	Unfixed unmatched clusters (e – f)	127	131
	Mismatched clusters		
h	Total mismatched clusters	43	71
i	Mismatched clusters that were fixed	18	30
j	Unfixed mismatched clusters (h – i)	25	41

l	Total number of unfixed clusters (g + j)	152	172
i	***Final number of clusters*** (d - l)	28,372	29,998

A.3.3 – Linking Clusters to Assembly Constituencies

To link clusters to Assembly Constituencies, a "spatial join" was performed for both NFHS-4 and NFHS-5 clusters separately as outlined below:

- Target features: NFHS-4 and NFHS-5 Clusters
- Joining features: 4119 Assembly Constituency shapefile

After spatial joining, the following process shown in the Table below resulted in 28,019 and 29,639 clusters matched to ACs in NFHS-4 and NFHS-5, respectively.

	Cluster selection flow	NFHS-4	NFHS-5
a	Total clusters	28,526	30,197
b	Total clusters after dropping the clusters from non-AC UTs	28,225	29,862
	Unmatched clusters		
c	Matched clusters with 23 non-AC polygons (water lands, forest, etc)	30	30
d	Unmatched clusters (Not identified in any polygons)	136	129
e	Total unmatched clusters (c + d)	166	159
	Mismatched clusters		
f	Total mismatched clusters (Clusters identified in different state of AC shapefile than the cluster shapefile)	40	64
g	Total number of clusters dropped (e + f)	206	223
h	***Final number of clusters*** (b - g)	28,019	29,639

A.3.4 – Linking Clusters to Villages

Table 1: Notation

N	$\triangleq$	Number of Rural Villages
C	$\triangleq$	Number of Clusters
d	$\triangleq$	Number of Village Level Census Features
m	$\triangleq$	Number of Indicators to Predict
$\mathbf{V}_C$	$\triangleq$	Binary Matrix of Village Cluster Map
$\mathbf{I}_0$	$\triangleq$	Set of Villages Mapped one-to-one with Clusters
$\mathbf{Y}_C$	$\triangleq$	Matrix of Cluster Indicators
$\mathbf{X}$	$\triangleq$	Matrix of Village Census Features

Algorithm 1 Expand Labels

Input: $\mathbf{Y}_C \in \Re^{C \times m}$ ▷ Cluster Indicators
Input: $\hat{\mathbf{Y}}_\mathbf{i}$ ▷ Village Predictions
Input: $\mathbf{V}_C \in \{0,1\}^{N \times C}$ ▷ Cluster-Village Mapping
Output: $\mathbf{I}_V \in \Re^C$ ▷ Expanded Village Indices

```
c = 0
I_V = Φ                                   ▷ Initialize to Empty Set
while c < C do
    J_c = {j : V_C[c, j] = 1}
    j_min = argmin_{j ∈ J_c} ||Ŷ_i[j, :] − Y_C[c, :]||
    I_V = I_V ∪ j_min
end while
```

Algorithm 2 Multivariate Precision Estimates

Input: $\mathbf{X} \in \Re^{N \times d}$ ▷ Village Features
Input: $\mathbf{Y}_C \in \Re^{C \times m}$ ▷ Cluster Indicators
Input: $\mathbf{V}_C \in \{0,1\}^{N \times C}$ ▷ Cluster-Village Mapping
Input: $\mathbf{I}_0$ ▷ Set of Villages Mapped one-to-one with Clusters
Output: $\hat{\mathbf{Y}}_V \in \Re^{N \times m}$ ▷ Village Indicators

```
M_0 = RandomForest(X_{I_0}, Y_0)          ▷ Initial Model
Ŷ_0 = Predict_{M_0}(X_{I_0})              ▷ First Set of Predictions
i = 1
while i ≤ 10 do
    I_V = ExpandLabels(Ŷ_i, Y_C, V_C)     ▷ Expanded Labels are ℜ^{C×m}
    M_i = RandomForest(X_{I_V}, Y_C)      ▷ Refit Model on the Expanded Set
    Ŷ_i = Predict_{M_i}(X)                ▷ Updated Predictions
    i = i + 1
end while
```

Algorithm 2 details the procedure used to derive village estimates. The method begins with first using villages that are mapped one-to-one with clusters as labeled data with census features as input and the multivariate cluster estimates as output (for all the 123 indicators). A first estimate of the predictions is obtained by training a Random Forest model and then computing predictions for all the villages (597,607). But since the predictions are heavily biased towards the initial labeled set, we use Algorithm 1 to expand the labeled set to all the known cluster estimates. The expand labels procedure essentially cycles through all the clusters and maps the cluster values to the village that has the smallest Euclidean distance to the multivariate village predictions (only among the villages mapped to this cluster) and hence grows the labeled set of villages to the number of clusters. This expanded set is then returned to the main procedure and a Random Forest model is retrained on a subset of census features corresponding to this set as input and all the cluster values as output. These two steps are wrapped into an iterative scheme to further refine the expanded set and the corresponding predictions. To produce the final prediction set of 123 indicators for all 597,607 villages we execute this two step process 10 times or more generally when the predictions cease to change much.

Appendix 4: Indicator distribution by District, PC, and AC

Table A.4.1: IPI indicator distribution by District

Indicator ID	Category	Indicator Name	District (720)	
			2016	2021
1	Socio-Economic Profile	Population with BPL cards	720	720
2	Health Care	Acute Respiratory Infection [All Children]	720	720
3	Health Care	Acute Respiratory Infection [Children Getting Treatment - Facility]	715	719
4	Health Care	Diarrhoea [Received ORS]	716	718
5	Health Care	Diarrhoea [Received Zinc]	716	718
6	Health Care	Diarrhoea Treatment [Facility]	716	718
7	Health Care	DPT Vaccination [3 Doses]	720	720
8	Health Care	Full Vaccination	720	720
9	Health Care	Full Vaccination [Vaccination Card]	720	720
10	Health Care	Health Insurance [Any]	720	720
11	Health Care	Hepatitis B Vaccine [3 Doses]	720	720
12	Health Care	ICDS Benefits [Children]	720	720
13	Health Care	Low Birth Weight	720	720
14	Health Care	Measles-Containing Vaccine [First Dose]	720	720
15	Health Care	Measles-Containing Vaccine [Second Dose]	NA	720
16	Health Care	Polio Vaccination [3 Doses]	720	720
18	Health Care	Rotavirus Vaccine [3 Doses]	NA	720
19	Health Care	Vitamin A Dose	720	720
20	Health Care	Zero Dose [Child Immunization]	720	720
21	Maternal Health and Family Planning	Antenatal Care Visit [Four or More]	720	720
22	Maternal Health and Family Planning	Antenatal Care Visit [First Trimester]	720	720
23	Maternal Health and Family Planning	Birth Registration	720	720
24	Maternal Health and Family Planning	Birth Weight Recorded	720	720
25	Maternal Health and Family Planning	Caesarean Section Delivery	720	720
26	Maternal Health and Family Planning	Caesarean Section in Private Sector	715	717
27	Maternal Health and Family Planning	Caesarean Section in Public Sector	720	720
28	Maternal Health and Family Planning	Childbirths in Public Facility	720	720
29	Maternal Health and Family Planning	Condom	720	720

Indicator ID	Category	Indicator Name	District (720)	
			2016	2021
30	Maternal Health and Family Planning	Family Planning [Any Methods by Women]	720	720
31	Maternal Health and Family Planning	Family Planning [Modern]	720	720
32	Maternal Health and Family Planning	Family Planning [Unmet Need]	720	720
33	Maternal Health and Family Planning	Family Planning Services Quality [Family Planning Counselling]	720	720
34	Maternal Health and Family Planning	Female Sterilization	720	720
35	Maternal Health and Family Planning	Family Planning Services Quality [Side Effects Counselling]	720	720
36	Maternal Health and Family Planning	Home Delivery by Skilled Health Personnel	720	720
37	Maternal Health and Family Planning	Injectables	NA	720
38	Maternal Health and Family Planning	Institutional Childbirth	720	720
39	Maternal Health and Family Planning	Iron Folic Acid [100 days or more]	720	720
40	Maternal Health and Family Planning	Iron Folic Acid [180 days or more]	720	720
41	Maternal Health and Family Planning	IUD/PPIUD	720	720
42	Maternal Health and Family Planning	Male Sterilization	720	720
43	Maternal Health and Family Planning	Maternal Care Quality [Postpartum]	719	720
44	Maternal Health and Family Planning	Mother and Child Protection Card	720	720
45	Maternal Health and Family Planning	Neonatal Tetanus	720	720
46	Maternal Health and Family Planning	Pill	720	720
47	Maternal Health and Family Planning	Postnatal Care [Mothers]	720	720
49	Maternal Health and Family Planning	Pregnancy Registration	720	720
50	Maternal Health and Family Planning	Skilled Birth Attendance	720	720
51	Maternal Health and Family Planning	Unmet Need for Spacing	720	720
52	Morbidity and Mortality	Diarrhoea [Children]	720	720
53	Morbidity and Mortality	Elevated Blood Pressure or On Medication [Men]	NA	720
54	Morbidity and Mortality	Elevated Blood Pressure or On Medication [Women]	NA	720
55	Morbidity and Mortality	High Blood Sugar [Men]	718	720
56	Morbidity and Mortality	High Blood Sugar [Women]	720	720
57	Morbidity and Mortality	High or Very High Blood Sugar or On Medication [Men]	718	720
58	Morbidity and Mortality	High or Very High Blood Sugar or On Medication [Women]	720	720
59	Morbidity and Mortality	Mildly Elevated Blood Pressure [Men]	718	720
60	Morbidity and Mortality	Mildly Elevated Blood Pressure [Women]	720	720
61	Morbidity and Mortality	Moderate or Severe Blood Pressure [Men]	718	720
62	Morbidity and Mortality	Moderate or Severe Blood Pressure [Women]	720	720

Indicator ID	Category	Indicator Name	District (720)	
			2016	2021
63	Morbidity and Mortality	Probability of Dying before Five Years	720	720
64	Morbidity and Mortality	Probability of Dying before One Year	720	720
65	Morbidity and Mortality	Probability of Dying within 28 Days	720	720
66	Morbidity and Mortality	Risky Waist-to-hip Ratio [Women]	NA	720
67	Morbidity and Mortality	Very High Blood Sugar [Men]	718	720
68	Morbidity and Mortality	Very High Blood Sugar [Women]	720	720
69	Nutrition [Clinical/Anthropometry]	Anaemia [Any - Adolescent Women]	720	720
70	Nutrition [Clinical/Anthropometry]	Anaemia [Any - All Women]	720	720
71	Nutrition [Clinical/Anthropometry]	Anaemia [Any - Pregnant Women]	718	720
72	Nutrition [Clinical/Anthropometry]	Child Anaemia [Any]	720	720
73	Nutrition [Clinical/Anthropometry]	Child Stunting	720	720
74	Nutrition [Clinical/Anthropometry]	Child Underweight	720	720
75	Nutrition [Clinical/Anthropometry]	Child Wasting	720	720
76	Nutrition [Clinical/Anthropometry]	Mild Anaemia [Children]	720	720
77	Nutrition [Clinical/Anthropometry]	Mild Anaemia [Women]	720	720
78	Nutrition [Clinical/Anthropometry]	Moderate Anaemia [Children]	720	720
79	Nutrition [Clinical/Anthropometry]	Moderate Anaemia [Women]	720	720
80	Nutrition [Clinical/Anthropometry]	Overweight Children	720	720
81	Nutrition [Clinical/Anthropometry]	Overweight or Obese [Women]	720	720
82	Nutrition [Clinical/Anthropometry]	Severe Anaemia [Children]	720	720
83	Nutrition [Clinical/Anthropometry]	Severe Anaemia [Women]	720	720
84	Nutrition [Clinical/Anthropometry]	Severe Stunting [Children]	720	720
85	Nutrition [Clinical/Anthropometry]	Severe Underweight [Children]	720	720
86	Nutrition [Clinical/Anthropometry]	Severe Wasting [Children]	720	720
87	Nutrition [Clinical/Anthropometry]	Underweight [Women]	720	720
88	Nutrition [Diet]	Adequate Diet [Breastfed Children]	720	720
89	Nutrition [Diet]	Adequate Diet [Non-breastfed Children]	700	711
90	Nutrition [Diet]	Adequate Diet [Total]	720	720
91	Nutrition [Diet]	Early Breastfeeding Initiation	720	720
92	Nutrition [Diet]	ICDS Supplementary Nutrition	720	720
93	Nutrition [Diet]	Iodized Salt Intake	720	720
94	Nutrition [Diet]	Exclusive Breastfeeding [Under 6 Months]	719	720

Indicator ID	Category	Indicator Name	District (720)	
			2016	2021
95	Nutrition [Diet]	Receiving Solid/Semi-solid Food [6-8 Months]	715	720
96	Nutrition [Diet]	Zero Food [Children]	720	720
97	Social Infrastructure	Access to Electricity	720	720
98	Social Infrastructure	Clean Cooking Fuel	720	720
99	Social Infrastructure	Death Registration	NA	720
100	Social Infrastructure	Handwashing Facilities	720	720
101	Social Infrastructure	Hygienic Protection Methods [Menstruation]	720	720
102	Social Infrastructure	Improved Sanitation Facility	720	720
103	Social Infrastructure	Improved Source of Drinking Water	720	720
104	Social Infrastructure	Internet Usage [Women]	NA	720
105	Social Infrastructure	Private Latrine	720	720
106	Social Infrastructure	Safe Stool Disposal	720	720
107	Social Infrastructure	Women with Personal Mobile Phone	718	720
108	Socio-Economic Profile	Alcohol Consumption [Men]	718	720
109	Socio-Economic Profile	Alcohol Consumption [Women]	720	720
110	Socio-Economic Profile	Child Marriage [Boy]	717	719
111	Socio-Economic Profile	Child Marriage [Girl]	720	720
112	Socio-Economic Profile	Currently Working Women	718	720
113	Socio-Economic Profile	Female School Attendance	720	720
114	Socio-Economic Profile	High School Matriculation [Men]	718	720
115	Socio-Economic Profile	High School Matriculation [Women]	720	720
116	Socio-Economic Profile	Intimate Partner Violence [Against Women]	718	720
117	Socio-Economic Profile	Literacy [Men]	718	720
118	Socio-Economic Profile	Literacy [Women]	720	720
119	Socio-Economic Profile	Population below 15 Years	720	720
120	Socio-Economic Profile	Sexual Violence [Young Women]	716	720
121	Socio-Economic Profile	Teenage Pregnancy	720	720
122	Socio-Economic Profile	Tobacco Consumption [Women]	720	720
123	Socio-Economic Profile	Tobacco Use [Men]	718	720
124	Socio-Economic Profile	Women Participation in Household Decisions	718	720

Table A.4.2: IPI indicator distribution by Parliamentary Constituency

Indicator ID	Category	Indicator Name	PC (543)	
			2016	2021
1	Socio-Economic Profile	Population with BPL cards	543	543
2	Health Care	Acute Respiratory Infection [All Children]	543	543
3	Health Care	Acute Respiratory Infection [Children Getting Treatment - Facility]	541	538
4	Health Care	Diarrhoea [Received ORS]	540	532
5	Health Care	Diarrhoea [Received Zinc]	540	532
6	Health Care	Diarrhoea Treatment [Facility]	540	532
7	Health Care	DPT Vaccination [3 Doses]	543	543
8	Health Care	Full Vaccination	543	543
9	Health Care	Full Vaccination [Vaccination Card]	543	543
10	Health Care	Health Insurance [Any]	543	543
11	Health Care	Hepatitis B Vaccine [3 Doses]	543	543
12	Health Care	ICDS Benefits [Children]	543	543
13	Health Care	Low Birth Weight	543	543
14	Health Care	Measles-Containing Vaccine [First Dose]	543	543
15	Health Care	Measles-Containing Vaccine [Second Dose]	NA	542
16	Health Care	Polio Vaccination [3 Doses]	543	543
18	Health Care	Rotavirus Vaccine [3 Doses]	NA	543
19	Health Care	Vitamin A Dose	543	543
20	Health Care	Zero Dose [Child Immunization]	543	543
21	Maternal Health and Family Planning	Antenatal Care Visit [Four or More]	543	543
22	Maternal Health and Family Planning	Antenatal Care Visit [First Trimester]	543	543
23	Maternal Health and Family Planning	Birth Registration	543	543
24	Maternal Health and Family Planning	Birth Weight Recorded	543	543
25	Maternal Health and Family Planning	Caesarean Section Delivery	543	543
26	Maternal Health and Family Planning	Caesarean Section in Private Sector	543	543
27	Maternal Health and Family Planning	Caesarean Section in Public Sector	543	543
28	Maternal Health and Family Planning	Childbirths in Public Facility	543	543
29	Maternal Health and Family Planning	Condom	543	543
30	Maternal Health and Family Planning	Family Planning [Any Methods by Women]	543	543
31	Maternal Health and Family Planning	Family Planning [Modern]	543	543

Indicator ID	Category	Indicator Name	PC (543)	
			2016	2021
32	Maternal Health and Family Planning	Family Planning [Unmet Need]	543	543
33	Maternal Health and Family Planning	Family Planning Services Quality [Family Planning Counselling]	543	543
34	Maternal Health and Family Planning	Female Sterilization	543	543
35	Maternal Health and Family Planning	Family Planning Services Quality [Side Effects Counselling]	543	543
36	Maternal Health and Family Planning	Home Delivery by Skilled Health Personnel	543	543
37	Maternal Health and Family Planning	Injectables	NA	543
38	Maternal Health and Family Planning	Institutional Childbirth	543	543
39	Maternal Health and Family Planning	Iron Folic Acid [100 days or more]	543	543
40	Maternal Health and Family Planning	Iron Folic Acid [180 days or more]	543	543
41	Maternal Health and Family Planning	IUD/PPIUD	543	543
42	Maternal Health and Family Planning	Male Sterilization	543	543
43	Maternal Health and Family Planning	Maternal Care Quality [Postpartum]	543	542
44	Maternal Health and Family Planning	Mother and Child Protection Card	543	543
45	Maternal Health and Family Planning	Neonatal Tetanus	543	543
46	Maternal Health and Family Planning	Pill	543	543
47	Maternal Health and Family Planning	Postnatal Care [Mothers]	543	543
49	Maternal Health and Family Planning	Pregnancy Registration	543	543
50	Maternal Health and Family Planning	Skilled Birth Attendance	543	543
51	Maternal Health and Family Planning	Unmet Need for Spacing	543	543
52	Morbidity and Mortality	Diarrhoea [Children]	543	543
53	Morbidity and Mortality	Elevated Blood Pressure or On Medication [Men]	NA	543
54	Morbidity and Mortality	Elevated Blood Pressure or On Medication [Women]	NA	543
55	Morbidity and Mortality	High Blood Sugar [Men]	542	543
56	Morbidity and Mortality	High Blood Sugar [Women]	543	543
57	Morbidity and Mortality	High or Very High Blood Sugar or On Medication [Men]	542	543
58	Morbidity and Mortality	High or Very High Blood Sugar or On Medication [Women]	543	543
59	Morbidity and Mortality	Mildly Elevated Blood Pressure [Men]	542	543
60	Morbidity and Mortality	Mildly Elevated Blood Pressure [Women]	543	543
61	Morbidity and Mortality	Moderate or Severe Blood Pressure [Men]	542	543
62	Morbidity and Mortality	Moderate or Severe Blood Pressure [Women]	543	543
63	Morbidity and Mortality	Probability of Dying before Five Years	543	543
64	Morbidity and Mortality	Probability of Dying before One Year	543	543

Indicator ID	Category	Indicator Name	PC (543)	
			2016	2021
65	Morbidity and Mortality	Probability of Dying within 28 Days	543	543
66	Morbidity and Mortality	Risky Waist-to-hip Ratio [Women]	NA	543
67	Morbidity and Mortality	Very High Blood Sugar [Men]	542	543
68	Morbidity and Mortality	Very High Blood Sugar [Women]	543	543
69	Nutrition [Clinical/Anthropometry]	Anaemia [Any - Adolescent Women]	543	543
70	Nutrition [Clinical/Anthropometry]	Anaemia [Any - All Women]	543	543
71	Nutrition [Clinical/Anthropometry]	Anaemia [Any - Pregnant Women]	541	542
72	Nutrition [Clinical/Anthropometry]	Child Anaemia [Any]	543	543
73	Nutrition [Clinical/Anthropometry]	Child Stunting	543	543
74	Nutrition [Clinical/Anthropometry]	Child Underweight	543	543
75	Nutrition [Clinical/Anthropometry]	Child Wasting	543	543
76	Nutrition [Clinical/Anthropometry]	Mild Anaemia [Children]	543	543
77	Nutrition [Clinical/Anthropometry]	Mild Anaemia [Women]	543	543
78	Nutrition [Clinical/Anthropometry]	Moderate Anaemia [Children]	543	543
79	Nutrition [Clinical/Anthropometry]	Moderate Anaemia [Women]	543	543
80	Nutrition [Clinical/Anthropometry]	Overweight Children	543	543
81	Nutrition [Clinical/Anthropometry]	Overweight or Obese [Women]	543	543
82	Nutrition [Clinical/Anthropometry]	Severe Anaemia [Children]	543	543
83	Nutrition [Clinical/Anthropometry]	Severe Anaemia [Women]	543	543
84	Nutrition [Clinical/Anthropometry]	Severe Stunting [Children]	543	543
85	Nutrition [Clinical/Anthropometry]	Severe Underweight [Children]	543	543
86	Nutrition [Clinical/Anthropometry]	Severe Wasting [Children]	543	543
87	Nutrition [Clinical/Anthropometry]	Underweight [Women]	543	543
88	Nutrition [Diet]	Adequate Diet [Breastfed Children]	543	543
89	Nutrition [Diet]	Adequate Diet [Non-breastfed Children]	526	531
90	Nutrition [Diet]	Adequate Diet [Total]	543	543
91	Nutrition [Diet]	Early Breastfeeding Initiation	543	543
92	Nutrition [Diet]	ICDS Supplementary Nutrition	543	543
93	Nutrition [Diet]	Iodized Salt Intake	543	543
94	Nutrition [Diet]	Exclusive Breastfeeding [Under 6 Months]	540	541
95	Nutrition [Diet]	Receiving Solid/Semi-solid Food [6-8 Months]	541	539
96	Nutrition [Diet]	Zero Food [Children]	543	543

Indicator ID	Category	Indicator Name	PC (543)	
			2016	2021
97	Social Infrastructure	Access to Electricity	543	543
98	Social Infrastructure	Clean Cooking Fuel	543	543
99	Social Infrastructure	Death Registration	NA	543
100	Social Infrastructure	Handwashing Facilities	543	543
101	Social Infrastructure	Hygienic Protection Methods [Menstruation]	543	543
102	Social Infrastructure	Improved Sanitation Facility	543	543
103	Social Infrastructure	Improved Source of Drinking Water	543	543
104	Social Infrastructure	Internet Usage [Women]	NA	542
105	Social Infrastructure	Private Latrine	543	543
106	Social Infrastructure	Safe Stool Disposal	543	543
107	Social Infrastructure	Women with Personal Mobile Phone	542	542
108	Socio-Economic Profile	Alcohol Consumption [Men]	542	543
109	Socio-Economic Profile	Alcohol Consumption [Women]	543	543
110	Socio-Economic Profile	Child Marriage [Boy]	540	539
111	Socio-Economic Profile	Child Marriage [Girl]	543	543
112	Socio-Economic Profile	Currently Working Women	542	542
113	Socio-Economic Profile	Female School Attendance	543	543
114	Socio-Economic Profile	High School Matriculation [Men]	542	542
115	Socio-Economic Profile	High School Matriculation [Women]	543	543
116	Socio-Economic Profile	Intimate Partner Violence [Against Women]	542	542
117	Socio-Economic Profile	Literacy [Men]	542	542
118	Socio-Economic Profile	Literacy [Women]	543	543
119	Socio-Economic Profile	Population below 15 Years	543	543
120	Socio-Economic Profile	Sexual Violence [Young Women]	542	539
121	Socio-Economic Profile	Teenage Pregnancy	543	543
122	Socio-Economic Profile	Tobacco Consumption [Women]	543	543
123	Socio-Economic Profile	Tobacco Use [Men]	542	543
124	Socio-Economic Profile	Women Participation in Household Decisions	542	542

Table A.4.3: IPI indicator distribution by Assembly Constituency

Indicator ID	Category	Indicator Name	AC (4119)	
			2016	2021
1	Socio-Economic Profile	Population with BPL cards	3,956	3,950
2	Health Care	Acute Respiratory Infection [All Children]	3,948	3,939
3	Health Care	Acute Respiratory Infection [Children Getting Treatment - Facility]	3,410	3,476
4	Health Care	Diarrhoea [Received ORS]	3,147	2,995
5	Health Care	Diarrhoea [Received Zinc]	3,126	2,978
6	Health Care	Diarrhoea Treatment [Facility]	3,147	2,996
7	Health Care	DPT Vaccination [3 Doses]	3,817	3,783
8	Health Care	Full Vaccination	3,814	3,781
9	Health Care	Full Vaccination [Vaccination Card]	3,673	3,739
10	Health Care	Health Insurance [Any]	3,956	3,950
11	Health Care	Hepatitis B Vaccine [3 Doses]	3,817	3,743
12	Health Care	ICDS Benefits [Children]	3,950	3,944
13	Health Care	Low Birth Weight	3,941	3,939
14	Health Care	Measles-Containing Vaccine [First Dose]	3,815	3,781
15	Health Care	Measles-Containing Vaccine [Second Dose]	NA	3,797
16	Health Care	Polio Vaccination [3 Doses]	3,817	3,783
18	Health Care	Rotavirus Vaccine [3 Doses]	NA	3,778
19	Health Care	Vitamin A Dose	3,924	3,903
20	Health Care	Zero Dose [Child Immunization]	3,817	3,783
21	Maternal Health and Family Planning	Antenatal Care Visit [Four or More]	3,948	3,938
22	Maternal Health and Family Planning	Antenatal Care Visit [First Trimester]	3,948	3,939
23	Maternal Health and Family Planning	Birth Registration	3,951	3,940
24	Maternal Health and Family Planning	Birth Weight Recorded	3,948	3,939
25	Maternal Health and Family Planning	Caesarean Section Delivery	3,948	3,939
26	Maternal Health and Family Planning	Caesarean Section in Private Sector	3,707	3,662
27	Maternal Health and Family Planning	Caesarean Section in Public Sector	3,892	3,891
28	Maternal Health and Family Planning	Childbirths in Public Facility	3,948	3,939
29	Maternal Health and Family Planning	Condom	3,956	3,949
30	Maternal Health and Family Planning	Family Planning [Any Methods by Women]	3,956	3,949
31	Maternal Health and Family Planning	Family Planning [Modern]	3,956	3,949

Indicator ID	Category	Indicator Name	AC (4119)	
			2016	2021
32	Maternal Health and Family Planning	Family Planning [Unmet Need]	3,956	3,949
33	Maternal Health and Family Planning	Family Planning Services Quality [Family Planning Counselling]	3,956	3,950
34	Maternal Health and Family Planning	Female Sterilization	3,956	3,949
35	Maternal Health and Family Planning	Family Planning Services Quality [Side Effects Counselling]	3,827	3,873
36	Maternal Health and Family Planning	Home Delivery by Skilled Health Personnel	3,948	3,939
37	Maternal Health and Family Planning	Injectables	NA	3,949
38	Maternal Health and Family Planning	Institutional Childbirth	3,948	3,939
39	Maternal Health and Family Planning	Iron Folic Acid [100 days or more]	3,948	3,939
40	Maternal Health and Family Planning	Iron Folic Acid [180 days or more]	3,948	3,939
41	Maternal Health and Family Planning	IUD/PPIUD	3,956	3,949
42	Maternal Health and Family Planning	Male Sterilization	3,956	3,949
43	Maternal Health and Family Planning	Maternal Care Quality [Postpartum]	3,844	3,837
44	Maternal Health and Family Planning	Mother and Child Protection Card	3,943	3,939
45	Maternal Health and Family Planning	Neonatal Tetanus	3,948	3,938
46	Maternal Health and Family Planning	Pill	3,956	3,949
47	Maternal Health and Family Planning	Postnatal Care [Mothers]	3,948	3,939
49	Maternal Health and Family Planning	Pregnancy Registration	3,948	3,939
50	Maternal Health and Family Planning	Skilled Birth Attendance	3,948	3,939
51	Maternal Health and Family Planning	Unmet Need for Spacing	3,956	3,949
52	Morbidity and Mortality	Diarrhoea [Children]	3,948	3,939
53	Morbidity and Mortality	Elevated Blood Pressure or On Medication [Men]	NA	3,940
54	Morbidity and Mortality	Elevated Blood Pressure or On Medication [Women]	NA	3,940
55	Morbidity and Mortality	High Blood Sugar [Men]	3,318	3,949
56	Morbidity and Mortality	High Blood Sugar [Women]	3,956	3,949
57	Morbidity and Mortality	High or Very High Blood Sugar or On Medication [Men]	3,318	3,949
58	Morbidity and Mortality	High or Very High Blood Sugar or On Medication [Women]	3,956	3,949
59	Morbidity and Mortality	Mildly Elevated Blood Pressure [Men]	3,314	3,940
60	Morbidity and Mortality	Mildly Elevated Blood Pressure [Women]	3,955	3,940
61	Morbidity and Mortality	Moderate or Severe Blood Pressure [Men]	3,314	3,940
62	Morbidity and Mortality	Moderate or Severe Blood Pressure [Women]	3,955	3,940
63	Morbidity and Mortality	Probability of Dying before Five Years	3,948	3,939
64	Morbidity and Mortality	Probability of Dying before One Year	3,948	3,939

Indicator ID	Category	Indicator Name	AC (4119)	
			2016	2021
65	Morbidity and Mortality	Probability of Dying within 28 Days	3,948	3,939
66	Morbidity and Mortality	Risky Waist-to-hip Ratio [Women]	NA	3,950
67	Morbidity and Mortality	Very High Blood Sugar [Men]	3,318	3,949
68	Morbidity and Mortality	Very High Blood Sugar [Women]	3,956	3,950
69	Nutrition [Clinical/Anthropometry]	Anaemia [Any - Adolescent Women]	3,934	3,921
70	Nutrition [Clinical/Anthropometry]	Anaemia [Any - All Women]	3,956	3,950
71	Nutrition [Clinical/Anthropometry]	Anaemia [Any - Pregnant Women]	3,636	3,627
72	Nutrition [Clinical/Anthropometry]	Child Anaemia [Any]	3,943	3,921
73	Nutrition [Clinical/Anthropometry]	Child Stunting	3,941	3,926
74	Nutrition [Clinical/Anthropometry]	Child Underweight	3,941	3,926
75	Nutrition [Clinical/Anthropometry]	Child Wasting	3,941	3,922
76	Nutrition [Clinical/Anthropometry]	Mild Anaemia [Children]	3,943	3,921
77	Nutrition [Clinical/Anthropometry]	Mild Anaemia [Women]	3,956	3,950
78	Nutrition [Clinical/Anthropometry]	Moderate Anaemia [Children]	3,943	3,921
79	Nutrition [Clinical/Anthropometry]	Moderate Anaemia [Women]	3,956	3,950
80	Nutrition [Clinical/Anthropometry]	Overweight Children	3,941	3,922
81	Nutrition [Clinical/Anthropometry]	Overweight or Obese [Women]	3,956	3,949
82	Nutrition [Clinical/Anthropometry]	Severe Anaemia [Children]	3,943	3,921
83	Nutrition [Clinical/Anthropometry]	Severe Anaemia [Women]	3,956	3,950
84	Nutrition [Clinical/Anthropometry]	Severe Stunting [Children]	3,941	3,926
85	Nutrition [Clinical/Anthropometry]	Severe Underweight [Children]	3,941	3,926
86	Nutrition [Clinical/Anthropometry]	Severe Wasting [Children]	3,941	3,922
87	Nutrition [Clinical/Anthropometry]	Underweight [Women]	3,956	3,949
88	Nutrition [Diet]	Adequate Diet [Breastfed Children]	3,821	3,811
89	Nutrition [Diet]	Adequate Diet [Non-breastfed Children]	2,799	2,672
90	Nutrition [Diet]	Adequate Diet [Total]	3,867	3,852
91	Nutrition [Diet]	Early Breastfeeding Initiation	3,942	3,923
92	Nutrition [Diet]	ICDS Supplementary Nutrition	3,948	3,939
93	Nutrition [Diet]	Iodized Salt Intake	3,956	3,950
94	Nutrition [Diet]	Exclusive Breastfeeding [Under 6 Months]	3,479	3,475
95	Nutrition [Diet]	Receiving Solid/Semi-solid Food [6-8 Months]	3,146	3,042
96	Nutrition [Diet]	Zero Food [Children]	3,869	3,862

Indicator ID	Category	Indicator Name	AC (4119)	
			2016	2021
97	Social Infrastructure	Access to Electricity	3,956	3,950
98	Social Infrastructure	Clean Cooking Fuel	3,956	3,950
99	Social Infrastructure	Death Registration	NA	3,914
100	Social Infrastructure	Handwashing Facilities	3,956	3,950
101	Social Infrastructure	Hygienic Protection Methods [Menstruation]	3,956	3,946
102	Social Infrastructure	Improved Sanitation Facility	3,956	3,950
103	Social Infrastructure	Improved Source of Drinking Water	3,956	3,950
104	Social Infrastructure	Internet Usage [Women]	NA	3,298
105	Social Infrastructure	Private Latrine	3,956	3,950
106	Social Infrastructure	Safe Stool Disposal	3,948	3,893
107	Social Infrastructure	Women with Personal Mobile Phone	3,321	3,298
108	Socio-Economic Profile	Alcohol Consumption [Men]	3,321	3,950
109	Socio-Economic Profile	Alcohol Consumption [Women]	3,956	3,950
110	Socio-Economic Profile	Child Marriage [Boy]	3,056	2,953
111	Socio-Economic Profile	Child Marriage [Girl]	3,947	3,932
112	Socio-Economic Profile	Currently Working Women	3,321	3,296
113	Socio-Economic Profile	Female School Attendance	3,956	3,950
114	Socio-Economic Profile	High School Matriculation [Men]	3,321	3,299
115	Socio-Economic Profile	High School Matriculation [Women]	3,956	3,950
116	Socio-Economic Profile	Intimate Partner Violence [Against Women]	3,318	3,298
117	Socio-Economic Profile	Literacy [Men]	3,321	3,299
118	Socio-Economic Profile	Literacy [Women]	3,956	3,950
119	Socio-Economic Profile	Population below 15 Years	3,956	3,950
120	Socio-Economic Profile	Sexual Violence [Young Women]	3,228	3,140
121	Socio-Economic Profile	Teenage Pregnancy	3,937	3,921
122	Socio-Economic Profile	Tobacco Consumption [Women]	3,956	3,950
123	Socio-Economic Profile	Tobacco Use [Men]	3,321	3,950
124	Socio-Economic Profile	Women Participation in Household Decisions	3,321	3,298

Appendix 5: IPI indicators and related Government of India policies

Indicator ID	Indicator Name	GOI Policies (ABV)
1	Population with BPL cards	PMGKY, PMSYMDY, PMRPY, MGNREGA, PMKVY, AS, TPDS, AABY, Mudra, YUVA, Rozgar Mela, KGBV, PMAY-G, Svavlamban
2	Acute Respiratory Infection [All Children]	NTEP, RBSK, SANPS, RM-ARI
3	Acute Respiratory Infection [Children Getting Treatment - Facility]	NTEP, RBSK, SANPS
4	Diarrhoea [Received ORS]	RBSK, IDCF
5	Diarrhoea [Received Zinc]	RBSK, IDCF
6	Diarrhoea Treatment [Facility]	RBSK, IDCF
7	DPT Vaccination [3 Doses]	IMI
8	Full Vaccination	IMI, PPP
9	Full Vaccination [Vaccination Card]	IMI, PPP
10	Health Insurance [Any]	PMJAY, PMSBY, AABY
11	Hepatitis B Vaccine [3 Doses]	IMI
12	ICDS Benefits [Children]	ICDS, SN, NHM
13	Low Birth Weight	RBSK, SMA, POSHAN, NRC
14	Measles-Containing Vaccine [First Dose]	IMI
15	Measles-Containing Vaccine [Second Dose]	IMI
16	Polio Vaccination [3 Doses]	IMI, PPP
18	Rotavirus Vaccine [3 Doses]	IMI
19	Vitamin A Dose	NVAPP

Indicator ID	Indicator Name	GOI Policies (ABV)
20	Zero Dose [Child Immunization]	IMI, PPP, ICDS
21	Antenatal Care Visit [Four or More]	PMSMA, PMMVY, JSSK
22	Antenatal Care Visit [First Trimester]	PMSMA, PMMVY, JSSK
23	Birth Registration	RBDA
24	Birth Weight Recorded	ICDS, AS, SMA
25	Caesarean Section Delivery	JSY, JSSK, LQI
26	Caesarean Section in Private Sector	JSY, JSSK, LQI
27	Caesarean Section in Public Sector	JSY, JSSK, LQI
28	Childbirths in Public Facility	JSY, JSSK, LQI, PMMVY, PMSMA, MCC
29	Condom	NPP, MPV, HDC, NRHM
30	Family Planning [Any Methods by Women]	NPP, MPV, NRHM, FPIS, ECS, RPF-PPIUCD, Antara, ESB, HDC
31	Family Planning [Modern]	NPP, MPV, NRHM, FPIS, ECS, RPF-PPIUCD, Antara, ESB, HDC
32	Family Planning [Unmet Need]	NPP, MPV, RPF-PPIUCD, Antara, ESB, HDC, NRHM, FPIS, ECS
33	Family Planning Services Quality [Family Planning Counselling]	MPV
34	Female Sterilization	NPP, MPV, NRHM
35	Family Planning Services Quality [Side Effects Counselling]	MPV, FPIS, NRHM
36	Home Delivery by Skilled Health Personnel	BMBP, HBNC, SMB, PMMVY, ICDS-ANM
37	Injectables	NPP, MPV, Antara, NRHM
38	Institutional Childbirth	JSY, JSSK, LQI, PMMVY, PMSMA, MCC

Indicator ID	Indicator Name	GOI Policies (ABV)
39	Iron Folic Acid [100 Days or More]	AMB, POSHAN, NAP, WIFSP, RBSK, TBSY
40	Iron Folic Acid [180 Days or More]	AMB, POSHAN, NAP, WIFSP, RBSK, TBSY
41	IUD/PPIUD	NPP, MPV, RPF-PPIUCD, NRHM
42	Male Sterilization	MPV, NSV, FPIS, NRHM
43	Maternal Care Quality [Postpartum]	PMSMA, PMMVY, MCC, JSSK
44	Mother and Child Protection Card	None
45	Neonatal Tetanus	PMMVY, PMSMA, SMA, ICDS, JSSK, LQI
46	Pill	NPP, MPV, Chayya, Mala-N, NRHM
47	Postnatal Care [Mothers]	PMSMA, PMMVY, MCC, JSSK
49	Pregnancy Registration	JSSK, ICDS, MCC
50	Skilled Birth Attendance	JSY, JSSK, LQI, HBNC
51	Unmet Need for Spacing	NPP, MPV, ESB, NRHM, FPIS, ECS, RPF-PPIUCD, Antara, HDC
52	Diarrhoea [Children]	RBSK, IDCF
53	Elevated Blood Pressure or On Medication [Men]	NPCDCS, HIHC, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
54	Elevated Blood Pressure or On Medication [Women]	NPCDCS, HIHC, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
55	High Blood Sugar [Men]	NPCDCS, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
56	High Blood Sugar [Women]	NPCDCS, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
57	High or Very High Blood Sugar or On Medication [Men]	NPCDCS, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
58	High or Very High Blood Sugar or On Medication [Women]	NPCDCS, AMRIT, eAushidhi, IHIP, PMSSY, ABWC

Indicator ID	Indicator Name	GOI Policies (ABV)
59	Mildly Elevated Blood Pressure [Men]	NPCDCS, HIHC, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
60	Mildly Elevated Blood Pressure [Women]	NPCDCS, HIHC, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
61	Moderate or Severe Blood Pressure [Men]	NPCDCS, HIHC, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
62	Moderate or Severe Blood Pressure [Women]	NPCDCS, HIHC, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
63	Probability of Dying before Five Years	IMNCI, NSSK, NCC, NSU, POSHAN, NHM, HBNC
64	Probability of Dying before One Year	IMNCI, NSSK, NCC, NSU, POSHAN, NHM, HBNC
65	Probability of Dying within 28 Days	IMNCI, NSSK, NCC, NSU, POSHAN, NHM, HBNC
66	Risky Waist-to-Hip Ratio [Women]	IHIP, PMSSY, NPCDCS
67	Very High Blood Sugar [Men]	NPCDCS, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
68	Very High Blood Sugar [Women]	NPCDCS, AMRIT, eAushidhi, IHIP, PMSSY, ABWC
69	Anaemia [Any - Adolescent Women]	AMB, NAP, WIFSP, RKSK, TBSY
70	Anaemia [Any - All Women]	AMB, NAP, WIFSP
71	Anaemia [Any - Pregnant Women]	AMB, NAP, WIFSP, PMSMA, JSSK
72	Child Anaemia [Any]	AMB, POSHAN, NAP, WIFSP, RBSK, TBSY
73	Child Stunting	POSHAN, ICDS, AK, NRC, RBSK, BPKK
74	Child Underweight	POSHAN, ICDS, AK, NRC, RBSK, BPKK
75	Child Wasting	POSHAN, ICDS, AK, NRC, RBSK, BPKK
76	Mild Anaemia [Children]	AMB, POSHAN, NAP, WIFSP, TBSY
77	Mild Anaemia [Women]	AMB, NAP, WIFSP

Indicator ID	Indicator Name	GOI Policies (ABV)
78	Moderate Anaemia [Children]	AMB, POSHAN, NAP, WIFSP, TBSY
79	Moderate Anaemia [Women]	AMB, NAP, WIFSP
80	Overweight Children	POSHAN
81	Overweight or Obese [Women]	IHIP, PMSSY, NPCDCS
82	Severe Anaemia [Children]	AMB, POSHAN, NAP, WIFSP, RBSK, TBSY
83	Severe Anaemia [Women]	AMB, NAP, WIFSP
84	Severe Stunting [Children]	POSHAN, ICDS, AK, NRC, RBSK, BPKK
85	Severe Underweight [Children]	POSHAN, ICDS, AK, NRC, RBSK, BPKK
86	Severe Wasting [Children]	POSHAN, ICDS, AK, NRC, RBSK, BPKK
87	Underweight [Women]	AK, NRC, BPKK, NFSA, TPDS, POSHAN
88	Adequate Diet [Breastfed Children]	MAA, LMC, NFSA, POSHAN
89	Adequate Diet [Non-Breastfed Children]	NFSA, TPDS, POSHAN, WBNP, AK, RKVY, PMMVY, AAY
90	Adequate Diet [Total]	NFSA, TPDS, POSHAN, WBNP, AK, RKVY, PMMVY, AAY
91	Early Breastfeeding Initiation	MAA, LMC, JSSK
92	ICDS Supplementary Nutrition	NFSA, SN, ICDS
93	Iodized Salt Intake	NIDDCP, Fortification
94	Exclusive Breastfeeding [Under 6 Months]	MAA, LMC
95	Receiving Solid/Semi-solid Food [6-8 Months]	POSHAN, ICDS
96	Zero Food [Children]	NFSA, TPDS, POSHAN, SNP, RKVY, PMMVY, AK

Indicator ID	Indicator Name	GOI Policies (ABV)
97	Access to Electricity	Saubhagya, DDUGJY, KUSUM, Ujjwala-DISCOM, IPDS, SCM, JNNURM, , SCM, WISTS, NSM, PMAY-U, JNNURM, AMRUT, MPLADS
98	Clean Cooking Fuel	PMUY
99	Death Registration	RBDA, MDSR
100	Handwashing Facilities	SBM, JNNURM
101	Hygienic Protection Methods [Menstruation]	SPMH, AFHC, AHS, PEP, RKSK, SBM-G
102	Improved Sanitation Facility	SBM
103	Improved Source of Drinking Water	JJM, ABY, Amrit Sarovar, Jaldoot, PMAY-G, SBM-G
104	Internet Usage [Women]	NBM
105	Private Latrine	SBM
106	Safe Stool Disposal	SBM
107	Women with Personal Mobile Phone	None
108	Alcohol Consumption [Men]	IRCA, NPCDCS
109	Alcohol Consumption [Women]	IRCA, NPCDCS
110	Child Marriage [Boy]	PCM
111	Child Marriage [Girl]	PCM
112	Currently Working Women	PSHWP, MBA, ERA, MWA, ABRY, PMKVY
113	Female School Attendance	RTE, NEP, SSA, KGBV, DGAG, NSIG, SVPSG, BBBP, SWAYAM
114	High School Matriculation [Men]	RUSA, RTE, ATL, RAA, SWAYAM, NEP
115	High School Matriculation [Women]	RUSA, RTE, SSA, KGBV, NSIG, SVPSG, BBBP, ATL, RAA,

Indicator ID	Indicator Name	GOI Policies (ABV)
		DIKSHA, SWAYAM, NEP
116	Intimate Partner Violence [Against Women]	PWDVA, 48A, DPA
117	Literacy [Men]	NILP
118	Literacy [Women]	NILP
119	Population below 15 Years	RKSK, RBSK
120	Sexual Violence [Young Women]	POCSO
121	Teenage Pregnancy	POCSO
122	Tobacco Consumption [Women]	NTCP, COTPA, PEC
123	Tobacco Use [Men]	NTCP, COTPA, PEC
124	Women Participation in Household Decisions	MS, BBBP, WHS, SNI, NSP, Nirbhaya, MSK

Government of India Programs 48A: Section 498A of IPC; AABY: Aam Admi Bima Yojana; 48A: Anna Antyodaya Yojana; ABWC: Ayushman Bharat Health and Wellness Centres; ABY: Atal Bhujal Yojana; AFHC: Adolescent Friendly Health Clinics; AHS: Adolescent Health Strategy; AK: Aahaar Kranti; AMB: Anemia Mukt Bharat; AMRIT: Affordable Medicines and Reliable Implants for Treatment; Amrit Sarovar: Mission Amrit Sarovar; AMRUT: Atal Mission for Rejuvenation and Urban Transformation; Antara: Antara Programme; AS: Aanganwadi Services; ATL: Atal Tinkering Labs; BBBP: Beti Bachao Beti Padhao Yojana; BMBP: Birth Micro planning and Birth Preparedness by Skilled birth attendance (SBA)trained; ANMs; BPKK: Bhartiya Poshan Krishi Kosh; Chayya: Mala-N: Chhaya and Mala-N tablets; COTPA: The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003; DDUGJY: Deendayal Upadhyaya Gram Jyoti Yojana; DGAG: Digital Gender Atlas for Advancing Girls Education; DIKSHA: Digital Infrastructure for Knowledge Sharing; DPA: Dowry Prohibition Act; eAushidhi: Electronic Aushidhi; ECS: Enhanced Compensation Scheme; ERA: Equal Remuneration Act; ESB: Ensuring Spacing at Birth incentive to ASHA; Fortification: Food Fortification; FPIS: Family Planning Indemnity Scheme; GEC: Green Energy Corridors; HBNC: Home-Based Newborn Care; HDC: Home Delivery of Contraceptives Scheme; HIHC: High Impact Hypertension Control Initiative; ICDS: Integrated Child Development Services; ICDS-ANM: Integrated Child Development Services (Auxiliary Nurse Midwife); IDCF: Intensified Diarrhoea Control Fortnight; IHIP: Integrated Health Information Platform; IMI: Intensified Mission Indradhanush; IMNCI: Integrated Management of Neonatal and Childhood Illnesses; IPDS: Integrated Power Development Scheme; IRCA: Integrated Rehabilitation Centre for Addicts; Jaldoot: Jaldoot App; JJM: Jal Jeevan Mission; JNNURM: Jawaharlal Nehru National Urban Renewal Mission; JSSK: Janani Shishu Suraksha Karyakram; JSY: Janani Suraksha Yojana; KGBV: Kasturba Gandhi Balika Vidyalaya; KUSUM: Pradhan Mantri Kisan Urja Surakshaevam Utthan Mahabhiyan; LMC: Lactation Management Centers; LQI: Labour Room Quality Improvement Initiative; MAA: Mothers Absolute Affection; MBA: Maternity Benefits Act; MCC: Mother and Child card; MDSR: Maternal Death Surveillance and Response; MGNREGA: Mahatma Gandhi National Rural Employment Guarantee Act; MPLADS: Member of Parliament Local Area Development Scheme; MPV: Mission Parivar Vikas; MTP: Medical Termination of Pregnancy Act; Mudra: Pradhan Mantri Mudra Yojana; MWA: Minimum Wages Act; NAP: National Nutritional Anaemia Prophylaxis Programme; NBM: National Biomonitoring Program; NEP: National Education Policy; NFSA: National Food Security Act; NHM: National Health Mission; NIDDCP: National Iodine Deficiency Disorders Control Programme; NILP: New India Literacy Program; NPCDCS: National Programme for Prevention and Control of Cancer, Diabetes , Cardiovascular Disease and Stroke; NPP: National Population Policy; NRC: Nutrition Rehabilitation Centers; NRHM: National Rural Health Mission; NSIG: National Scheme for Incentives to Girls; NSM: National Solar Mission; NSSK: National Health Mission; NSU: Newborn Care Corners; NSV: No Scalpel Vasectomy; NTCP: National Tobacco Control Program; NTEP: National Tuberculosis Elimination Programme; NVAPP: National Vitamin A Prophylaxis Programme; PCM: The Prohibition of Child Marriage (Amendment), 2006 and 2022; PEC: The Prohibition of Electronic Cigarettes (Production, Manufacture ,Import ,Export ,Transport ,Sale ,Distribution ,Storage and Advertisement)Act ,2019; PEP: Peer Educator Programme; PMAY-G: Pradhan Mantri Awaas Yojana (Grameen); PMAY-U: Pradhan Mantri Awas Yojana—Housing for All (Urban); PMGKY: Pradhan Mantri Garib Kalyan Yojana; PMJAY: Pradhan Mantri Jan Arogya Yojana; PMMVY: Pradhan Mantri Matru Vandana Yojana; PMRPA: Pradhan Mantri Rojgar Protsahan Yojana; PMRPY: Pradhan Mantri Suraksha Bima Yojana; PMSBY: Pradhan Mantri Surakshit Matritva Abhiyan; PMSSY: Pradhan Mantri Swasthya Suraksha Yojana; PMSYMDY: Pradhan Mantri Shram Yogi Maan-Dhan Yojana; PMUY: Pradhan Mantri Ujjwala Yojana; POCSO: Protection of Children from Sexual

Offences Act; POSHAN: Prime Minister's Overarching Scheme for Holistic Nutrition; PPP: Pulse Polio Programme; PSHWP: The Prohibition of Sexual Harassment of Women at Workplace Act; PWDVA: Protection of Women against Domestic Violence Act; RAA: Rashtriya Avishkar Abhiyan; RBDA: Registration of Births and Deaths Act; RBSK: Rashtriya Bal Swasthya Karyakram; RM-ARI: Reduction in morbidity and mortality due to Acute Respiratory Infections; Rozgar Mela: Employment Fair; RPF-PPIUCD: Revitalizing Post partum Family Planning including PPIUCD; RTE: Right of Children to Free and Compulsory Education; RUSA: Rashtriya Uchchatar Shiksha Abhiyan; SA: Saksham Anganwadi; SANPS: Social Awareness and Actions to Neutralize Pneumonia Successfully; Saubhagya: Pradhan Mantri Sahaj Bijli Har Ghar Yojana; SBM: Swachh Bharat Mission; SBM-G: Swachh Bharat Mission (Grameen); SCM: Smart Cities Mission; SMA: Surakshit Matritva Aashwasan; SMB: Safe Motherhood Booklets; SN: Supplementary Nutrition Programme; SNP: Special Nutrition Program; SPMH: Scheme for Promotion of Menstrual Hygiene among Adolescent Girls; SSA: Samagra Shiksha Abhiyan; Svavlamban: Svavlamban Scheme; SVPSG: Swami Vivekananda Policy for Single Girl Child; SWAYAM: Study Webs of Active-Learning for Young Aspiring Minds; TBSY: Thalassemia Bal Sewa Yojna; TPDS: Targeted Public Distribution System; Ujjwala-DISCOM: Ujjwala DISCOM Assurance Yojana; WBNP: Wheat Based Nutrition Program; WHS: Women Helpline Scheme; WIFSP: Weekly Iron Folic Acid Supplementation Programme; WISTS: Waiver of Inter State Transmission System Charges; YUVA: PM-YUVA Yojana;

Appendix 6: List of 29 denominators

Denominators	Name
1	6-23 months non-breastfeeding
2	15-49 years mothers with most recent birth
3	0-59 most recent pregnancy registered
4	18-49 years ever married females
5	0 to 59 months home births
6	15-49 years pregnant female
7	15-49 years currently married
8	6-23 months breastfeeding children
9	0-59 births in public facilities
10	0-59 births in private facilities
11	15-49 years nonpregnant female
12	9-35 months children
13	6-59 months children
14	6-8 months children
15	6-23 months all children
16	12-23 months children
17	0-36 months most recent birth
18	0-59 months children
19	0-6 months living with mother
20	15-19 years female
21	15-24 years female
22	15-49 years female
23	15-49 years male
24	18-29 years female
25	20-24 years female
26	24-35 months children
27	25-29 years male
28	6 years and above female
29	All population

Appendix 7: List of 112 Aspirational Districts

Sr. No.	State Name	District Name
1	Andhra Pradesh	Alluri Sitharamaraju
2	Andhra Pradesh	Parvathipuram Manyam
3	Andhra Pradesh	Y.S.R. Kadapa
4	Arunachal Pradesh	Namsai
5	Assam	Baksa
6	Assam	Barpeta
7	Assam	Darrang
8	Assam	Dhubri
9	Assam	Goalpara
10	Assam	Hailakandi
11	Assam	Udalguri
12	Bihar	Araria
13	Bihar	Aurangabad
14	Bihar	Banka
15	Bihar	Begusarai
16	Bihar	Gaya
17	Bihar	Jamui
18	Bihar	Katihar
19	Bihar	Khagaria
20	Bihar	Muzaffarpur
21	Bihar	Nawada
22	Bihar	Purnea
23	Bihar	Sheikhpura
24	Bihar	Sitamarhi
25	Chhattisgarh	Bastar
26	Chhattisgarh	Bijapur
27	Chhattisgarh	Dantewada
28	Chhattisgarh	Kanker
29	Chhattisgarh	Kondagaon
30	Chhattisgarh	Korba
31	Chhattisgarh	Mahasamund
32	Chhattisgarh	Narayanpur
33	Chhattisgarh	Rajnandgaon
34	Chhattisgarh	Sukma
35	Gujarat	Dahod
36	Gujarat	Narmada

Sr. No.	State Name	District Name
37	Haryana	Mewat
38	Himachal Pradesh	Chamba
39	Jammu & Kashmir	Baramula
40	Jammu & Kashmir	Kupwara
41	Jharkhand	Bokaro
42	Jharkhand	Chatra
43	Jharkhand	Dumka
44	Jharkhand	Garhwa
45	Jharkhand	Giridih
46	Jharkhand	Godda
47	Jharkhand	Gumla
48	Jharkhand	Hazaribag
49	Jharkhand	Khunti
50	Jharkhand	Latehar
51	Jharkhand	Lohardaga
52	Jharkhand	Pakur
53	Jharkhand	Palamu
54	Jharkhand	Pashchimi Singhbhum
55	Jharkhand	Purbi Singhbhum
56	Jharkhand	Ramgarh
57	Jharkhand	Ranchi
58	Jharkhand	Sahibganj
59	Jharkhand	Simdega
60	Karnataka	Raichur
61	Karnataka	Yadgir
62	Kerala	Wayanad
63	Madhya Pradesh	Barwani
64	Madhya Pradesh	Chhatarpur
65	Madhya Pradesh	Damoh
66	Madhya Pradesh	Guna
67	Madhya Pradesh	Khandwa
68	Madhya Pradesh	Rajgarh
69	Madhya Pradesh	Singrauli
70	Madhya Pradesh	Vidisha
71	Maharashtra	Gadchiroli
72	Maharashtra	Nandurbar
73	Maharashtra	Osmanabad
74	Maharashtra	Washim
75	Manipur	Chandel
76	Meghalaya	Ribhoi

Sr. No.	State Name	District Name
77	Mizoram	Mamit
78	Nagaland	Kiphire
79	Odisha	Balangir
80	Odisha	Dhenkanal
81	Odisha	Gajapati
82	Odisha	Kalahandi
83	Odisha	Kandhamal
84	Odisha	Koraput
85	Odisha	Malkangiri
86	Odisha	Nabarangapur
87	Odisha	Nuapada
88	Odisha	Rayagada
89	Punjab	Ferozepur
90	Punjab	Moga
91	Rajasthan	Baran
92	Rajasthan	Dholpur
93	Rajasthan	Jaisalmer
94	Rajasthan	Karauli
95	Rajasthan	Sirohi
96	Sikkim	Soreng
97	Tamil Nadu	Ramanathapuram
98	Tamil Nadu	Virudhunagar
99	Telangana	Asifabad
100	Telangana	Bhadradri-Kothagudem
101	Telangana	Bhupalpally
102	Tripura	Dhalai
103	Uttar Pradesh	Bahraich
104	Uttar Pradesh	Balrampur
105	Uttar Pradesh	Chandauli
106	Uttar Pradesh	Chitrakoot
107	Uttar Pradesh	Fatehpur
108	Uttar Pradesh	Shravasti
109	Uttar Pradesh	Siddharthnagar
110	Uttar Pradesh	Sonbhadra
111	Uttarakhand	Haridwar
112	Uttarakhand	Udham Singh Nagar

Appendix 8: Details of NFHS datasets and versions used for analysis.

Indicator ID	Indicators	Datasets	NFHS 4 Version	NFHS 5 Version
1	Population with BPL cards	PR	IAPR74DT	IAPR7EDT
2	Acute Respiratory Infection [All Children]	KR	IAKR74DT	IAKR7EDT
3	Acute Respiratory Infection [Children Getting Treatment - Facility]	KR	IAKR74DT	IAKR7EDT
4	Diarrhoea [Received ORS]	KR	IAKR74DT	IAKR7EDT
5	Diarrhoea [Received Zinc]	KR	IAKR74DT	IAKR7EDT
6	Diarrhoea Treatment [Facility]	KR	IAKR74DT	IAKR7EDT
7	DPT Vaccination [3 Doses]	KR	IAKR74DT	IAKR7EDT
8	Full Vaccination	KR	IAKR74DT	IAKR7EDT
9	Full Vaccination [Vaccination Card]	KR	IAKR74DT	IAKR7EDT
10	Health Insurance [Any]	PR	IAPR74DT	IAPR7EDT
11	Hepatitis B Vaccine [3 Doses]	KR	IAKR74DT	IAKR7EDT
12	ICDS Benefits [Children]	KR	IAKR74DT	IAKR7EDT
13	Low Birth Weight	KR	IAKR74DT	IAKR7EDT
14	Measles-Containing Vaccine [First Dose]	KR	IAKR74DT	IAKR7EDT
15	Measles-Containing Vaccine [Second Dose]	KR	IAKR74DT	IAKR7EDT
16	Polio Vaccination [3 Doses]	KR	IAKR74DT	IAKR7EDT
18	Rotavirus Vaccine [3 Doses]	KR	IAKR74DT	IAKR7EDT
19	Vitamin A Dose	KR	IAKR74DT	IAKR7EDT
20	Zero Dose [Child Immunization]	KR	IAKR74DT	IAKR7EDT
21	Antenatal Care Visit [Four or More]	KR	IAKR74DT	IAKR7EDT
22	Antenatal Care Visit [First Trimester]	KR	IAKR74DT	IAKR7EDT
23	Birth Registration	KR	IAKR74DT	IAKR7EDT
24	Birth Weight Recorded	KR	IAKR74DT	IAKR7EDT
25	Caesarean Section Delivery	IR	IAIR74DT	IAIR7EDT
26	Caesarean Section in Private Sector	IR	IAIR74DT	IAIR7EDT
27	Caesarean Section in Public Sector	IR	IAIR74DT	IAIR7EDT
28	Childbirths In Public Facility	IR	IAIR74DT	IAIR7EDT
29	Condom	IR	IAIR74DT	IAIR7EDT
30	Family Planning [Any Methods by Women]	IR	IAIR74DT	IAIR7EDT
31	Family Planning [Modern]	IR	IAIR74DT	IAIR7EDT
32	Family Planning [Unmet Need]	IR	IAIR74DT	IAIR7EDT
33	Family Planning Services Quality [Family Planning Counselling]	IR	IAIR74DT	IAIR7EDT
35	Female Sterilization	IR	IAIR74DT	IAIR7EDT
34	Family Planning Services Quality [Side Effects Counselling]	IR	IAIR74DT	IAIR7EDT

Indicator ID	Indicators	Datasets	NFHS 4 Version	NFHS 5 Version
36	Home Delivery By Skilled Health Personnel	IR	IAIR74DT	IAIR7EDT
37	Injectables	IR	IAIR74DT	IAIR7EDT
38	Institutional Childbirth	IR	IAIR74DT	IAIR7EDT
39	Iron Folic Acid [100 Days or More]	IR	IAIR74DT	IAIR7EDT
40	Iron Folic Acid [180 Days or More]	IR	IAIR74DT	IAIR7EDT
41	IUD/PPIUD	IR	IAIR74DT	IAIR7EDT
42	Male Sterilization	MR	IAMR74DT	IAMR7EDT
43	Maternal Care Quality [Postpartum]	IR	IAIR74DT	IAIR7EDT
44	Mother and Child Protection Card	IR	IAIR74DT	IAIR7EDT
45	Neonatal Tetanus	IR	IAIR74DT	IAIR7EDT
46	Pill	IR	IAIR74DT	IAIR7EDT
47	Postnatal Care [Mothers]	IR	IAIR74DT	IAIR7EDT
49	Pregnancy Registration	IR	IAIR74DT	IAIR7EDT
50	Skilled Birth Attendance	IR	IAIR74DT	IAIR7EDT
51	Unmet Need For Spacing	IR	IAIR74DT	IAIR7EDT
52	Diarrhoea [Children]	KR	IAKR74DT	IAKR7EDT
53	Elevated Blood Pressure or On Medication [Men]	MR	IAMR74DT	IAMR7EDT
54	Elevated Blood Pressure or On Medication [Women]	IR	IAIR74DT	IAIR7EDT
55	High Blood Sugar [Men]	MR	IAMR74DT	IAMR7EDT
56	High Blood Sugar [Women]	IR	IAIR74DT	IAIR7EDT
57	High or Very High Blood Sugar or Taking Medicine [Men]	MR	IAMR74DT	IAMR7EDT
58	High or Very High Blood Sugar or Taking Medicine [Women]	IR	IAIR74DT	IAIR7EDT
59	Mildly Elevated Blood Pressure [Men]	MR	IAMR74DT	IAMR7EDT
60	Mildly Elevated Blood Pressure [Women]	IR	IAIR74DT	IAIR7EDT
61	Moderate or Severe Blood Pressure [Men]	MR	IAMR74DT	IAMR7EDT
62	Moderate or Severe Blood Pressure [Women]	IR	IAIR74DT	IAIR7EDT
63	Probability of Dying Before Five Years	BR	IABR74DT	IABR7EDT
64	Probability of Dying Before One Year	BR	IABR74DT	IABR7EDT
65	Probability of Dying Within 28 Days	BR	IABR74DT	IABR7EDT
66	Risky Waist-to-Hip Ratio [Women]	IR	IAIR74DT	IAIR7EDT
67	Very High Blood Sugar [Men]	MR	IAMR74DT	IAMR7EDT
68	Very High Blood Sugar [Women]	IR	IAIR74DT	IAIR7EDT
69	Anaemia [Any - Adolescent Women]	IR	IAIR74DT	IAIR7EDT
70	Anaemia [Any - All Women]	IR	IAIR74DT	IAIR7EDT
71	Anaemia [Any - Pregnant Women]	IR	IAIR74DT	IAIR7EDT
72	Child Anaemia [Any]	KR	IAKR74DT	IAKR7EDT

Indicator ID	Indicators	Datasets	NFHS 4 Version	NFHS 5 Version
73	Child Stunting	KR	IAKR74DT	IAKR7EDT
74	Child Underweight	KR	IAKR74DT	IAKR7EDT
75	Child Wasting	KR	IAKR74DT	IAKR7EDT
76	Mild Anaemia [Children]	KR	IAKR74DT	IAKR7EDT
77	Mild Anaemia [Women]	IR	IAIR74DT	IAIR7EDT
78	Moderate Anaemia [Children]	KR	IAKR74DT	IAKR7EDT
79	Moderate Anaemia [Women]	IR	IAIR74DT	IAIR7EDT
80	Overweight Children	KR	IAKR74DT	IAKR7EDT
81	Overweight or Obese [Women]	IR	IAIR74DT	IAIR7EDT
82	Severe Anaemia [Children]	KR	IAKR74DT	IAKR7EDT
83	Severe Anaemia [Women]	IR	IAIR74DT	IAIR7EDT
84	Severe Stunting [Children]	KR	IAKR74DT	IAKR7EDT
85	Severe Underweight [Children]	KR	IAKR74DT	IAKR7EDT
86	Severe Wasting [Children]	KR	IAKR74DT	IAKR7EDT
87	Underweight [Women]	IR	IAIR74DT	IAIR7EDT
88	Adequate Diet [Breastfed Children]	KR	IAKR74DT	IAKR7EDT
89	Adequate Diet [Non-Breastfed Children]	KR	IAKR74DT	IAKR7EDT
90	Adequate Diet [Total]	KR	IAKR74DT	IAKR7EDT
91	Early Breastfeeding Initiation	KR	IAKR74DT	IAKR7EDT
92	ICDS Supplementary Nutrition	KR	IAKR74DT	IAKR7EDT
93	Iodized Salt Intake	PR	IAPR74DT	IAPR7EDT
94	Exclusive Breastfeeding [Within 6 Months]	KR	IAKR74DT	IAKR7EDT
95	Receiving Solid/Semi-Solid Food [6-8 months]	KR	IAKR74DT	IAKR7EDT
96	Zero Food [Children]	KR	IAKR74DT	IAKR7EDT
97	Access to Electricity	PR	IAPR74DT	IAPR7EDT
98	Clean Cooking Fuel	PR	IAPR74DT	IAPR7EDT
99	Death Registration	PR	IAPR74DT	IAPR7EDT
100	Handwashing Facilities	PR	IAPR74DT	IAPR7EDT
101	Hygienic Protection Methods [Menstruation]	IR	IAIR74DT	IAIR7EDT
102	Improved Sanitation Facility	PR	IAPR74DT	IAPR7EDT
103	Improved Source of Drinking Water	PR	IAPR74DT	IAPR7EDT
104	Internet Usage [Women]	IR	IAIR74DT	IAIR7EDT
105	Private Latrine	PR	IAPR74DT	IAPR7EDT
106	Safe Stool Disposal	PR	IAPR74DT	IAPR7EDT
107	Women with Personal Mobile Phone	IR	IAIR74DT	IAIR7EDT
108	Alcohol Consumption [Men]	MR	IAMR74DT	IAMR7EDT
109	Alcohol Consumption [Women]	IR	IAIR74DT	IAIR7EDT
110	Child Marriage [Boy]	MR	IAMR74DT	IAMR7EDT

Indicator ID	Indicators	Datasets	NFHS 4 Version	NFHS 5 Version
111	Child Marriage [Girl]	IR	IAIR74DT	IAIR7EDT
112	Currently Working Women	IR	IAIR74DT	IAIR7EDT
113	Female School Attendance	IR	IAIR74DT	IAIR7EDT
114	High School Matriculation [Men]	MR	IAMR74DT	IAMR7EDT
115	High School Matriculation [Women]	IR	IAIR74DT	IAIR7EDT
116	Intimate Partner Violence [Against Women]	IR	IAIR74DT	IAIR7EDT
117	Literacy [Men]	MR	IAMR74DT	IAMR7EDT
118	Literacy [Women]	IR	IAIR74DT	IAIR7EDT
119	Population Below 15 years	PR	IAPR74DT	IAPR7EDT
120	Sexual Violence [Young Women]	IR	IAIR74DT	IAIR7EDT
121	Teenage Pregnancy	IR	IAIR74DT	IAIR7EDT
122	Tobacco Consumption [Women]	IR	IAIR74DT	IAIR7EDT
123	Tobacco Use [Men]	MR	IAMR74DT	IAMR7EDT
124	Women Participation in Household Decisions	IR	IAIR74DT	IAIR7EDT