HEALTH DATA: INDICATORS AND ACCESS

William Joe
Assistant Professor
Institute of Economic Growth, Delhi

Centre for the Advanced Study of India (CASI) Seminar Series 2023
July 12, 2023
Survey Data and Service Statistics

• Health indicators (outcomes and processes)

  • Survey data
    • Survey design is concerned with the key objective (indicator of interest)
    • Sampling is guided by the level at which the estimates are mandated (district or state)
    • Survey data facilitates research on associations and causations with various determinants

  • Service statistics (Program MIS)
    • The indicator framework (systems approach) should facilitate holistic understanding
    • Real time information to facilitate timely reviews and corrective actions
    • Data producers should use it at all levels for monitoring and evaluation

• Scientific validity of (estimated) indicators is a prerequisite
  • Survey data estimates are often robust and provides understanding of level of the indicator
  • Service statistics are still evolving but informs about the direction of trends (progress)
Indicators in a systems approach

THE WHO HEALTH SYSTEM FRAMEWORK

SYSTEM BUILDING BLOCKS

SERVICE DELIVERY
HEALTH WORKFORCE
INFORMATION
MEDICAL PRODUCTS, VACCINES & TECHNOLOGIES
FINANCING
LEADERSHIP / GOVERNANCE

ACCESS
COVERAGE
QUALITY
SAFETY

OVERALL GOALS / OUTCOMES

IMPROVED HEALTH (LEVEL AND EQUITY)
RESPONSIVENESS
SOCIAL AND FINANCIAL RISK PROTECTION
IMPROVED EFFICIENCY
Data sources for systems approach

• Financing
  • Health budgets (MoHFW budget, RBI, public finance)
  • National health accounts reports
  • Program implementation plan (National Health Mission)

• Service delivery
  • Health Management Information System
  • Drugs and Vaccine Distribution Management System

• Infrastructure and human resources
  • Rural Health Statistics
  • National Health Profile
  • Health Management Information System

• Goals and outcomes
  • Sample Registration System
  • National Sample Survey (Social Consumption: Health; EUS; Enterprises)
  • Global Adult Tobacco Survey (GATS)
  • Longitudinal Aging Study of India (LASI)
  • District Level Household Survey (DLHS) / Annual Health Survey (AHS)
  • National Family Health Survey (NFHS)
Data to Statistic

• Producing estimates and indicators from survey and service statistics
  • Reports and publications of concerned government departments
  • Survey reports of the nodal agencies
  • Publications by researchers

• Standardization of data as per indicator definitions

• Statistics as per national and international indicator frameworks

• From an era that focused on vital statistics, the MDGs and SDGs have transformed indicator frameworks

Fundamental principles of official statistics

1. Relevance, impartiality and equal access
2. Professional standards, scientific principles, and professional ethics
3. Accountability and transparency
4. Prevention of misuse
5. Sources of official statistics
6. Confidentiality
7. Legislation
8. National coordination
9. Use of international standards
10. International cooperation

1. Relevance, impartiality and equal access

2. Professional standards, scientific principles, and professional ethics

3. Accountability and transparency

4. Prevention of misuse

5. Sources of official statistics

6. Confidentiality

7. Legislation

8. National coordination

9. Use of international standards

10. International cooperation
Outline

- **Focus**
  - National Health Profile (CBHI, MoHFW)
  - Cause of Death (Sample Registration System, MoHA)
  - Mission Antyodaya (MoRD)
  - Health Management Information System (MoHFW)
  - National Family Health Survey (IIPS, MoHFW)
  - Consumer Pyramid Household Survey (CMIE)

- Digital Platforms (UWIN, HMIS, RCH, IHIP, DVDMS, POSHAN Tracker, ABDM); Disease Registries

- **Surveys for nutrition indicators**
  - National Family Health Surveys (NFHS)
  - District Level Household Surveys (DLHS)
  - Annual Health Surveys (AHS)
  - National Sample Surveys (NSS)
  - Comprehensive National Nutrition Survey (CNNS)
  - National Nutrition Monitoring Bureau (NNMB) Surveys
  - Longitudinal Aging Study of India (LASI)
  - India Human Development Surveys (IHDS)
  - Young Lives India
National Health Profile

• Indicators
  • Demographic Indicators
  • Socio-Economic Indicators
  • Health Status Indicators
  • Health Finance Indicators
  • Human Resource for Health
  • Health Infrastructure

• Data source
  • The data in this publication is collected from various source agencies. CBHI relies on these source agencies to compile the data for National Health Profile namely (a) Central Ministries/Departments (b) Health Authorities of all States/UTs (c) Autonomous Organizations & other Agencies which have been indicated at the bottom of the data tables.

• Background and availability
  • MoHFW and CBHI (Nodal)
  • 2011 to 2021 (except 2014)
  • (https://cbhidghs.mohfw.gov.in/index1.php?lang=1&level=1&sublinkid=75&lid=1135)
National Health Profile

• Demographic indicators (Population Statistics and Vital Statistics)

• Population, population projections, fertility rates, infant mortality rate, maternal mortality ratio, crude birth and death rates.

• Sources used for compilation of population statistics
  • Census of India, Registrar General of India
    • Report of the Technical Group on Population Projections, NCP
  • Indirect methods
    • SRS Statistical Report and SRS Bulletin, Registrar General of India
  • Direct methods
    • Civil Registration System (CRS) and Medical Certification of Cause of Death (MCCD
National Health Profile

• Socioeconomic indicators (Education, Gender, Poverty & Employment)

• Literacy rate, age at marriage, PCNSDP, PC cereals / pulses, employment exchange statistics, poverty (2011-12), housing, water and sanitation

• Sources used for compilation of socioeconomic indicators
  • Census of India, Registrar General of India
  • Unified District Information System for Education Plus (UDISE+)
  • NITI Aayog, MoSPI, MoA, MoDWS
  • State governments (employment exchange, directorate of economics and statistics)
National Health Profile

• Health status indicators (Communicable & Non-Communicable Disease)
  • Communicable diseases
    • Cases and deaths: malaria, chikungunya, kala-azar, acute encephalitis syndrome, Japanese encephalitis, dengue, cholera, acute diarrhoeal diseases, enteric fever, acute respiratory infection, tetanus neonatal, whooping cough, diphtheria, measles, viral hepatitis, rabies, Pneumonia, meningococcal meningitis, gonococcal infection, syphilis, HIV (AIDS, ART), leprosy, swine flue, chicken pox
  • Non-communicable diseases
    • Cancer, diabetes, cardiovascular diseases, stroke, eye, accident, suicides, unnatural deaths, disabled persons, snake bite, dental and skeletal fluorosis, goitre
  • Maternal and child health
    • Maternity care, delivery care, family planning, child feeding practices, child immunization, anemia, foeticide and infanticide
• Sources used for compilation of socioeconomic indicators
  • MoHFW Divisions
  • Directorate of Health Services of State
  • NCRB, RGI and NFHS
National Health Profile

• Health finance indicators (public health expenditure)
  • Public expenditure on health (states), NHM expenditure, hospitalization cases by major source of finance, coverage of scheme of health expenditure support, medical expenditure for treatment, OOPE, ESIC, RSBY, PM-JAY, health insurance, central allocation patterns, scheme-wise allocations

• Sources used for compilation of socioeconomic indicators
  • MoHFW (Budget Divisions)
  • National Health Authority, ESIC,
  • National Sample Survey (Health)
  • National Health Accounts Cell
National Health Profile

• Human resource for health (medical, nursing and paramedical personnel)
  • Professional Councils in India
    • Registered doctors, dentists, AYUSH practitioners, nurses, pharmacists
    • Medical courses and seats
  • HR for health in service sector
    • HR in rural areas (PHC, SC)
    • HR in urban areas (UPHC, UCHC, SDH, DH, MC)
    • HR in railways, ESIC hospitals,
  • Sources used for compilation of socioeconomic indicators
    • Medical Council of India
    • Dental Council of India
    • Indian Nursing Council & Pharmacy Council of India
    • Directorate of Health Services (States)
    • ESIC, Ministry of Railways, Ministry of AYUSH
    • Rural Health Statistics (MoHFW)
National Health Profile

• Health infrastructure indicators (education and service infrastructure)
  
  • Education infrastructure
    • Medical colleges, PG seats, AIIMS, AYUSH colleges, Admissions (medical, dental, nursing, pharmacy)
  
  • Service infrastructure
    • SC, PHC, CHC functioning, SDH, DH, MMU, MC, Hospital beds, blood banks, eye banks, mental health hospitals, CGHS facilities, vaccine production
    • Clinical establishments registered

• Sources used for compilation of socioeconomic indicators
  
  • Medical Council of India
  • Dental Council of India
  • Indian Nursing Council & Pharmacy Council of India
  • Directorate of Health Services (States)
  • ESIC, Ministry of Railways, Ministry of AYUSH
  • Annual Reports; Rural Health Statistics (MoHFW)
Cause of death statistics (SRS, RGI)

• Sample Registration System (Indirect)
  • Survey of causes of death in rural areas merged with SRS in 1999
  • Verbal autopsy to ascertain underlying cause of death started from 2001-03 onwards
  • Use of WHO ICD 10th Revision
  • Medical evaluation by two independent trained physicians with technical support from AIIMS
  • Joint exercise of centre and state government

• Objective: To build up statistics on most probable causes of death using lay diagnosis reporting (post death verbal autopsy) method

• https://censusindia.gov.in/census.website/data/SRSCOD
Cause of death statistics (Indirect method, SRS)

- Data: SRS 2014 sample drawn from 2011 Census frame covering 8844 sample units (4,960 rural and 3,884 urban units) with approximately 8.2 million population across 29 states and 7 union territories for the year 2017-1.

- The causes of death is determined using an advanced form of Verbal Autopsy called the "RHIME" or Representative, Resampled, Routine Household Interview of Mortality with Medical Evaluation method.

- Each household in the SRS sample units where a death occurs is visited, retrospectively, by the trained SRS supervisors to collect the details of signs and symptoms.

- The assignment of cause of death involved medical evaluation by two independent trained physicians who examines the field reports using a web-based system. Continuing disagreements would be referred to a senior third physician.

- A random sample of about 5% of the units is re-surveyed by an independent team to ensure the quality of fieldwork, completeness and accuracy.

- ICD 10 categories are further clubbed as: (I) communicable, maternal, perinatal and nutritional conditions; (II) non-communicable diseases; and (III) injuries.
<table>
<thead>
<tr>
<th>Causes of Death</th>
<th>Age-Group (Percentage of Deaths)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Person</td>
</tr>
<tr>
<td>Communicable, maternal, perinatal and nutritional conditions</td>
<td>21.5</td>
</tr>
<tr>
<td>Acute bacterial sepsis &amp; severe infections</td>
<td>0.5</td>
</tr>
<tr>
<td>Diarrhoeal diseases</td>
<td>3.3</td>
</tr>
<tr>
<td>Fever of unknown origin</td>
<td>5.0</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>0.2</td>
</tr>
<tr>
<td>Malaria</td>
<td>0.4</td>
</tr>
<tr>
<td>Maternal conditions</td>
<td>0.2</td>
</tr>
<tr>
<td>Nutritional deficiencies</td>
<td>0.4</td>
</tr>
<tr>
<td>Other infectious and parasitic diseases</td>
<td>0.9</td>
</tr>
<tr>
<td>Perinatal conditions</td>
<td>3.7</td>
</tr>
<tr>
<td>Respiratory infections</td>
<td>3.6</td>
</tr>
<tr>
<td>Selected tropical diseases</td>
<td>0.4</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Non-Communicable diseases</strong></td>
<td><strong>56.0</strong></td>
</tr>
<tr>
<td>Cardiovascular diseases</td>
<td>28.9</td>
</tr>
<tr>
<td>Congenital abnormalities</td>
<td>0.5</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>3.2</td>
</tr>
<tr>
<td>Digestive diseases</td>
<td>5.0</td>
</tr>
<tr>
<td>Genito-urinary diseases</td>
<td>3.0</td>
</tr>
<tr>
<td>Malignant and other Neoplasms</td>
<td>6.8</td>
</tr>
<tr>
<td>Neuro-psychiatric conditions</td>
<td>0.8</td>
</tr>
<tr>
<td>Respiratory diseases</td>
<td>7.3</td>
</tr>
<tr>
<td>Other Non-Communicable Diseases</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Injuries</strong></td>
<td><strong>10.4</strong></td>
</tr>
<tr>
<td>Injuries of Undetermined intent</td>
<td>0.1</td>
</tr>
<tr>
<td>Intentional injuries: Other Than Suicide</td>
<td>0.2</td>
</tr>
<tr>
<td>Intentional injuries: Suicide</td>
<td>2.5</td>
</tr>
<tr>
<td>Unintentional injuries: Motor Vehicle Accidents</td>
<td>3.6</td>
</tr>
<tr>
<td>Unintentional injuries: Other Than Motor Vehicle Accidents</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Symptoms, signs and III-defined conditions</strong></td>
<td><strong>12.2</strong></td>
</tr>
<tr>
<td>III-defined/All other symptoms, signs and abnormal clinical and laboratory findings</td>
<td>12.2</td>
</tr>
</tbody>
</table>
Cause of death statistics (VSD, RGI)

• Medical Certification of Cause of Death (Direct)
  • Registration of Births and Deaths Act, 1969. Section 10(2) of the Act empowers the State Government to enforce the provision relating to medical certification of cause of death in specified areas taking into consideration the availability of medical facilities.
  • Data on medically certified cause of deaths received from 34 States/UTs
  • ICD 10th Revision; Covid-19 code (U07.1 and U07.2) recommended by ICMR

• Objective: To provide reliable cause-specific mortality statistics on a regular basis to Administrators, Policy Planners, Researchers and other Professionals for evidence-based decision-making with regard to resource allocation, monitoring of indicators, identifying the priorities for programs and other related activities in the area of Public Health.

• https://censusindia.gov.in/nada/index.php/catalog/42681
Cause of death statistics (VSD, RGI)

• Methodology
  • Data is collected in the prescribed forms (Form 4 for Hospital deaths and Form 4A for Non-institutional deaths).
  • The forms are filled-up by the medical professionals attending to the deceased at the time of terminal illness.
  • The forms are sent to Registrars of Births and Deaths for onward transmission to the Chief Registrar Office. The States/UTs subsequently send it to the Office of RGI.

• Scope and coverage
  • MCCD-2020, is based upon 18,11,688 total medically certified deaths (Male: 11,60,119 and Female: 6,51,569).
  • As per CRS, 2020, the number of registered deaths at National level is 81,15,882.
  • Medically certified deaths account for 22.5 per cent of total registered deaths at National level.
Cause of death statistics (VSD, RGI)

• Distribution of Deaths by Cause

• Nine leading cause-groups of deaths constituting around 88.7 per cent of MCCD
  - Diseases of Circulatory System (32.1 per cent)
  - Diseases of Respiratory System (10.0 per cent)
  - Codes for Special Purposes – COVID-19 (8.9 per cent)
  - Certain Infectious and Parasitic Diseases (7.1 per cent)
  - Endocrine, Nutritional and Metabolic Diseases (5.8 per cent)
  - Injury, Poisoning and Certain other Consequences of External Causes (5.6 per cent)
  - Neoplasms (4.7 per cent)
  - Certain Conditions Originating in the Perinatal Period (4.1 per cent)
  - Symptoms Signs & Abnormal Clinical Findings “Not Elsewhere Classified” (10.6 per cent)

• Specific cause of Mortality in different age groups (state-wise tables cross-classified by age, sex and cause of death)
Cause of death statistics (VSD, RGI)
Mission Antyodaya

• Adopted in Union Budget 2017-18, Mission Antyodaya is a convergence and accountability framework aiming to bring optimum use and management of resources allocated by 27 Ministries / Department of the Government of India under various programmes for the development of rural areas.

• It is envisaged as state-led initiative with Gram Panchayats as focal points of convergence efforts.

• Annual survey in Gram Panchayats across the country is an important aspect of Mission Antyodaya framework.

• It is carried out coterminous with the People’s Plan Campaign (PPC) of Ministry of Panchayat Raj and its’ purpose is to lend support to the process of participatory planning for Gram Panchayat Development Plan (GPDP).

• https://missionantyodaya.nic.in/ma2020/rawData2020.html
Mission Antyodaya

Figure 1: Multidimensional approach under ‘Mission Antyodaya’

- Social Protection for old, widows, divyang
- Connectivity, Roads, Internet, LPG, Aadhaar, IT/DBT, Transport
- Power, Housing ODF, Waste Management
- Sports Youth Clubs Culture
- Non-farm Livelihood, Multiple Livelihoods
- Wellbeing of the vulnerable
- Women SHGs, Economic Activity
- Education, Skill Development
- Health and Nutrition
- Water Conservation
- Bank/Credit/Financial Inclusion
Mission Antyodaya Portal
## Mission Antyodaya Survey Completion

<table>
<thead>
<tr>
<th>State Name</th>
<th>Districts</th>
<th>Blocks</th>
<th>GPs</th>
<th>Villages</th>
<th>2017-18</th>
<th>2019</th>
<th>2022*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>735</td>
<td>7201</td>
<td>269942</td>
<td>667933</td>
<td>247910</td>
<td>92%</td>
<td></td>
</tr>
<tr>
<td>Andaman And Nicobar Islands (35)</td>
<td>3</td>
<td>9</td>
<td>70</td>
<td>361</td>
<td>70</td>
<td>100%</td>
<td>69</td>
</tr>
<tr>
<td>Andhra Pradesh (28)</td>
<td>13</td>
<td>668</td>
<td>13371</td>
<td>20256</td>
<td>12904</td>
<td>97%</td>
<td>13058</td>
</tr>
<tr>
<td>Arunachal Pradesh (12)</td>
<td>25</td>
<td>114</td>
<td>2106</td>
<td>5798</td>
<td>1673</td>
<td>97%</td>
<td>1467</td>
</tr>
<tr>
<td>Assam (18)</td>
<td>33</td>
<td>242</td>
<td>2772</td>
<td>27342</td>
<td>2649</td>
<td>97%</td>
<td>2370</td>
</tr>
<tr>
<td>Bihar (10)</td>
<td>38</td>
<td>534</td>
<td>8387</td>
<td>45821</td>
<td>7239</td>
<td>86%</td>
<td>8378</td>
</tr>
<tr>
<td>Chandigarh (4)</td>
<td>28</td>
<td>146</td>
<td>11664</td>
<td>20321</td>
<td>10968</td>
<td>94%</td>
<td>11593</td>
</tr>
<tr>
<td>Chhattisgarh (22)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andaman And Nicobar Islands (35)</td>
<td>3</td>
<td>9</td>
<td>70</td>
<td>361</td>
<td>70</td>
<td>100%</td>
<td>69</td>
</tr>
<tr>
<td>Andhra Pradesh (28)</td>
<td>13</td>
<td>668</td>
<td>13371</td>
<td>20256</td>
<td>12904</td>
<td>97%</td>
<td>13058</td>
</tr>
<tr>
<td>Arunachal Pradesh (12)</td>
<td>25</td>
<td>114</td>
<td>2106</td>
<td>5798</td>
<td>1673</td>
<td>97%</td>
<td>1467</td>
</tr>
<tr>
<td>Assam (18)</td>
<td>33</td>
<td>242</td>
<td>2772</td>
<td>27342</td>
<td>2649</td>
<td>97%</td>
<td>2370</td>
</tr>
<tr>
<td>Bihar (10)</td>
<td>38</td>
<td>534</td>
<td>8387</td>
<td>45821</td>
<td>7239</td>
<td>86%</td>
<td>8378</td>
</tr>
<tr>
<td>Chandigarh (4)</td>
<td>28</td>
<td>146</td>
<td>11664</td>
<td>20321</td>
<td>10968</td>
<td>94%</td>
<td>11593</td>
</tr>
<tr>
<td>Chhattisgarh (22)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mission Antyodaya Survey Questionnaire

- Basic parameters
- Agriculture and Land Development, fuel and fodder
- Animal Husbandry
- Fisheries
- Rural Housing
- Water & Environmental Sanitation
- Roads & communication
- Conventional & Nonconventional Energy
- Financial and Communication Infrastructure
- Markets and fairs
- Public distribution system
- Libraries

- Recreation & Sports
- Education/Vocational Education
- Welfare of the weaker sections
- Poverty Alleviation Programme
- Khadi, village and cottage industries
- Small scale industries
- Social forestry
- Health, Nutrition, Mother & Child development & Family Welfare
- Good Governance - GP Infrastructure & services
- [https://missionantyodaya.nic.in/ma2020/rawData2020.html](https://missionantyodaya.nic.in/ma2020/rawData2020.html)
Mission Antyodaya Survey Questionnaire (Health / Nutrition)

- Data items (about 40 indicators under the section)
  - SC, PHC, CHC, nearest PM-JAY facility by distance
  - Jan Aushadhi Kendra
  - AWC and service statistics (beneficiaries)
  - Anemic, stunted, SAM, LBW, child and maternal deaths etc
  - TB
  - Mental health institutional access

- Data providers
  - ASHA/ANM/ICDS Supervisor/Health Supervisor/AWW
  - VLCPC/Block PMU of CPU/VCPC
  - Women Self Help Group
  - Panchayat Office (from population register)
  - Gram Paanchayat Office/Panchayat Secretary/eGramSwaraj
Health Management Information System (HMIS)

• The HMIS Portal facilitates the flow of physical performance from the Facility level to the Sub-district, District, State and National level using a web based Health Management Information System (HMIS) interface. The portal provides periodic reports on the status of the health services performances and Human Resources and Infrastructure services facilities available.

• HMIS captures facility-wise information as follows:
  
  • Service Delivery (Reproductive, Maternal and Child Health related, Immunisation family planning, Vector borne disease, Tuberculosis, Morbidity and Mortality, OPD, IPD Services, Surgeries etc. data) on monthly basis.
  
  • Infrastructure (Manpower, Equipment, Cleanliness, Building, Availability of Medical Services such as Surgery etc., Super Specialties services such as Cardiology etc., Diagnostics, Para Medical and Clinical Services etc. data) on monthly basis.

• [https://hmis.mohfw.gov.in/#/](https://hmis.mohfw.gov.in/#/)
HMIS Journey

- HMIS 1.0 started functioning from 2008-09 with District level reporting. Gradually, facility level data entry was initiated during 2011-12 and it was completed by 2016-17.
- Due to technological and programme need, HMIS revamping was initiated in 2019-20 and further launched in Dec 2020.
HMIS Formats

**Annual (Infrastructure)**
- DH
- SDH
- CHC
- PHC
- SC

**Monthly (Service delivery)**
- District HQ
- DH
- SDH
- CHC
- PHC
- SC

**Quarterly (Trainings)**
- State
- District

HMIS Data Flow

Data Entry Operator at Block 
Enters Data for each facility

Source: https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=1304&lid=688
HMIS Features

• Data entry
  • All types of public health facilities and private hospitals are mapped either as SC/PHC/CHC/SDH/DH and based on this mapping, set of data items for which data has to be filled are generated.
  • Inbuilt Consistency check for Data Quality i.e. inter-data validation, comparison with data reported in the previous months etc.

• Integration with other Systems
  • Linkage through API with other national level portal of Ministry of Health & Family Welfare, Ministry of Rural Development, Ministry of Tribal Affairs etc.
  • State specific generic API for fetching data from State MIS portal (like PCTS portal of Rajasthan)

• Reporting
  • Provisioning for real-time monitoring, Alerts, Analytics GIS Integration with layers up to road, village boundary etc.
  • Data Visualization through GIS and Interactive Dashboard
  • Standard reports in public domain and real time reports in login available. Real time reports include data reporting status, all data items report, Key HMIS report, Min-Max, Range report etc.
Data captured in HMIS

• Service Delivery:
  • Maternal Health, Child-health & Immunization, Family Planning,
  • Vector Borne Disease, Tuberculosis, Morbidity and Mortality,
  • OPD, IPD Services, Surgeries etc.

• Infrastructure:
  • Manpower, Equipment,
  • Cleanliness, Building,
  • Availability of Medical Services such as Surgery etc.,
  • Super Specialties services such as Cardiology etc.,
  • Diagnostics,
  • Para Medical and Clinical Services etc.

• Standard reports with 203 indicators (2019-20) for states, districts and blocks
<table>
<thead>
<tr>
<th>Facility Type /No*</th>
<th>Total</th>
<th>Public</th>
<th>Private</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Centre</td>
<td>160894</td>
<td>160814</td>
<td>80</td>
<td>157413</td>
<td>3481</td>
</tr>
<tr>
<td>Primary Health Centre</td>
<td>30802</td>
<td>30354</td>
<td>448</td>
<td>24963</td>
<td>5839</td>
</tr>
<tr>
<td>Community Health Centre</td>
<td>11762</td>
<td>5631</td>
<td>6131</td>
<td>7195</td>
<td>4567</td>
</tr>
<tr>
<td>Sub-District Hospital</td>
<td>2276</td>
<td>1350</td>
<td>926</td>
<td>1072</td>
<td>1207</td>
</tr>
<tr>
<td>District Hospital</td>
<td>1200</td>
<td>1008</td>
<td>192</td>
<td>1197</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>206934</td>
<td>199157</td>
<td>7777</td>
<td>191840</td>
<td>15094</td>
</tr>
</tbody>
</table>

As of March 2022, there were around 747 districts and around 2.17 lakh health facilities mapped and reporting through HMIS Portal.
Coverage of HMIS

- Health Sub Centre: 17042, 7.83%
- Primary Health Centre: 2873, 1.32%
- Community Health Centre: 1253, 0.58%
- Sub District Hospital: 33823, 15.54%
- District Hospital: 162664, 74.73%
## Coverage of HMIS

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>States/UTs</th>
<th>Health Sub Centre</th>
<th>Primary Health Centre</th>
<th>Community Health Centre</th>
<th>Sub District Hospital</th>
<th>District Hospital</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andaman &amp; Nicobar Islands</td>
<td>432</td>
<td>27</td>
<td>31</td>
<td>3</td>
<td>3</td>
<td>514</td>
</tr>
<tr>
<td>2</td>
<td>Andhra Pradesh</td>
<td>11460</td>
<td>161</td>
<td>51</td>
<td>29</td>
<td>13432</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Arunachal Pradesh</td>
<td>367</td>
<td>131</td>
<td>0</td>
<td>20</td>
<td>576</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Assam</td>
<td>4701</td>
<td>1010</td>
<td>202</td>
<td>14</td>
<td>5962</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Bihar</td>
<td>10950</td>
<td>1787</td>
<td>302</td>
<td>47</td>
<td>12962</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Chandigarh</td>
<td>0</td>
<td>42</td>
<td>2</td>
<td>1</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Chhattisgarh</td>
<td>5494</td>
<td>823</td>
<td>170</td>
<td>12</td>
<td>6333</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Delhi</td>
<td>399</td>
<td>555</td>
<td>26</td>
<td>11</td>
<td>1053</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Goa</td>
<td>219</td>
<td>63</td>
<td>6</td>
<td>2</td>
<td>293</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Gujarat</td>
<td>9132</td>
<td>1807</td>
<td>361</td>
<td>54</td>
<td>40</td>
<td>11394</td>
</tr>
<tr>
<td>11</td>
<td>Haryana</td>
<td>2991</td>
<td>535</td>
<td>152</td>
<td>25</td>
<td>27</td>
<td>3450</td>
</tr>
<tr>
<td>12</td>
<td>Himachal Pradesh</td>
<td>2127</td>
<td>995</td>
<td>99</td>
<td>84</td>
<td>2921</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Jammu And Kashmir</td>
<td>2500</td>
<td>982</td>
<td>82</td>
<td>0</td>
<td>27</td>
<td>3591</td>
</tr>
<tr>
<td>14</td>
<td>Jharkhand</td>
<td>3840</td>
<td>351</td>
<td>177</td>
<td>9</td>
<td>21</td>
<td>4416</td>
</tr>
<tr>
<td>15</td>
<td>Karnataka</td>
<td>9366</td>
<td>2532</td>
<td>232</td>
<td>155</td>
<td>12209</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Kerala</td>
<td>5475</td>
<td>944</td>
<td>210</td>
<td>87</td>
<td>56</td>
<td>6702</td>
</tr>
<tr>
<td>17</td>
<td>Ladakh</td>
<td>289</td>
<td>33</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>331</td>
</tr>
<tr>
<td>18</td>
<td>Lakshadweep</td>
<td>15</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>19</td>
<td>Madhya Pradesh</td>
<td>10227</td>
<td>544</td>
<td>324</td>
<td>113</td>
<td>51</td>
<td>12259</td>
</tr>
<tr>
<td>20</td>
<td>Maharashtra</td>
<td>10569</td>
<td>5254</td>
<td>448</td>
<td>88</td>
<td>83</td>
<td>14832</td>
</tr>
<tr>
<td>21</td>
<td>Manipur</td>
<td>415</td>
<td>95</td>
<td>17</td>
<td>1</td>
<td>9</td>
<td>537</td>
</tr>
<tr>
<td>22</td>
<td>Meghalaya</td>
<td>460</td>
<td>147</td>
<td>28</td>
<td>2</td>
<td>13</td>
<td>650</td>
</tr>
<tr>
<td>23</td>
<td>Mizoram</td>
<td>367</td>
<td>65</td>
<td>7</td>
<td>2</td>
<td>12</td>
<td>453</td>
</tr>
<tr>
<td>24</td>
<td>Nagaland</td>
<td>452</td>
<td>136</td>
<td>23</td>
<td>0</td>
<td>12</td>
<td>623</td>
</tr>
<tr>
<td>25</td>
<td>Odisha</td>
<td>6688</td>
<td>1391</td>
<td>384</td>
<td>33</td>
<td>37</td>
<td>9533</td>
</tr>
<tr>
<td>26</td>
<td>Puducherry</td>
<td>84</td>
<td>46</td>
<td>4</td>
<td>2</td>
<td>14</td>
<td>140</td>
</tr>
<tr>
<td>27</td>
<td>Punjab</td>
<td>3120</td>
<td>526</td>
<td>164</td>
<td>94</td>
<td>29</td>
<td>3883</td>
</tr>
<tr>
<td>28</td>
<td>Rajasthan</td>
<td>13589</td>
<td>2518</td>
<td>685</td>
<td>91</td>
<td>30</td>
<td>16913</td>
</tr>
<tr>
<td>29</td>
<td>Sikkim</td>
<td>153</td>
<td>26</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>185</td>
</tr>
<tr>
<td>30</td>
<td>Tamil Nadu</td>
<td>8715</td>
<td>1804</td>
<td>412</td>
<td>311</td>
<td>32</td>
<td>11344</td>
</tr>
<tr>
<td>31</td>
<td>Telangana</td>
<td>4510</td>
<td>824</td>
<td>82</td>
<td>44</td>
<td>21</td>
<td>5981</td>
</tr>
<tr>
<td>32</td>
<td>The Dadar And Nagar Haveli And Damn And Du</td>
<td>97</td>
<td>34</td>
<td>4</td>
<td>1</td>
<td>13</td>
<td>119</td>
</tr>
<tr>
<td>33</td>
<td>Tripura</td>
<td>999</td>
<td>115</td>
<td>23</td>
<td>12</td>
<td>8</td>
<td>1157</td>
</tr>
<tr>
<td>34</td>
<td>Uttar Pradesh</td>
<td>1803</td>
<td>607</td>
<td>80</td>
<td>21</td>
<td>14</td>
<td>2537</td>
</tr>
<tr>
<td>35</td>
<td>West Bengal</td>
<td>26783</td>
<td>5316</td>
<td>849</td>
<td>0</td>
<td>190</td>
<td>25337</td>
</tr>
<tr>
<td>36</td>
<td>All India</td>
<td>162652</td>
<td>32281</td>
<td>6217</td>
<td>1407</td>
<td>1070</td>
<td>203627</td>
</tr>
</tbody>
</table>
National Family Health Survey (NFHS)

- Nationally representative sample enabling a state level disaggregation.

- Facilitates an analysis with the unit as households, women of reproductive ages, men and children below five years of age. Allows for Common socio-economic indicators of disaggregation like residence, caste, religion, SLI, age, sex, HH size etc.

- Even though it is labeled as a demographic survey, Five consecutive rounds since 1992-93 which enables a temporal analysis

- Covers potential maternal and child health-care seeking segments of the population. Health outcomes like morbidity, mortality as well as nutrition is available in detail
DHS: Demographic and Health Surveys

- DHS as a follow up of World Fertility Surveys
  - DHS-I 1984 – 1990
  - DHS-II 1989 – 1993
  - DHS-IV 1997 – 2003 (MEASURE DHS)
  - DHS-V 2003 – 2008 (MEASURE DHS+)
  - DHS-VI 2008 – 2013 (MEASURE DHS Phase III)
  - DHS-7 2013 – 2018
  - DHS-8 2018 – 2023

- Mainly in countries receiving USAID funding
The main objective of The DHS Program is to improve the collection, analysis, and dissemination of population, health, and nutrition data and to facilitate use of these data for planning, policy-making and program management, resulting in:

- Improved tools, methods, partnerships, and technical guidance to collect quality population, health, and nutrition data.
- Increased in-country individual and institutional capacity for identification of data needs and for survey design, management, and data collection to meet those needs.
- Improved availability of DHS Program survey data and information.
- Advanced availability and synthesis of DHS Program survey data.
- Improved facilitation of DHS Program data use among stakeholders worldwide.
Women’s questionnaire

- Background characteristics
- Reproduction
- Contraception
- Pregnancy and postnatal care
- Child immunization
- Child health and nutrition
- Marriage and sexual activity
- Fertility preferences
- Husband’s background and woman’s work
- HIV/AIDS
- Other health issues

The DHS Interviewer’s Manual provides a detailed explanation of the survey questions and tips on conducting interviews.

The DHS Supervisor’s and Editor’s Manual explains the roles of the supervisor in leading the field teams, and for editors, how to check completed questionnaires.

Training Field Staff for DHS Surveys is designed for survey managers to provide tips on how to organize and conduct training for field staff. It describes techniques of mock interviewing, demonstration interviews in front of the class, field practice, and sample tests for trainees.

The DHS Sampling Manual presents the DHS approach to issues like optimum sampling frames, sample domains, stages, and sample selection. The Household Listing portion of the sampling manual describes how to locate selected sample points, how to draw a sketch map, and how to list the households and structures.

The DHS Tabulation Plan for Key Indicators Report describe the key tabulations in the Key Indicators Report.

The Tabulation Plan for DHS Final Report details the tabulations that will be produced with the survey data for each chapter of the report. This manual also aids data processing staff in determining the exact tabulations that are required for the survey reports. The Guide to DHS Statistics should be used in conjunction with the Tabulation Plan and describes the statistics presented in each tabulation.

The Biomarker Field Manual is designed to be used, in combination with classroom instruction and practical experience, to teach fieldworkers how to collect biomarkers for a DHS, MIS or AIS.

The DHS User’s Guide for Questionnaires in Excel is guide to using the Excel versions of the DHS questionnaires in adapting them to individual surveys.

Incorporating Geographic Information into Demographic and Health Surveys: A Field Guide to GPS Data Collection is designed to be a start-to-finish guide to Global Positioning System (GPS) data collection in DHS, MIS, and AIS. This guide provides background information on GPS, how the technology works, how GPS data are collected, and how they are used in the context of a DHS.

DHS Survey Organization Manual is intended as an aid to host country survey staff, donors, and others, and explains the standard approach to implementing a DHS.

The basic documentation for The DHS Program can be found at https://www.dhsprogram.com/publications/Publication-Search.cfm?type=3;
Data collection

Cluster

Households

Household 1

Household 2

Household 3

GE file
GC file

HR file

Household members

Man 15-49

Woman 15-49

Other adult

Child

Woman 15-49

Child

PR file
AR file

Individual questionnaires

Man

Woman

Woman

IR file
MR file

Birth history & child health sections

Child

Child

Child

BR file
KR file
(< 5)
Recode Files

• HR: Household Recode
  • Unit of analysis: Households
  • Includes household characteristics, the household roster, and biomarkers rosters as repeating sets of variables. This dataset is used for calculation of household level indicators such as water and sanitation

• PR: Household members (or Persons) Recode
  • Unit of analysis: Household member
  • Includes characteristics of household members including age, sex, marital status, education, as well as biomarker measurement information.
Recode Files

• IR: Individual (Women’s) Recode
  • Unit of analysis: De facto woman interviewed
  • Contains all the data collected in the Woman’s Questionnaire for de facto women plus some variables from the Household Questionnaire. Up to 20 births in the birth history

• BR: Births Recode
  • Unit of analysis: Birth
  • Contains the full birth history of all women interviewed, including information on pregnancy and postnatal care as well as immunization, health and nutrition data for children born in the last 5 years.
Recode Files

- KR: Kids Recode
  - Unit of analysis: Child under age 5 born to a woman interviewed
  - Contains the information related to the child's pregnancy and postnatal care and immunization, health and nutrition data. The data for the mother of each of these children is also included.

- MR: Men’s Recode
  - Unit of analysis: De facto man interviewed
  - Contains all data collected in the Man’s Questionnaire de facto men plus some variables from the Household Questionnaire.

- CR: Couples Recode
  - Unit of analysis: Married woman and man
  - Contains data for married or living together women and men who both declared that they are married (living together) to each other and with completed individual interviews.
Recode Files

• AR: HIV testing Recode
  • Unit of analysis: Person tested for HIV
  • Contains the result of lab testing for HIV from blood samples provided by women and men, together with a separate weight variable for use when analyzing HIV test results.

• GE: Geographic Data
  • Unit of analysis: Cluster
  • The geographic datasets (also known as GPS data) contain a single record per cluster in which the survey was conducted and provide the latitude, longitude and elevation for the survey cluster, for use in Geographic Information Systems (GIS).
Recode File Naming

• The naming of the zip files and their contents follows the DHS file naming convention: CCDDVVFF[DS].ZIP

• Code Description:
  • CC: Country Code
  • DD: Dataset Type.
  • FF: File Format. DT - Stata, SV - SPSS, SD - SAS, FL - Flat, no file format – Hierarchical.
  • DS: Data Structure. SPA only: SR - SPA Recode, SP - SPA Raw.

• For example, UGIR7ADT.ZIP contains the Stata version of the Individual Women’s Recode dataset for the Uganda 2016 DHS conducted as part of DHS-7.
HR and PR

• Household Recode (HR) and Household Member Recode (PR)
  • hv0xx Basic characteristics of the household interview (hhid,hv000-hv046)
  • hv8xx Time of household interview and date of biomarker visit (hv801-hv807a)
  • hv1xx Characteristics of household members (hvidx,hv101-hv140)
  • hv2xx Characteristics of the household (hv201-hv271a)
  • haxx Anthropometry, anemia and biomarkers for women (hao-ha70)
  • hbxx Anthropometry, anemia and biomarkers for men (hbo-hb70)
  • hcxx Anthropometry, anemia and biomarkers for children (hco-hc73)
  • hmlxx Mosquito net characteristics and use (hmlidx,hml3-hml11,hml21-hml23,hmla-hmle)
  • Mosquito net use by household members (hml12-20), and malaria test results (hml30-hml36)
  • shxxx Survey-specific household or household member characteristics
IR, BR and KR

- Women’s Individual Recode (IR), Births Recode (BR), and Children Under age 5 Recode (KR)
- v0xx Basic characteristics of the women’s interview (caseid,v000-v046)
- v1xx Woman’s characteristics (v101-v191a)
- bxx Birth history (bidx,bord,b1-b20)
- v2xx Reproduction (v201-v244)
- v3xx Contraception (v301-v3a09b)
- mxx Maternal health, pregnancy, postnatal care and breastfeeding (midx,m1-m78j)
- v4xx Anthropometry and anemia of interviewed women, breastfeeding, and feeding of youngest child living with mother (v401-v482c)
- hxx Immunization and child health (hidx,ho-h8og)
- hwxx Anthropometry for children of interviewed women (hwidx,hw1-hw73)
- v5xx Marriage and sexual exposure
- v6xx Fertility preferences
IR, BR and KR

- Women’s Individual Recode (IR), Births Recode (BR), and Children Under age 5 Recode (KR)
- v7xx Husband’s characteristics, women’s work, women’s empowerment (v701-v746)
- HIV/AIDS knowledge, attitudes and practices, and sexually transmitted infections (v750-v791a)
- v8xx Interview characteristics (v801-v815c)
- HIV related practices, sexual activity (v820-v858)
- vcal Reproductive/contraceptive calendar
- mmxx Adult and maternal mortality (optional)
- mlxx Malaria-related child health (idxml,mlo-ml25a)
- dxxx Domestic violence (d005,d101-d130c)
- gxxx Female genital cutting (g100-g119,gidx,g121-124)
- sxxx Women’s survey-specific
- Men’s Recode (MR)
- mv0xx Basic characteristics of the men’s interview (mcaseid,mv000-mv046)
- mv8xx Interview characteristics (mv801-mv803)
- mv1xx Man’s characteristics (mv101-mv191a)
- mv2xx Reproduction (mv201-mv252)
- mv3xx Contraception (mv301-mv3b25b)
- mv4xx Smoking, tuberculosis and other adult health issues (mv463a-mv484l)
- mv5xx Marriage and sexual exposure (mv501-mv541)
- mv6xx Fertility preferences (mv602-mv634d)
- mv7xx Employment (mv714-mv747b)
- HIV/AIDS knowledge, attitudes and practices, and sexually transmitted infections (mv750-mv793b,mv820-mv858)
- mgxxx Female genital cutting (mg100-mg119)
- smxx Men’s survey-specific
Information on nutrition in surveys

• Surveys for nutrition indicators
  • National Family Health Surveys (NFHS)
  • District Level Household Surveys (DLHS)
  • Annual Health Surveys (AHS)
  • National Sample Surveys (NSS)
  • Comprehensive National Nutrition Survey (CNNS)
  • National Nutrition Monitoring Bureau (NNMB) Surveys
  • Longitudinal Aging Study of India (LASI)
  • India Human Development Surveys (IHDS)
  • Young Lives India
Gaps in NFHS

• No information on income or expenditure. Also no focus on elderly.

• No greater details regarding each and every individual of the household – children and adolescents (5-14 years; thin sample of men)

• Information only on recently born children for key indicators

• Elderly information not available from care perspective

• Diets not comprehensive

• District level estimates needs careful interpretation
Anemia

Pregnant women age 15-49 years who are anemic (<11.0 g/dl) (%)

- Reliable estimates for 152 districts (out of 707 districts)
- Estimates based on 25-49 unweighted cases (N) for 420 districts out of 707 districts
- Estimates unavailable (fewer than 25 unweighted cases) for 135 districts

The 95% CI for anemia among pregnant women can be very wide

Examples:
- Reliable estimates category (Gaya 68% [95% CI: 60%; 77%])
- 25-49 unweighted cases category (Surat 29% [12%; 46%])
- Estimates unavailable category (South West Delhi 51% [24%; 79%])
National Family Health Surveys (NFHS)

• Indicators
  • Anthropometrics (stunting, underweight, wasting, BMI)
  • Anemia (severe, mild, moderate)
  • Consumption frequency by food groups (IYCF guidelines; 8 food groups)
  • Micronutrients (IFA consumption, Vitamin A doses, Iodized salt)
  • Breastfeeding and complementary feeding practices
  • Blood sugar and blood pressure

• Sample and estimates
  • Cross-sectional design
  • Women 15-49 years; children below 5 years; men 15-54 years
  • All India (state and district level estimates)
  • Allows determinants analysis (socioeconomic and demographic factors)

• Background and availability
  • MoHFW and IIPS (Nodal)
  • (http://rchiips.org/nfhs/)
District Level Household Surveys (DLHS)

• Indicators
  • Anthropometrics (stunting, underweight, wasting, BMI)
  • Anemia (severe, mild, moderate)
  • Micronutrients (IFA consumption, Vitamin A doses, iodized salt)
  • Breastfeeding and complementary feeding practices
  • Blood sugar and blood pressure

• Sample and estimates
  • Cross-sectional design
  • Women 15-49 years; children below 5 years
  • All India (state and district level estimates)
  • Allows determinants analysis (socioeconomic and demographic factors)

• Nodal organization and availability
  • MoHFW and IIPS (Nodal)
  • 1998-99; 2002-04; 2007-08 and 2012-13
  • (http://rchiips.org/DLHS-4.html)
Annual Health Surveys (AHS)

- Indicators
  - Anthropometrics (stunting, underweight, wasting, BMI)
  - Anemia (severe, mild, moderate)
  - Micronutrients (IFA consumption, Vitamin A doses, iodized salt)
  - Breastfeeding and complementary feeding practices
  - Blood sugar and blood pressure

- Sample and estimates
  - Longitudinal design (no identifiers – hence cross-sectional)
  - Women 15-49 years; children below 5 years; Adolescents
  - All India (state and district level estimates)
  - Allows determinants analysis (socioeconomic and demographic factors)

- Background and Availability
  - RGI (Nodal) and MoHFW
  - 2010-11, 2011-12, 2012-13 and 2014
National Sample Surveys (NSS)

• Household Consumer Expenditure Survey Indicators
  • Calories, protein and fat intake by households
  • Food items consumed by quantity
  • Cereals, pulses, milk and milk products, sugar and salt
  • Edible oil, egg, fish and meat, vegetables, fruits, spices, beverages and processed food
  • Pan, tobacco and intoxicants

• Sample and estimates
  • Cross-sectional design
  • Household level information
  • All India (state level estimates by rural and urban areas)
  • Basic socioeconomic and demographic factors and some elasticities

• Background and availability
  • MoSPI and NSSO (Nodal)
  • 1983 (Round 38); 1987/88 (round 43); 1993/94 (Round 50); 1999-00 (Round 55)
  • 2004-05 (round 61); 2009-10 (Round 66); 2011-12 (Round 68)
  • [http://mospi.nic.in/98-consumption-surveys-and-levels-living](http://mospi.nic.in/98-consumption-surveys-and-levels-living)
Comprehensive National Nutrition Survey (CNNS)

• Indicators
  • Anthropometrics (stunting, underweight, wasting, BMI)
  • Anemia (severe, mild, moderate)
  • Consumption frequency by food groups (IYCF guidelines; 8 food groups)
  • Micronutrients (IFA consumption, Vitamin A doses, iodized salt)
  • Breastfeeding and complementary feeding practices
  • Micronutrient deficiency (Vitamin A, D, B12, Folate, Zinc, Iodine)
  • NCD markers - Blood sugar, blood pressure, lipid profile, renal function

• Sample and estimates
  • Cross-sectional design
  • Children 0-9 years; Adolescents 10-19 years
  • All India (state level estimates)
  • Allows determinants analysis (socioeconomic and demographic factors)

• Background and availability
  • MoHFW and UNICEF (Nodal)
  • 2016-18
  • (https://nhm.gov.in/WriteReadData/l892s/1405796031571201348.pdf)

<table>
<thead>
<tr>
<th>Information</th>
<th>Access</th>
<th>Quality</th>
<th>Frequency</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
</tbody>
</table>
National Nutrition Monitoring Bureau (NNMB)

- Indicators
  - Calories, protein and fat intake by households
  - Food items consumed
  - Anthropometrics and Anemia
  - Diabetes and hypertension

- Sample and estimates
  - Cross-sectional design
  - Individual level information
  - Children 0-9 years; Adolescents 10-19 years, Adult males and females
  - Selected states
  - Basic socioeconomic and demographic factors

- Background and availability
  - MoHFW and NIN (Nodal)
  - Several rounds from 1972 onwards but for selected states / target groups
  - (https://www.nin.res.in/researchdivision/publichealth.html)
Longitudinal Aging Study of India (LASI)

• Indicators
  • Anthropometrics (stunting, underweight, wasting, BMI)
  • Anemia (severe, mild, moderate)
  • Consumption frequency by food groups (IYCF guidelines; 8 food groups)
  • Micronutrients (IFA consumption, Vitamin A doses, Iodized salt)
  • Breastfeeding and complementary feeding practices
  • Blood sugar and blood pressure

• Sample and estimates
  • Cross-sectional design
  • Women 15-49 years; children below 5 years; men 15-54 years
  • All India (state and district level estimates)
  • Allows determinants analysis (socioeconomic and demographic factors)

• Background and availability
  • MoHFW and IIPS (Nodal)
  • 2017-18
  • (https://www.iipsindia.ac.in/lasi)
Consumer Pyramids Household Survey (CPHS)

• Consumer Pyramids Household Survey (CPHS) is a continuous survey administered on a panel of sample households.

• Census 2011 as frame for CPHS waves since late 2013. A multi-stage stratified survey design is adopted with villages and towns of the 2011 Census as the PSUs.

• The broadest level of stratification is the Homogeneous Regions (HRs). A Homogeneous Region is a set of neighbouring districts within a state that has similar agro-climatic conditions, relatively similar urbanisation levels and relatively similar female literacy and are of a similar size in terms of households as per the 2011 Census.

• The 640 districts of the 2011 Census have been organised into 110 HRs.

• https://consumerpyramidsdx.cmie.com/
The sample size is fixed at 16 households per selected sample village. Total number sample villages selected per rural Homogeneous Region is 30. Therefore, the sample size per rural Homogeneous Region is 480.

The sample size per ultimate urban sampling unit (i.e. per CEB) is fixed at 16 households per selected sample CEB of a sample town. The number of CEBs per town is fixed at 21. Therefore, the sample size per town was 336.

As of the Wave of September-December 2019, there were 3,965 villages in the sample.

As of the Wave of May-August 2019, there were 322 towns in the sample.
Table 4: Response Rate

<table>
<thead>
<tr>
<th>Wave No.</th>
<th>Wave</th>
<th>Sample</th>
<th>Accepted responses</th>
<th>Response rate(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave1</td>
<td>Jan 01 2014-Apr 30 2014</td>
<td>166,744</td>
<td>145,984</td>
<td>87.55</td>
</tr>
<tr>
<td>Wave2</td>
<td>May 01 2014-Aug 31 2014</td>
<td>160,705</td>
<td>140,692</td>
<td>87.55</td>
</tr>
<tr>
<td>Wave3</td>
<td>Sep 01 2014-Dec 31 2014</td>
<td>157,412</td>
<td>136,798</td>
<td>86.89</td>
</tr>
<tr>
<td>Wave4</td>
<td>Jan 01 2015-Apr 30 2015</td>
<td>158,443</td>
<td>136,448</td>
<td>86.12</td>
</tr>
<tr>
<td>Wave5</td>
<td>May 01 2015-Aug 31 2015</td>
<td>158,666</td>
<td>135,746</td>
<td>85.55</td>
</tr>
<tr>
<td>Wave6</td>
<td>Sep 01 2015-Dec 31 2015</td>
<td>158,624</td>
<td>133,252</td>
<td>84.00</td>
</tr>
<tr>
<td>Wave7</td>
<td>Jan 01 2016-Apr 30 2016</td>
<td>158,624</td>
<td>132,908</td>
<td>83.79</td>
</tr>
<tr>
<td>Wave8</td>
<td>May 01 2016-Aug 31 2016</td>
<td>159,778</td>
<td>132,399</td>
<td>82.86</td>
</tr>
<tr>
<td>Wave9</td>
<td>Sep 01 2016-Dec 31 2016</td>
<td>160,511</td>
<td>132,777</td>
<td>82.72</td>
</tr>
<tr>
<td>Wave10</td>
<td>Jan 01 2017-Apr 30 2017</td>
<td>161,167</td>
<td>135,389</td>
<td>84.01</td>
</tr>
<tr>
<td>Wave11</td>
<td>May 01 2017-Aug 31 2017</td>
<td>160,847</td>
<td>132,686</td>
<td>82.49</td>
</tr>
<tr>
<td>Wave12</td>
<td>Sep 01 2017-Dec 31 2017</td>
<td>168,185</td>
<td>135,465</td>
<td>80.55</td>
</tr>
<tr>
<td>Wave13</td>
<td>Jan 01 2018-Apr 30 2018</td>
<td>169,215</td>
<td>143,216</td>
<td>84.64</td>
</tr>
<tr>
<td>Wave14</td>
<td>May 01 2018-Aug 31 2018</td>
<td>172,365</td>
<td>149,160</td>
<td>86.54</td>
</tr>
<tr>
<td>Wave15</td>
<td>Sep 01 2018-Dec 31 2018</td>
<td>173,181</td>
<td>147,163</td>
<td>84.98</td>
</tr>
<tr>
<td>Wave16</td>
<td>Jan 01 2019-Apr 30 2019</td>
<td>174,405</td>
<td>146,328</td>
<td>83.90</td>
</tr>
<tr>
<td>Wave17</td>
<td>May 01 2019-Aug 31 2019</td>
<td>174,405</td>
<td>147,868</td>
<td>84.78</td>
</tr>
<tr>
<td>Wave18</td>
<td>Sep 01 2019-Dec 31 2019</td>
<td>174,405</td>
<td>147,319</td>
<td>84.47</td>
</tr>
</tbody>
</table>

Table 6: State-wise distribution of sample: January - April 2020

<table>
<thead>
<tr>
<th>State</th>
<th>Urban Sample</th>
<th>Rural Sample</th>
<th>Total Sample</th>
<th>Districts covered in sample</th>
<th>Districts in state</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Towns</td>
<td>CEBS</td>
<td>Households</td>
<td>Villages</td>
<td>Households</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>14</td>
<td>354</td>
<td>5,024</td>
<td>191</td>
<td>3,056</td>
</tr>
<tr>
<td>Assam</td>
<td>4</td>
<td>92</td>
<td>1,179</td>
<td>36</td>
<td>576</td>
</tr>
<tr>
<td>Bihar</td>
<td>16</td>
<td>369</td>
<td>5,078</td>
<td>269</td>
<td>4,304</td>
</tr>
<tr>
<td>Chandigarh</td>
<td>1</td>
<td>37</td>
<td>456</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>9</td>
<td>202</td>
<td>2,864</td>
<td>121</td>
<td>1,935</td>
</tr>
<tr>
<td>Goa</td>
<td>2</td>
<td>41</td>
<td>648</td>
<td>26</td>
<td>416</td>
</tr>
<tr>
<td>Gujarat</td>
<td>18</td>
<td>430</td>
<td>5,608</td>
<td>213</td>
<td>3,408</td>
</tr>
<tr>
<td>Haryana</td>
<td>11</td>
<td>273</td>
<td>3,874</td>
<td>104</td>
<td>1,664</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>2</td>
<td>45</td>
<td>640</td>
<td>40</td>
<td>640</td>
</tr>
<tr>
<td>Jammu &amp; Kashmir</td>
<td>4</td>
<td>81</td>
<td>1,228</td>
<td>85</td>
<td>1,300</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>8</td>
<td>187</td>
<td>2,534</td>
<td>136</td>
<td>2,176</td>
</tr>
<tr>
<td>Karnataka</td>
<td>17</td>
<td>449</td>
<td>6,341</td>
<td>211</td>
<td>4,376</td>
</tr>
<tr>
<td>Kerala</td>
<td>10</td>
<td>228</td>
<td>3,302</td>
<td>89</td>
<td>1,424</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>17</td>
<td>382</td>
<td>5,232</td>
<td>248</td>
<td>3,968</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>37</td>
<td>929</td>
<td>13,626</td>
<td>388</td>
<td>6,208</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>1</td>
<td>21</td>
<td>336</td>
<td>44</td>
<td>704</td>
</tr>
<tr>
<td>Delhi</td>
<td>1</td>
<td>81</td>
<td>880</td>
<td>31</td>
<td>495</td>
</tr>
<tr>
<td>Odisha</td>
<td>12</td>
<td>258</td>
<td>3,737</td>
<td>189</td>
<td>3,024</td>
</tr>
<tr>
<td>Puducherry</td>
<td>2</td>
<td>44</td>
<td>644</td>
<td>31</td>
<td>496</td>
</tr>
<tr>
<td>Punjab</td>
<td>12</td>
<td>314</td>
<td>4,472</td>
<td>143</td>
<td>2,284</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>20</td>
<td>474</td>
<td>6,934</td>
<td>247</td>
<td>3,052</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>21</td>
<td>546</td>
<td>7,674</td>
<td>204</td>
<td>3,264</td>
</tr>
<tr>
<td>Telangana</td>
<td>10</td>
<td>300</td>
<td>4,022</td>
<td>113</td>
<td>1,808</td>
</tr>
<tr>
<td>Tripura</td>
<td>2</td>
<td>49</td>
<td>728</td>
<td>29</td>
<td>464</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>43</td>
<td>1,076</td>
<td>15,237</td>
<td>477</td>
<td>7,631</td>
</tr>
<tr>
<td>Uttarakhand</td>
<td>4</td>
<td>85</td>
<td>1,242</td>
<td>50</td>
<td>800</td>
</tr>
<tr>
<td>West Bengal</td>
<td>23</td>
<td>552</td>
<td>6,898</td>
<td>220</td>
<td>3,513</td>
</tr>
<tr>
<td>Sikkim</td>
<td>1</td>
<td>21</td>
<td>336</td>
<td>30</td>
<td>480</td>
</tr>
<tr>
<td>India</td>
<td>322</td>
<td>7,920</td>
<td>110,975</td>
<td>3,965</td>
<td>63,430</td>
</tr>
</tbody>
</table>
Consumer Pyramids Household Survey (CPHS)

• Questionnaire
  • Member roster
  • Member identities, education and health (healthy, on medication, hospitalized, mobile)
  • Member occupation and industry
  • Member employment status and type
  • Member time use
  • Member financial inclusion
  • Member income and household income
  • Household savings, asset ownerships and borrowings
  • Household monthly food expenses and non-food expenses

• Household monthly health expenses
  • Medicines, Doctors/physiotherapist’s fee, X-Ray/tests, Hospitalisation fees, Premium for health insurance, Diapers/sanitary napkins etc, Gym/yoga classes/dietician fees, Spectacles, lenses and other medical aids)
Concluding remarks

- Health data landscape is expanding to match the requirements as per the SDG indicator framework (NIF mapping).

- There are gaps in level of disaggregation and timeliness for some indicators. Quality and consistency of information content is also critical.

- Data sharing and access is improving (especially with Mission Antyodaya). Greater availability can be expected after updation of HMIS 2.0.

- All survey agencies should be encouraged to share anonymized data.
Thank you!

william@iegindia.org