In the area of non-communicable diseases the ICMR’s Institute of Cytology and Preventive Oncology, Noida continues to carry out research studies for prevention and early detection of cancer. The National Centre for Disease Informatics and Research, Bangalore focuses on the National Cancer Registry Programme and related activities like software module for cancer registration, patterns of cancer patient care and survival studies. Other studies included Population Based Urban Stroke Registry, Population Based Rural Stroke Registry, research studies on diabetes, obesity and metabolic syndrome, otorhinolaryngology, gastroenterology, ophthalmology and oral health. Major highlights of various programmes undertaken by the ICMR in the area of non-communicable diseases during the year 2012-13 are given below.

**Intramural Research**

**INSTITUTE OF CYTOLOGY AND PREVENTIVE ONCOLOGY, NOIDA**

The Institute has mandate of cancer prevention as its main goal. This is being achieved by following a three pronged strategy to achieve objectives to find out cancer causative factors like environmental, behavioral, genetic and their interaction, and managing such factors to prevent cancers. The activities are directed towards: (i) Epidemiological studies and early cancer detection activities; (ii) Genetic susceptibility studies; and (iii) Genetic markers’ studies.

**Screening for Cervical Cancer**

A field based study at Dadri CHC for studying the comparative performance of the three modalities for screening cervical cancer using VIA, VILI and cytology involving about 5000 women of age group 30-60 years as also a field based study for evaluation of new test kit (Care HPV) for detection of HR-HPV (High Risk 14 HPV types) in collaboration with PATH have been concluded.

**Molecular Screening for Cervical Cancer**

The major activities and achievements in the field of Molecular screening of cervical cancer are the recognition of the Institute as a National Referral Centre for HPV & Cervical Cancer Screening, development of multiplex PCR to detect various HPV types in one PCR reaction saving biological material, cost and time and detection of variant HPV types in Indian population for the purpose of developing HPV vaccines.

**Therapeutic Strategies for HPV Infection**

The anti oxidative and anti viral properties of turmeric and Neem are well known in Ayruvedic literatures. ICPO participated in clinical trials of these products to study their efficacy in virus DNA clearance/viral load reduction. ICPO has concluded a DST funded multicentre trial for studying the anti HPV properties of curcumin.

**Prophylactic Vaccines against HPV**

Because of high cost and lack of therapeutic utility of virus - like particle (VLP) based prophylactic HPV vaccines, ‘Gardasil’ (Merck) and ‘Cervarix’ (GSK); there is need to develop indigenous low cost alternative Second Generation Vaccine for HPV, preferably DNA vaccine. Instead of prototype, Indian specific HPV-16 DNA based variant constructs may be suitable for the generation of specific immune response in Indian population.

The amplified gene product having the major variation causes the change in the epitope of the VLP L1 gene in the pGEM T-Easy Vector followed
by pcDNA3.1. Only those variations which cause alterations in the epitope have been cloned. The cloned HPV-16 E6 variants in pGEM T Easy vector and PCDNA3.1 were screened by digestion with EcoRI restriction enzyme and the digested products were checked on 1% agarose gel. The cloned HPV-16 VLP L1 variants in pGEM T Easy vector and PCDNA3.1 were screened by digestion with NcoI and NotI restriction enzyme and the digested products were checked on 1% agarose gel. Their expression in in-vitro cell lines and genetic immunization of the group of 6±8-week-old BALB/c female mice is being carried out.

GENETIC STUDIES

Genetic Susceptibility

These studies aim to identify individual at higher risk of developing cancer and indicate the mechanism (and possibly the causative agent) of cancer by following the metabolic pathways of these genes.

Role of Genetic Polymorphism of Genes Involved in Phase I and Phase II Detoxification System in Susceptibility to Various Cancers

Glutathione transferase is one such big family of genes involved in phase II detoxification system with two genes of interest, GSTM1 and GSTT1 which if absent in certain individuals, make them prone to defect in detoxification of certain chemicals. Like GSTT1 null individuals are more prone to develop oral cancer and GSTM1 null genotype in women make them more prone to develop cervical cancer. Esophageal cancer in Delhi is found to be associated with GSTT1 null genotype and it is associated with GSTM1 in Assam population indicating different exposure causing the same cancer in two different populations.

Genetic Alterations/Genetic Markers

Nucleic acid microarray technique: This work is going on at ICPO to study gene involved in cervical precancerous and cancerous lesions and genetic alterations in genes involved in known pathways of cell proliferations.

The two ongoing projects based on study of SNP in these genes are Single Nucleotide Polymorphisms of Cytokine Genes in Human Papillomavirus (HPV) - mediated Cervical Cancer in Women and Cyclin D1 Gene Polymorphism in Cervical Precancer and Cancer

HPV Vaccine Studies

ICPO is involved in an Indo-German programme for development of Chimeric DNA – based vaccine against human papillomavirus type 16. About 300 samples were analyzed for HPV 16 variant analysis for full length L1, E6 and E7 genes. Twelve major variations in full length L1 (VLPL1) and one major variation in E6 gene were observed. Eight major variant constructs of HPV L1 and one of E6 gene are cloned.
MAJOR ICMR RESEARCH PROJECTS IN NON-COMMUNICABLE DISEASES
of Stroke Registry in India” was also commenced. Forty one centres across the country have so far registered under this project.

A project on “Development of An Atlas of Cancer in Punjab State” was also commenced. Forty four new centres have been registered during 2012-13. As of now, there are 112 centres that have registered. So far data on about 27,667 cases have been received. The list of centres registered for the Punjab Cancer Atlas is shown in Figure 1.

With the development of software modules, 55 centres have started using the Hospital Based Cancer Registry Data Management Programme and have contributed data on 57,348 cancers.

The number of centres under NCRP and the data sets received is given in the Table.

<table>
<thead>
<tr>
<th></th>
<th>Centres</th>
<th>Data Sets</th>
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<tr>
<td>PBCRs</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>HBCRs</td>
<td>9</td>
<td>9</td>
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<tr>
<td>POCSS (incl. 5 HBCRs)</td>
<td>17</td>
<td>45</td>
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<td>Cancer atlas NE</td>
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<td>17</td>
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<tr>
<td>HBCR-DM-SW</td>
<td>46</td>
<td>34</td>
</tr>
<tr>
<td>Punjab Cancer Atlas</td>
<td>102</td>
<td>53</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>219</strong></td>
<td><strong>185</strong></td>
</tr>
</tbody>
</table>

PBCR = Population Based Cancer Registries
HBCR = Hospital Based Cancer Registries
POCSS = Patterns of Care and Survival Studies
HBCR DM SW = Hospital Based Cancer Registries Data Management Software
NE Atlas = Development of an Atlas of Cancer in North East Region

The complete list of collaborating centres with the NCRP network is depicted in Figure 2.
NATIONAL CANCER REGISTRY PROGRAMME

Total number of centres under NCRP = 219
Total number of data sets = 185

(Indian Council of Medical Research)

Fig. 2: Collaborating centres (2013).
Population Based Cancer Registries (PBCRs)

The report of 25 Population Based Cancer Registries (PBCR) includes the data of four new PBCRs (Meghalaya, Nagaland, Tripura and Wardha) that have commenced working and included under the NCRP network since the last report. The 25 PBCRs cover 7.45% of the population of India, with partial or complete representation of 16 States and one Union Territory. Eleven of the PBCRs are in urban localities and two in wholly rural regions. The remaining 11 correspond to both urban and rural parts by virtue of being state or district registries.

Among males, cancers of lung, mouth, oesophagus and stomach are the leading sites across all the registries. Lung cancer is the leading site in Bangalore, Chennai, Delhi, Kolkata, Tripura, Kollam and Thiruvananthapuram. All the PBCRs in Gujarat and Maharashtra States and Bhopal PBCR have mouth cancer as the leading site of cancer. Cancer of the oesophagus is the leading site in the registries in the States of Assam and Meghalaya. Stomach cancer is the leading site in Sikkim and Mizoram while cancer of the nasopharynx is the leading site in Nagaland. Among females, cancer of the breast and cervix are the leading sites of cancer in 18 of 25 PBCRs. Cancer of the gall bladder and cancer of the oesophagus followed cancer breast as the leading site in Dibrugarh and Kamrup respectively. Lung was the leading site in Manipur and Mizoram. Cancer of the oesophagus led the list of cancers in Meghalaya. Cancer of the thyroid followed cancer breast in the two PBCRs at Kollam and Thiruvananthapuram in Kerala State.

The proportion of cancers associated with the use of tobacco is highest in East Khasi Hills district of Meghalaya being 69.3 and 43.0% for males and females respectively.

The data of the newer PBCRs that are being reported for the first time in this report are Nagaland, Meghalaya including Khasi Hills district, Tripura and Wardha. Among these new PBCRs, males in Nagaland show the highest age standardized rate (AAR) of 21.0/100,000 for nasopharyngeal cancer. East Khasi Hills district and Meghalaya State as a whole show the highest AAR in cancers of the oesophagus (in both males and females) and cancers of the hypopharynx and larynx in males. Since this data is being reported for the first time, it needs to be viewed with some caution as in the initial years of registry operation there could be some degree of over reporting. The international comparisons of the incidence rates of these sites of cancer reveal that the PBCRs at Meghalaya (especially East Khasi Hills district) and Mizoram (Aizawl district) and Kamrup in Assam have the highest AARs of cancers of these sites, particularly oesophagus, hypopharynx and larynx.

Hospital Based Cancer Registries and Patterns of Care and Survival Studies

Hospital Based Cancer Registries have a major role to assess cancer patient care and contribute to the PBCR. Follow-up of patients has always been a challenge in the Indian settings. Against this limitation, the project on Patterns of Care and Case Survival (POCCS) was commenced for three sites of cancer viz., cancer breast, cancer cervix and head & neck.

Translational Research including Software Development

The highlights of the software development for cancer registration and patterns of cancer patient care are listed below :

A. Patterns of Care and Survival Studies

1. Both Broad and Specific type of treatment given to patients are listed with sequence (order of broad type of treatment e.g. Surgery first, Radiotherapy second, etc.).

2. New Quality Checks are introduced and programming has been done for the same. The Report provides both error wise/case wise listing

3. Interim Survival Analysis has been done for pooled data through software programmes.

4. Follow up listing of combinations of all three anatomical sites of cancer (Cancer Breast, Cervix and Head & Neck cancers) is merged and sorted by pincodes.

5. Programming is done for getting follow up status based on particular date.
B. Hospital Based Cancer Registry Database Management

1. HBCRDM 1.0 has been installed in various centres and 29 centres are entering data in this software.

2. Programming is done for casewise quality control error listing.

C. Hospital Based Cancer Registry to Patterns of Care and Survival Studies

Data entry integration of HBCR and POCSS is completed for the sites Cervix, Breast and Head and Neck cancers.

D. Development of an Atlas of Cancer in Punjab State

1. Web-site has been created and online data capture is going on. A total of 105 centres have been registered and 52 centres are contributing data for the project. A total of 24,608 cases are transmitted to NCRP by the above centres.

2. Online and Dynamic e-Monitoring of Data Capture page has been developed for administration.

Development of the Population Based Stroke Registry Programme, India

The ‘Development of the Population based Stroke Registry Programme, India’ has commenced. The aim of the Population based Stroke Registry Programme (PBSR) is to generate data on the incidence of stroke that could lead to expansion of epidemiological, clinical and public health research in stroke in our country. A total of 51 centres have been registered under the project.

Development of Framework to Guide Registries

The following guidelines/manuals have been prepared for aiding individual centres to establish a PBSR and also in registration of stroke cases

(i) Note on ‘Identification of stroke cases’ (non-fatal and fatal; hospital and community).

(ii) Flow chart to guide Registration of Stroke cases in hospital and community in a PBSR.

(iii) Instructions to guide house visit while registration of stroke cases in a Population based stroke registry.


(v) Verbal autopsy questionnaire (adapted and modified from the WHO Verbal autopsy questionnaire).

Development of Population Based Diabetes Registry

A total of 101 medical colleges have been registered under the project.

Extramural Research

ONCOLOGY

Cancer Management Guidelines

A Task Force on review of cancer management guidelines has been initiated to review and understand the appropriateness of published literature on management of common cancers under Indian conditions. The reports on buccal mucosa cancer, stomach, cervix, soft tissue sarcoma, colorectal cancer and gall bladder have been compiled.

NEUROLOGICAL SCIENCES

Population Based Urban Stroke Registry

Well established population based stroke registries are lacking in developing countries. The objectives of this project are to develop feasibility for acquiring data on first stroke from Ludhiana city, Punjab and to find out the incidence, type of stroke and mortality through the population based stroke registry in Ludhiana city. The registry covers the geographical limits of Ludhiana city and a population of 9,35,925 in the age group of ≥18 years. All major hospitals and private scan centers and central unit of births and deaths were enlisted in Ludhiana city. In addition, the central vital registration unit in Ludhiana was included to obtain information on stroke deaths.

Out of 3126 patients identified in the year 2012-2013, 1497 were from Ludhiana city. The annual incidence rate is 140/100,000 (95% confidence
interval: 132.90, 147.09). The age adjusted incidence rate based on WHO standard world population is 181.67/100,000 (95% confidence interval (CI):172.44-190.89). The case fatality rate was 12.2%. A total of 3126 first ever stroke patients were identified. The mean age of the stroke cases was 58.9 ± 15 years. Majority of patients 66% had ischemic stroke. Limb weakness was the common presenting symptom in these patients. Hypertension was the most common risk factor.

In 833 patients, disability assessment using mRS was done at the time of discharge and 410 (49%) patients had a poor outcome (mRS>2) at the time of discharge and 7.2% died when followed up after 28 days of the acute event. The documentation of deaths and addresses at MCD level is inadequate. Even in the hospital death certificates the cause of death is not clear. The study identified issues which create difficulties in undertaking population based stroke registries in the country: reluctance to share data due to privacy issues; loss of medical records files from public hospitals in the city; difficulty in capturing minor strokes; frequent change of mobile numbers by subjects; poor documentation of deaths in municipal corporation, etc.

Population Based Rural Stroke Registry

The research project “Establishment of population based rural stroke registry - A pilot study” was initiated in a population of 293393 in 400 villages of Chinthamani Taluk, Chikkaballapur district, Karnataka during the period under report. The objectives of the study includes developing a methodology (including instrument development) for acquiring data on first stroke cases from selected health care institutions and from community in a defined geographical area of one Taluk in a rural setting; validating the methodology at the PHC level for its feasibility and sustainability; developing a plan of action for developing population based stroke registry in a rural area that could be expanded at the district level for larger integration at the national level. Data of first ever stroke cases reported during six months of recruitment indicate incidence of first ever stroke to be 55.9 per lakh population. Sixty eight percent of the cases from the community were male. Only 8.5% of the cases were reported from hospitals/health centers/practitioners of the area. Place of first contact to project team was home in 87.8% instances and 12.2% constituted those below 45 years. Only 34.2% had CT or MRI or both reports. Allopathy, Traditional medicine, Ayurveda constituted first contacts of care in pathway of care. Interestingly 78 out of 82 cases had approached traditional healers too. Lack of money (12.7%), symptoms being very serious (34.9%), lack of transportation (9.5%), no male member (decision maker) (14.3%), feeling that it is not worth spending time/money (11.1%), no faith in allopathy (23.8%), faith in other systems (11.1%) and other causes (15.9%) constituted reasons for not seeking health care within four hours of stroke. Important risk factors were hypertension, smoking, other forms of tobacco, alcohol, diabetes mellitus and family history of stroke.

Vascular Cognitive Impairment

A study on “Development and validation of a comprehensive clinical and neuropsychological test battery for use in the Indian context for patients with vascular cognitive impairment (VCI)” has been initiated at Nizam’s Institute of Medical Sciences, Hyderabad; Apollo Gleneagles Hospital, Kolkata and AIIMS, New Delhi. The study aims to develop a comprehensive clinical and neuropsychological test battery for use in the Indian context for literate and illiterate population across five languages and to validate the Indian VCI protocol in patients with VCI across five geographic regions. Adaptation of neuropsychological test battery in the Indian context is being carried out. The selected neuropsychological tests for Indian context are being developed in Telugu, Hindi, Malayalam, Kannada and Bengali. The batteries are being developed for both illiterates and literates.

DIABETES

ICMR-Indian National Diabetes Study (ICMR-INDIAB)-

The ICMR-INDIAB study (Phase I) has been completed and in the NE region two States viz. Assam and Mizoram have been surveyed. The data analysis is being carried out.

Registry of People with Diabetes with Young Age at the Onset

The Task Force project on, “Registry of People with Diabetes in India with Young Age at Onset,” is continuing at eight centres with aim to understand
magnitude of problem, disease pattern or types, geographic variation and incidence and prevalence rate of complications. Besides baseline data, the follow up data collection has been started at some centres. The training workshops regarding filling up proforma of participating centres are being held at regular intervals at the Collaborating Centres. The data sets from approximately 5,000 subjects have been collected which includes information on diabetes types prevalent, complications, types of treatment, etc. Draft report of phase I has been formulated. A majority of the subjects were with type 1 diabetes followed by type 2 diabetes. The neuropathy was reported as the commonest complication followed by retinopathy. Majority of the subjects were on insulin treatment. The phase II of the project was initiated in September 2012 and is ongoing at 10 centres.

**CHRONIC DISEASE HEALTH RESEARCH**

The Task Force project “A study on association of Oral Precancer with use of Pan Masala” started on 1st March 2010 for a period of two years, to generate evidence on the health effects of use of plain Pan Masala and establish the role of plain Pan Masala in occurrence of oral precancer. The study was conducted in Lucknow city, Uttar Pradesh in which 4,53,823 persons were contacted, and the final analysis was done on 4,02,669 persons (males and females aged 15 years and above). There were 108236 persons who reported using tobacco and nontobacco arecanut products, of which 1.1% were users of plain pan masala. The prevalence of oral cancerous lesions was found in 64 per 1000 users. The odds ratio for oral precancer for users of plain pan masala was 18.56 (95% CI 15.52-22.20).

The Task Force project “Development of a model for strengthening of existing health system to address Non Communicable Diseases in India” is ongoing at three sites; Ballabgarh, St. Stephen’s Hospital, Delhi and AHEAD, Delhi. The project aims at assessing the existing health system’s ability to carry out NCD screening, prevention and control activities. Under this project, 12 Peer educators from AHEAD, 25 community volunteers from AIIMS and 10 Youth volunteers from St Stephen’s hospital were trained. The health workers in all the agencies carried out NCD Risk Factor assessment of the adult members of the families allocated to them and counselled them to change risk behaviours. The workers also carried out a modified form of Community Health Environmental Scan Survey. Retraining of all Health workers was carried out and their knowledge was reassessed (using the same questionnaire which was used in the initial training. The workers were also trained to develop case studies from the families among whom they had conducted risk assessment and counselled.

**GASTROENTEROLOGY**

A multi-site Task Force project “Prevalence of celiac disease in indigenous populations of southern, northern, and north-eastern parts of India and identification of reasons for difference in its prevalence” is ongoing since 2011 for a period of two years at CMC, Vellore, AIIMS, New Delhi and Guwahati Medical College, Guwahati. The hypothesis to be tested in this study is that are there true differences in the prevalence of celiac disease between different parts of India and, that if such differences are found, can they be explained by differences in dietary cereal consumption pattern and/or HLA DQ2/8 prevalence between these populations. Community based screening in urban and rural population aged above 18 years will be done for serology of Tissue Transglutaminase (TtG) antibody using a representative sampling design. Questionnaire based information will be correlated to the serology and confirmatory intestinal biopsy results. A sample size of about 22,000 subjects (both men and women) will be screened. The interim results suggest a population based seroprevalence of celiac disease as 0.16-0.36% in southern part, 0.9% in north and 0.4% in eastern part.

The ICMR Task Force on Nonalcoholic Fatty Liver Disease (NAFLD) has five ongoing projects addressing various facets of NAFLD. The first year review has been done and guidance to the investigators was provided.

1. Impact of Chlorella on Non Alcoholic Fatty Liver Disease in C57bl/6j Mice Model of Hepatic Insulin Resistance by Differential Regulation of Pancreatic Endoplasmic Reticulum Kinase.

2. Development of an *in vitro* system to study the pathophysiology of Non-alcoholic Fatty Liver Disease (NAFLD) and Non-alcoholic Steatohepatitis (NASH).

3. Influence of genetic polymorphisms, clinical and biochemical parameters in determining...
susceptibility to nonalcoholic fatty liver disease in Indian overweight adolescents.

4. Impact of dietary fatty acids on the progression of nonalcoholic fatty liver disease in fructose induced model of steatosis – Role of adipose tissue insulin sensitivity and secretory function.

5. Vitamin A metabolism- a neglected paradigm in non-alcoholic fatty liver disease.

Another proposal on community based prevalence of NAFLD in Delhi and Chennai population is under consideration.

**OBESITY AND METABOLIC SYNDROME**

Under the MoU of ICMR with the Canadian Institutes of Health Research (CIHR), three proposals have been funded and are ongoing on the collaboration on Childhood Obesity.

(i) Understanding the determinants of adiposity among newborns of Indian ancestry in Canada and India: The South Asian Birth Cohort

Among three birth cohorts: rural India, urban India, and S. Asian from urban Canada, the objectives of this study are to understand the effect of diverse environments on the development of adiposity among newborns and the growing offspring during the first three years of age. Rural pregnant women weighed lesser and had lower BMI at recruitment compared to the urban women. No significant differences in the anthropometric measurements among the groups. The rural women had lower fat free mass as compared to the urban pregnant women.

(ii) Overweight and obesity in Asian Indian children in India and Canada: multi-level determinants, functional consequences and novel mechanisms; and

The overall goals of this school-based cross-sectional study are to describe the differences in body composition of Indian children and youth in three distinct settings which represent diverse environments: rural India, urban India and urban Canada, and to identify characteristics at the individual, family, school and community level that are associated with adiposity and its metabolic consequences. There were 13.8% in urban and 7.1% rural overweight/obese females and 16.1% urban and 6.1% rural overweight/obese males. Information on perceive barriers and food consumption were also studied.

(iii) Foundational Work for a Brain-to-Society Diagnostics for Prevention of Childhood Obesity and its Chronic Diseases Consequences

To examine the behavioral, body fatness/weight and nutritional risk for childhood obesity and associated complications (MetS, T2D, and CVD) at baseline and 2-year follow-up changes in the sentinel sample that is exposed to multi-level Whole-of-Society transformation. To examine the direct impact of individual differences in genetic and neuro-cognitive predisposition for responsiveness to lifestyle-shaping environmental exposure conditions (i.e. endophenotype for environment responsiveness) on behavioral, body fatness/weight and nutritional risk for childhood obesity (MetS, T2D, and CVD) and their moderating role on contextual differences in such environmental exposure conditions. To proceed to foundational (qualitative and quantitative) work for subsequent computational systems science modelling (systems dynamic) of the relationships between aggregate-level measures of lifestyle-shaping environmental exposure conditions prevailing in communities (where sentinel samples live) and the organizational and collective choices made by community-level stakeholders (including health, social, and economic inputs, processes, outcomes and underlying mechanisms and feedbacks) involved in focal WoS interventions in Canada (PAG) and India (IUI). (Societal-level BtS Diagnostic). To empirically validate a modular multi-level agent-based model of childhood obesity presently in development with theoretical and empirical development. Based on the demographic data, children (6-12 years old) are being identified in the study villages. Identification of eligible children (aged 6-12 years) as per study protocol from two clusters (6 villages) has been completed. There are 51 study tools (including 28 quantitative and 23 qualitative) for data collections have been developed. During the process of study tool development, focus Group Discussion (FGD) and in-depth interview was conducted with 10 mothers, 10 fathers, 10 children of 6-12 years age group and two FGDs with school teacher in the Palwal district. In Addition, informal interview
with community leader, health provider, ANMs and AWWs as well as district agriculture and Food supply officials and helps us to developed in-depth interview questionnaires as well as FGD guide. The operational manuals for study procedures and data collection have been developed.

The ICMR Task Force project “Childhood Obesity in India: A Multi-Center Study on its Measurement and Determinants” with reference to cardiometabolic risk factors” is ongoing in 5 sites viz. AIIMS New Delhi, NIN Hyderabad, NEIGRHMS Shillong, GMC Srinagar, MP Shah Medical College Jamnagar. The project aims to develop and validate simple measures of body fatness that correlates with cardio-metabolic risk factors among Indian children aged 6-18 years, identify determinants of childhood body fatness (societal, cultural, psychological, environmental and policy) that are operating at different levels in the diverse socio-cultural and geographical contexts of India and explore the influences of these determinants at family, community, school, regional level across five geographic regions of India and at national level, and the possible interplay between these factors. Qualitative data has been collected at all sites and is being analysed.

OTORHINOLARYNGOLOGY

Congenital Deafness

Two expert group meetings were held to discuss Congenital Deafness-Deaf and Dumb people in Dhakdai village of Doda district of Jammu. People in Dhakdai village of district Doda are becoming victims of a genetic disease, which renders them deaf and dumb. Hence, there was a recommendation to initiate a Task Force project on epidemiology, clinical and rehabilitation component and for detailed genetic studies for carrier state detection for the whole population of the village.

OPHTHALMOLOGY

Study on Anophthalmia/Microophthalmia

A Task Force Project on epidemiology of anophthalmia and or microphthalmia in children aged 0-5 years in selected districts of Bihar has been initiated from 1st March 2011 for a period of 2 years. In phase 1 identification and mapping of cases of Anophthalmia and or Microphthalmia from the primary health centres and subcentres of the districts of Bhojpur, Buxar and Rohtash has been done. In phase II, the risk factors (clinical and environmental) associated with this problem will be identified retrospectively using a case control approach. A questionnaire for this purpose has been finalized and data collection has been initiated. The findings reports so far show only fever due to some infection and might blindness as significant factor. TORCH testing of the mothers who had history of fever at the time of pregnancy of the affected child and vitamin A level testing was done in the mothers of cases and controls Forms for 23 new reported cases have been filled (since 9 were out of station and 7 were over 5 years) along with 22 children as controls. Together with this list and the earlier list of 36 cases and 39 controls, the study has enrolled a total of 59 cases and 61 controls. Preliminary analysis in these subjects has revealed that 78% were reported from Bhojpur district. 58% of these were males and 42% females. Mothers of the affected children were less than 40 years. 93% of the mothers had an educational status of below 10th class. 95% of the cases had gestational age between 38-42 weeks. Odds ratios (OR) were obtained for identifying risk factors for the disease. It was found that not attending ANC unit had an odds ratio of 1.95 with a 95% CI of (0.9476 to 4.0475, p=0.06). Fever had an odds ratio of 6.1 (95% CI (2.37-15.57, p=0002) and Night-blindness had an odds ratio of 30.76 (95% CI 3.96-238.65, p=0.001). Both these factors have a positive association with the disease. Analysis of trace elements revealed that more cases were proportionately deficient for zinc as compared to controls (Cases -72%, Controls - 50%). TORCH results have revealed that IgG antibodies for rubella, cytomegalovirus, herpes simplex virus 1 and 2 were detected in both cases and controls.

ORAL HEALTH

Dento-Facial Anomalies and Congenital Birth Defects of Face including Cleft Lip and Palate

Under this Task Force project, a pilot study has been initiated at three centers; Center for Dental Education and Research, AIIMS, New Delhi, Safdarjung Hospital, New Delhi and Medanta Hospital, Gurgaon. At present in the pilot phase more than 250 cases have been registered at the three centres. The data entry has been completed for all the three centres in the electronic format and analysis of the data is underway.