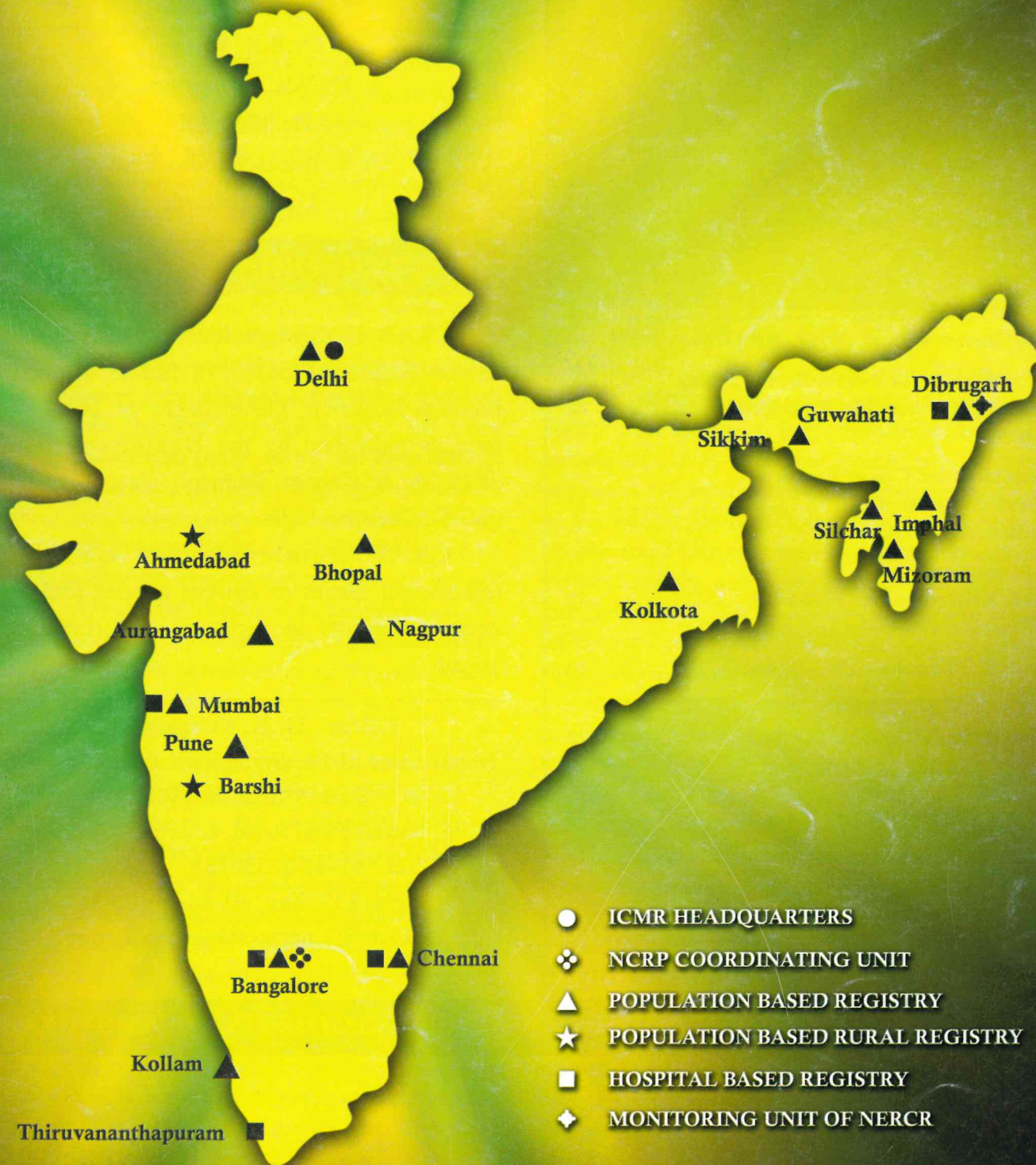


Cancer Registry ABstract

CRAB

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IN THIS ISSUE

Editorial

- Population-based cancer registration -
Data quality indices revisited.....** 1
R. Swaminathan

Articles

- Cancer Registration in North-East India -
A formidable Task Ahead.....** 2
M.S. Ali

- District Cancer Registry Kollam and
Karunagapally Cancer Registry, Kerala,
India: Transition from a local registry
to district registry.....** 5
P. Jayalekshmi, P. Sebastian

- NCRP Cancer Registration Software
Bhopal experience.....** 7
Atul Shrivastava

- What more can be done with NCRP data
from 1982 till date- PBCR perspectives.....** 10
B. B. Yeole

- Hospital Based Cancer Registry
Where do we stand?.....** 11
Ramachandra Reddy

In Memorium

- Dr. S. Krishnamurthi: 1919-2010.....** 12
V. Shanta; P. Gangadharan

- Dr. A.K. Prabhakar: 1942-2010.....** 14
C. Ramesh

- News items.....** 15

- Events in registries.....** 17

- Awards/Fellowships.....** 18

- Meetings/ Workshops attended.....** 19

- Projects under registries.....** 22

- Publications by registries.....** 23

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CRAB is the newsletter of the National Cancer Registry Program of Indian Council of Medical Research, Government of India. This issue is published by the Department of Bio-Statistics & Cancer Registry, Cancer Institute (WIA), Chennai, India.

CRAB features articles on cancer registration, issues of current interest and new items on events in registries and conferences ahead.

Editor : Dr.R. Swaminathan

Department of Bio-Statistics & Cancer Registry
Cancer Institute (WIA),
38, Sardar Patel Road, Chennai - 600 036.

Tel : 91-44-22350131 / 22350241

Ext 135; Fax : 91-44-24912085

E-mail : ncrp.crab@gmail.com

ALL ARE WELCOME TO SUBMIT ARTICLES, NEWS, COMMENTS, VIEWS TO CRAB

POPULATION - BASED CANCER REGISTRATION - DATA QUALITY INDICES REVISITED

- R. Swaminathan

Historically, most of the standard data quality indices for measuring the completeness of cancer registration were based on cancer mortality: death certificate notification (DCN%) and mortality to incidence ratio (MI%). Registries worldwide have been routinely reporting these as part of data quality assessment. Many times, these have been misconstrued in their applications: MI ratios have included deaths not certified as cancer in calculations thus reporting deaths-in-period as MI ratio while DCNs are seldom reported in preference to DCOs after trace-back activities. Thus, in India, when mortality data is clearly deficient in terms of either registration or certification or both, any index constructed on that basis would only be misleading.

Efforts that were undertaken to correct this anomaly in cancer mortality by matching the incident cancer cases with all-cause deaths enhanced the deaths-in-period. But, active follow up studies have clearly shown that up to 20% of deaths of cancer cases were still missed even after routine matching with all-deaths, a majority due to lack of identity data of either patient or deceased. Verbal autopsy of all deaths is an alternative, may be as a special study, but as a routine activity in population-based cancer registration, it is neither practical nor cost-effective. Hence, it would only be realistic if data quality assessment of cancer registration is focused more on morbidity cases than deaths in any developing environment.

The hallmark of any population based cancer registration lies in the unambiguous identification of duplicate cases. Otherwise, this would result in bloated incidence statistics. With no unique number existing for every citizen in India and most developing countries, adequate data on personal identity of patient (availability of names of relatives or caregiver, residential address, date of birth, etc.) is an important data quality index for optimal elimination of duplicates and hence should be routinely reported by registries.

Since cancer is not a notifiable disease and reporting is voluntary in India, active form of cancer registration is the best option. This places the onus entirely on the registry to



make arrangements with every potential source (like hospitals, path labs, etc.) for getting data from cancer cases on person identity, disease related, optional ones, etc. Data validity is the highest if based on both direct interview and medical records. If done from records only, the type of documents perused (like nominal register, computer report or full medical record) is important since the degree of validity would vary upon the adequacy of information on person identity and cancer (incidence date, site, morphology, etc.). Hence, basis or mode of data collection is an important data quality index of data validity and should be routinely reported.

In general, coverage of more sources implies more completeness. Hence, number of sources per case is a viable data quality index of both completeness and validity. Completeness of details among mandatory variables of cancer registration (like age at diagnosis, sex, incidence date, basis of diagnosis, etc.) is another useful tool. Most valid basis of diagnosis as microscopically verified (MV%) is one of the known important data quality indicator that is routinely reported by all registries.

In addition to DCO%, MI% and MV%, cancer registries must strive to report the suggested newer data quality indicators on a routine basis. Such operational research activities would help in augmenting or modifying the case-finding mechanisms to achieve desirable levels of data quality.

CANCER REGISTRATION IN NORTH-EAST INDIA- A FORMIDABLE TASK AHEAD

- M.S. Ali, Dibrugarh PBCR and HBCR

The primary function of a cancer registry is to maintain a register of all cancer cases occurring in a defined population collected continuously and systematically from various data sources. Cancer registration is a means to a purpose and not a purpose in itself. Apart from its main objective to assess the nature and extent of cancer problem in the community, it has some very important purposes: to study the etiological factors at work, to assist in the control and prevention of cancer in the population, to assess the efficacy of treatment methods in use, to provide a base for organizing public awareness campaign and to study the temporal variations.

The cancer registry has a pivotal role in cancer control. Realizing the importance and necessity of cancer registration in planning and evaluation of National Cancer Control Program in India, the ICMR initiated the National Cancer Registry Program (NCRP) in 1981. Three PBCRs at Bombay, Bangalore and Madras were commissioned and extended to cover two more urban areas of Delhi and Bhopal and one rural area of Barshi. Until 2003, the NCRP of ICMR comprised only six PBCRs covering a population of only 3.5% of the country.

In order to assess the geographical patterns of cancer in the country, the Coordinating Unit of NCRP, with the help of WHO, launched in 2001, a unique and innovative project, "Development of an Atlas of Cancer in India". The

first report of this project for the year 2001-2002, threw open, a vistas of incidence and pattern of cancer in areas hitherto unknown. The report had identified the hot spots of high incidence, recognized belts of geographic areas with specific types of cancer and as a fallout of this project, six PBCRs under the banner, 'North East Regional Cancer Registries (NERCR)' have been setup in four states of Assam, Manipur, Mizoram and Sikkim in North-east (NE) region in 2003. The NE region is often described as an anthropologist's paradise because of its numerous cultural and linguistic tribes and races. All the major races of the world - the Austro-Asiatic, the Indo-Aryan, the Indo-Tibetans, the Mongoloids and the Negroid - all have mingled to make the fascinating NE region. There are more than 120 major tribes in the region each having its own language/dialect, culture and food habits.

The area and the urban and rural population of the NE region are shown in Table 1. The area of the NE region is 2,62,205 km² and the population is 38 million as per 2001 census report, which is about 3.8% of Indian population. Sikkim is the smallest state both in terms of area and population, whereas Arunachal Pradesh is the largest in terms of area and Assam is the largest in terms of population. The coverage of 6 PBCRs under NERCR is about 7 million which is only 18.6 % of the total population of the region. The three registries in Assam comprised

Table 1 : Area, urban and rural population of NE India (as per 2001 census)

States	Area (sq.km)	Urban	Rural	Total
Assam	78,438	34,39,240	2,32,16,288	2,66,55,528
Arunachal Pradesh	83,743	2,27,881	8,70,087	1,09,7,968
Manipur	22,327	7,03,076	15,90,820	22,93,896
Meghalaya	22,429	4,54,111	18,64,711	23,18,822
Mizoram	21,081	4,41,006	4,47,787	8,88,793
Nagaland	16,579	3,42,787	16,47,249	19,90,036
Sikkim	7,116	59,870	4,80,981	5,40,851
Tripura	10,492	5,45,750	26,53,453	31,99,203
Total	2,62,205	62,13,721	3,27,71,156	3,89,84,877

Kamrup urban, Dibrugarh district and Cachar district and cover a population of 13.5% of the population of Assam while Manipur, Mizoram and Sikkim are statewide registries.

The accumulated data from these registries for the year 2006-2007 have revealed some startling results. Table 2 shows the highest Age Standardized Rates (ASR) in selected sites for both sexes recorded in different registries among the existing PBCRs in NCRP. Out of the 15 selected sites, the NERCR have recorded the highest ASRs in 11 sites among males and 10 sites among females.



Table 2 : Highest Age Standardized Rates (per 100,000 persons) for selected sites in different registries by sex (2006-2007)

Male			Female		
Site	Registry	ASR	Site	Registry	ASR
Stomach	Aizwal Dist	52.3	Breast	Bangalore	33.8
Lung	Aizwal Dist	36.5	Lung	Aizwal Dist	32.8
Oesophagus	Aizwal Dist	30.4	Stomach	Aizwal Dist	23.8
Mouth	Dibrugarh urban	19.2	Cervix	Aizwal Dist	21.6
Hypopharynx	Kamrup urban	15.7	Oesophagus	Dibrugarh urban	21.6
Larynx	Cachar Dist	14.0	Gall Bladder	Dibrugarh urban	17.1
Prostate	Delhi	11.5	Ovary	Dibrugarh urban	13.5
Tongue	Bhopal	9.1	Liver	Aizwal Dist	7.2
Liver	Sikkim	7.3	Mouth	Bangalore	6.0
Rectum	Aizwal Dist	7.1	Rectum	Aizwal Dist	4.8
NHL	Imphal West	6.4	Corpus Uteri	Bangalore	4.8
Bladder	Delhi	6.3	Colon	Bangalore	3.7
Nasopharynx	Aizwal Dist	5.6	Tongue	Th'puram	3.6
M.L	Aizwal Dist	5.3	Larynx	Cachar	3.2
Colon	Bangalore	4.1	Hypopharynx	Dibrugarh urban	2.9

Table 3 shows the Crude rates (CR) and ASRs per 100,000 population of all cancers together in different registry areas. CRs which indicate the cancer load in an area have been found to be the highest in Aizwal district of Mizoram in both sexes (M-150.8, F-120.7) followed by Dibrugarh urban (M-123.8, 120.7). Moreover, the proportion of tobacco related cancers in both sexes have been found to be the highest in Dibrugarh district followed by Kamrup urban and Cachar district, all in the state of Assam. High incidence rates of certain types of cancer and patterns, different from the rest of India, have already been observed in one-fifth of the population of NE region covered

under NERCR. It would not be out of question to anticipate emergence of few more surprises from the uncovered four states of Tripura, Meghalaya, Nagaland and Arunachal Pradesh. To establish demographic cancer registries covering the states of Meghalaya, Nagaland and Arunachal Pradesh, in particular, will not be feasible at this stage because of inadequate medical facilities in majority of areas, non-availability of reasonably stable referral system and remoteness of vast areas from the nearest health centre with concomitant problems of communication and transport. Apart from geographic variation, ethnic groups that live in the same area may exhibit differences in incidence and



pattern. NE region which comprised more than 120 ethnic groups with distinct life style may provide excellent descriptive statistics on cancer for postulating a new hypothesis of aetiological importance and significance.

The value of a cancer registry depends on the quality of the data rather than its volume and also the extent to which the data are used in research and health service planning. It is, therefore important that the registration of the cases should be as complete as possible. More complete cancer registration is a continuous and long term operation. By its nature, the registry will expand and require increasing resources.

Table 3 : Crude Rate (CR) and age standardized (ASR) incidence rates per 100,000 persons of all cancers together in different PBCRs

Registry	Years	Male		Female	
		CR	ASR	CR	ASR
Barshi	2006-07	45.9	50.3	49.5	51.8
Bengaluru	2006	74.7	108.5	101.6	133.5
Bhopal	2006-08	71.8	106.4	77.1	106.8
Chennai	2006	100.9	113.4	114.8	123.9
Delhi	2006	76.6	125.1	84.2	119.7
Mumbai	2006	73.0	103.1	96.3	111.4
Kolkata	2006	84.4	80.1	96.4	90.0
Dibrugarh Dist	2006-07	74.3	109.0	55.4	78.6
Dibrugarh Urban	2006-07	123.8	170.0	120.7	155.7
Dibrugarh Rural	2006-07	57.5	85.9	49.6	69.6
Kamrup Urban	2006-08	106.8	156.7	81.8	120.0
Cachar dist	2007-08	93.4	130.9	59.2	77.3
Mizoram State	2006-07	108.5	167.5	96.9	144.9
Aizwal Dist	2006-07	150.8	239.2	132.2	197.4
Mizoram State-excl. Aizwal Dist	2006-07	84.4	129.2	76.2	114.4
Sikkim State	2006-08	57.8	88.5	61.3	101.1
Manipur State	2006-07	50.9	69.4	54.2	70.1
Imphal East Dist	2006-07	43.4	57.4	51.1	63.3
Imphal West Dist	2006-07	87.6	109.8	101.7	115.9
Ahmedabad Rural	2006-07	52.9	70.0	43.8	49.9
Ahmedabad Urban	2006-07	62.3	82.7	57.8	67.3
Aurangabad	2006	40.5	66.3	42.9	64.0
Nagpur	2006	70.9	87.9	79.9	90.6
Pune	2006	56.0	80.5	67.2	84.3
Thiruvananthapuram	2006	123.2	119.5	116.8	104.7
Kollam	2006	116.9	111.5	97.6	85.7

material support as time goes by. It is therefore vital to ensure that the administrative and financial plans make provision for its continuance and expansion.

The magnitude and patterns of cancer observed in three PBCRs in Assam are more or less indicative of the prevalent scenario of the state because of similarity in physiographic and population composition. A PBCR has recently been started at Agartala in Tripura state but the results are not yet known. To start and sustain demographic registries in the remaining three states in NE region which are entirely mountainous except for thin strips of flat land and lacking minimum requirements in health infrastructure would be a challenge.

At present, there are 23 PBCRs operating in the whole of India both within and outside NCRP network covering

approximately 7% of total Indian population. The rural population coverage within these PBCRs is only about 7.4 million (including the rural population covered under NERCR) which is approximately 2% of the total rural population of India. In India more than 70% population are rural and have lifestyles quite different from their urban counterparts. A realistic estimate of the cancer load in the country is therefore possible only if the vast uncovered urban and rural areas are brought under the umbrella of cancer registration.

Efforts should be made to initiate cancer registries in a phased manner in states where cancer registries are not in existence. Cancer registration in NE India apparently seems to be a unique opportunity but operationally would be a formidable task requiring concerted efforts from all quarters.

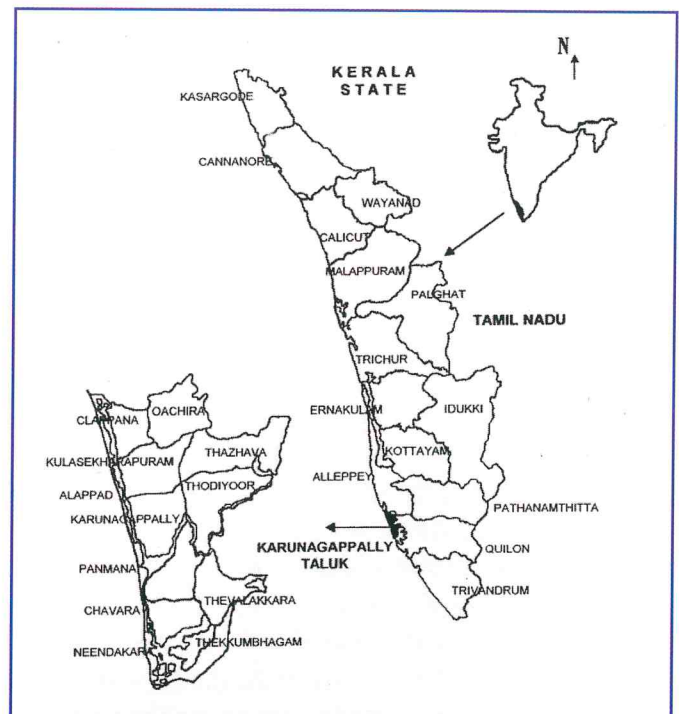
DISTRICT CANCER REGISTRY KOLLAM AND KARUNAGAPALLY CANCER REGISTRY, KERALA, INDIA: TRANSITION FROM A LOCAL REGISTRY TO DISTRICT REGISTRY

- P. Jayalekshmi, P. Sebastian, Kollam registry

Karunagapally cancer registry was started in 1990 by Regional Cancer Centre, Trivandrum, for a special purpose as a basic part of an important study of high natural radiation and its association with cancer occurrence among the people residing in Chavara, Neendakara coast in Kollam District of Kerala, India. There had been persistent concern voiced in the State Assembly, Lok Sabha and Rajya Sabha repeatedly for several years about the increased occurrence of cancer among people exposed to natural radiation present in the coastal sands of Karunagapally taluk. Thorium in the sand was the source for radiation. Scientifically, exposure to radiation has been a known cause for cancer. Such a concern, coupled with scientific demand, initiated the cancer study in 1990.

The main study objectives set forth were: (1) What is the cancer incidence in the radiation belt area in Kerala? (2) Is it different from other population groups? (3) What is the pattern of cancer in the area? (4) Is it different from other areas? (5) Are the incidence and pattern related to background radiation?

From the objectives set, it was essential to evaluate the incidence of all types and site-specific cancers in population to gauge the load of cancer as well as to compare it with



Map of Karunagapally taluk, Kollam district, Kerala state, India

experience from other areas. Further, to correlate the incidence with radiation levels, description of the population exposed to radiation was obtained and evaluated

against cancer occurrence. The cancer study covered the whole of Karunagapally taluk and attempt was made to enumerate all the 3,83,514 individuals listed as per the 1991 census. This population was followed as a 'Cohort'.

When we organized the registry in a rural area like Karunagapally, we faced a lot of problems. Many innovative procedures were adopted for locating cancer cases. Medical infrastructure and health awareness were very minimal and also there was no dedicated cancer detection facility or treatment facility in this area. These facilities were 100 kms away from this area. We had started cytology detection facilities and oncology services considering the need of early cancer detection and cancer care services for the people. This enhanced the cooperation of the public as well as the medical community, which contributed to the success and cooperation to the registry to a great extent. Systematized field visits coupled with the built-in program for patient services helped to stabilize the cancer registry operations. The preliminary analysis of the study does not show any increase in cancer incidence in Karunagapally taluk. The study is continuing.

However, Cancer Atlas Project 2001-2002 initiated by NCRP-ICMR started covering the whole of Kollam District, which indicated a high incidence of cancer in Kollam District with a minimum Age Standardized Rate (ASR) for men as 106.5 (9th among all PBCRs) and 90.7 for women (17th among all PBCRs).

Based on this report, a proposal to start a cancer registry covering the whole of Kollam district was considered by ICMR and thus the District Cancer Registry Kollam was initiated in the year 2006. As Karunagapally Cancer Registry was in existence for more than a decade, the work force was expanded to cover the entire district. Initially we started with 60 sources of registration and now more than 300 sources are covered for data collection. Further, the registry area also received the services rendered with local self government support from 2001 onwards and fund support from government of Kerala in 2010. We have set up a full fledged cancer care centre with cancer detection facilities and supportive care to serve the community within the registry area in Kollam District. People are very keen to get oncology services. Public awareness classes, cancer detection camps in fields, professional reorientation in cancer control, palliative and supportive care including home care services to cancer patients are rendered by a dedicated team of staff members. The special feature of



Kollam district is that the western boundary was the coast and the eastern boundary was covered by high hills plantations. About 12.6% of the population was scheduled tribes and scheduled caste. A majority of people are fishermen, coir workers and plantation workers.

Our experience in working with a rural population is unique. The findings from the registry helped to evolve dedicated cancer control and cancer care services in rural area with public and governmental help. Patient follow up rate was optimized, data quality improved, excellent rapport that was maintained in the community enhanced the acceptability of registry operations.

The registry program is ongoing with the support and cooperation of a number of persons. Thanks are due to M Krishnan Nair and Dr .B. Rajan, former Principal Investigators of the registry. It is also our pleasure to acknowledge the technical help rendered in the beginning and now by Mr. P.Gangadharan, former Co-principal Investigator of the registry. The sincere and unstinted support of the RCC, Thiruvananthapuram doctors and the professionals are greatly acknowledged. For the transition of a local registry to a district cancer registry we are deeply indebted to NCRP-ICMR, Dr. Nandakumar and staff of NCRP.

Lessons learnt

Any cancer study planned should have a built-in program for patient services, especially when it is embarked in an area without a dedicated cancer centre.

NCRP CANCER REGISTRATION SOFTWARE - BHOPAL EXPERIENCE

- Atul Shrivastava, Bhopal PBCR

Cancer registries all over the world are in pursuit of developing new techniques and tools to achieve high quality of cancer registration. The development of these tools or mechanisms are aimed for better coverage of data collection, accuracy in record linkage, standardization in data organization and uniformity in reporting. In recent times, role of computers and software has become major parts of these developments.

Working of Cancer Registries under NCRP

The main objective of the National Cancer Registry Program is to generate reliable data on the magnitude and pattern of cancer morbidity and mortality in various segments of the population of different regions of the country. Thus, the important features of a PBCR are the reporting of cancer morbidity and mortality pattern in its population. To generate these patterns, active registration of cancer cases is done by the cancer registries. The recorded information on cancer cases is then scrutinized to ascertain completeness and consistency of data. Cross-matching and linkage of records is a crucial operation of a cancer registry which ensures completeness of details and elimination of duplicate registration.

Incidence and mortality data are entered on computers and sent to the coordinating unit (COU) of NCRP. At COU, the data is checked again and list of errors is sent back to the registries. Errors are rectified by the registry and sent to the coordinating unit again. Every registry uses its own software for data entry resulting in different formats of data. Therefore to attain standardization of data and uniformity in reporting, data of all the registries under NCRP is converted into a common format. The standardized data is then analyzed for generation of annual reports of NCRP.

Development of PBCRDM Software

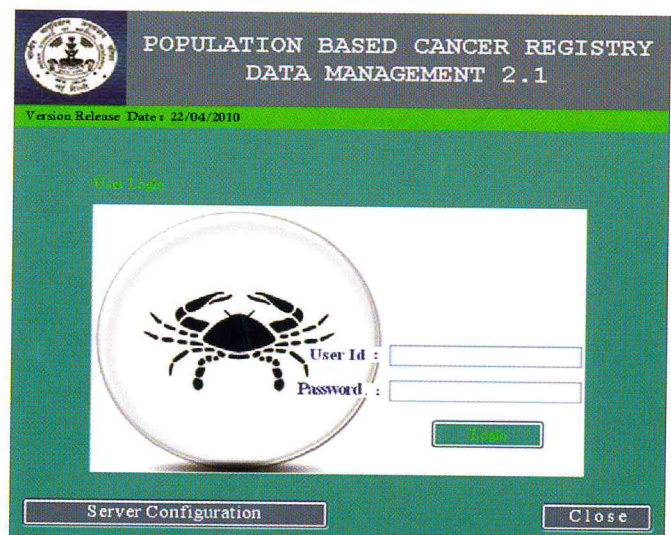
Due to increasing number of cancer cases and lack of software which could perform data validation at the registries itself, there was a considerable delay in submission of data. Lot of time was also lost at COU in rechecking and correction of the submitted data, converting the data of various registries into a standardized format. Almost 36

months of time was utilized from collection to submission of data and generation of NCRP reports.

Aimed to overcome disparity in data formats, errors in data entry and delay in data submission by the registries, NCRP has developed a software called PBCRDM.

The software is designed to facilitate every process of the working of a registry and its judicial use ensures a high quality of cancer registration with faster finalization of data.

PBCRDM



The main features of the software are as follows:

1. Data Entry and Data Editing;
2. Data Processing/Linkage;
3. Report Generation;
4. Data Handling

The software has been tested at Bhopal and Mumbai registries. The Bhopal PBCR has utilized the software for data entry, quality checks, listing of potential duplicates and listing of potential matches between incidence and mortality data.

Data Entry and Data Editing

Incidence and mortality data entry and editing are simple with drop-down lists of all variables and the software is aided with Topography, Morphology and ICD-10 dictionary. This reduces the data entry errors. Use of mandatory fields facilitate in real-time checks for

completeness of data during the data entry. During the data entry/editing each record is evaluated for all the possible checks for range, unlikely values, consistency in recording and coding along with family checks. All the records are also subjected to duplicate checks. Alerts for the errors and potential duplicates are displayed so that the user can either take an immediate action or mark it suspected. At the time of data entry, a record can only be saved if it clears all these checks or if it has been marked suspected.

Retrieving of records for editing and updating, is extremely convenient and flexible, as the records can be retrieved with multiple search options. Search for records can be made based on Record No./Registration No./Hospital No./Part of Patient's Name/Site. Mortality data also undergoes similar checks to those in the incidence data entry. Simultaneous creation of mortality records can also be done from incidence data for cases with details of death. Thus, the software reduces the time required for entry of a majority of mortality data. Linkage of incidence and mortality data can be done at the entry level by assignment of mortality number in incidence record and incidence number in mortality record. This is helpful if matches are identified prior to entry. **Thus the data entry/editing are faster, complete and devoid of major errors.**

Data Processing

The software is equipped with a powerful processing section where the entered data can be processed for detection of errors in the records, Elimination of duplicate cases and matching/ linkage of mortality data with the incidence data.

Checking of Data

The entered incidence/mortality data can be subjected to a check program which generates list of records with inconsistencies. Thus, regular checking of records helps in timely corrections of the errors.

Checking for Duplication

Duplicate verification of incidence and mortality data is the most powerful application of the software. The software scrutinizes the data for duplicate registration with multiple predefined checks which include fixed combinations of the identifying variables such as name of patient, father, mother and relative; sex; site of tumor (ICD-10); hospital registration number; PIN code. The application is also provided with a flexible option wherein the user can define the combinations of various identifying variables with/without fixing the length of variable. After the scrutiny



of records, list of potential duplicate cases are generated these records are displayed in a vertical grid such that the records are listed side by side. In the vertical grid, the record can be edited/updated and deleted with notification (tagging) of the registration number of the duplicate case in the retained record and vice-versa. The deletion can only take place after tagging of record. **For any registry, the manual elimination of duplicate cases is tedious and time consuming, the use of software helps in faster and precise processing of data for duplicate checking.**

Matching

Matching of mortality cases with incidence cases is also done using predefined and flexible options similar to the incidence data duplicate checking. The listed records can be edited/ updated and matched with notification (tagging) of the registration number of the matched mortality case and vice versa. The special feature of the software is that it creates DCOs for the unmatched mortality cases. Thus, after the matching process is over, one can transfer the unmatched cases as DCOs to the incidence data.

Generation of reports of possible errors

Reports are generated based on the results of data processing for quality, duplicates and mortality statistics and are listed as follows: (1) Records with Missing value unknown sites, unknown variables, range, consistency family and unlikely errors; (2) Probable duplicates and matches; (3) Deleted records list; (4) Matched death record list.

Data handling

To ensure data protection, the software can be only accessed by authorized user as it is protected by password. Data handling is easy and the data can be exported to CSV format. Backup of data can be taken at any given time. In case of any loss of data, the data can be easily restored from the back-up.

Use of the software by PBCR Bhopal

Bhopal registry has utilized the software of entering and processing of records for the year 2007 and 2008. The software was installed on 1st July 2008. The observations made by the registry after the use of software are given in Tables 1-4.

Key observations made by Bhopal PBCR

A standardized data format is evolved. Data validity at registry level has been made possible. Data entry and editing

Table 1. Percentage of Quality Indicators

	2006 (%)	2007 (%)	2008 (%)
Primary Site Unknown	3.8	3.1	2.4
Microscopic Verification	86.4	86.5	90.3
Clinical Details	64.5	71.6	78.8
Details of Treatment	63.3	67.9	75.8
Demographic Details	69.5	75.6	85.9
DCO	4.8	4.3	2.4

Table 2. Time for Submission of data

Year	Date of Data Submission	Time Taken
2005	30 th September 2007	21 Months
2006	30 th September 2008	21 Months
2007	30 th May 2009	17 Months
2008	31 st October 2009	10 Months

Table 3. Proportion of Mortality cases created by incidence records

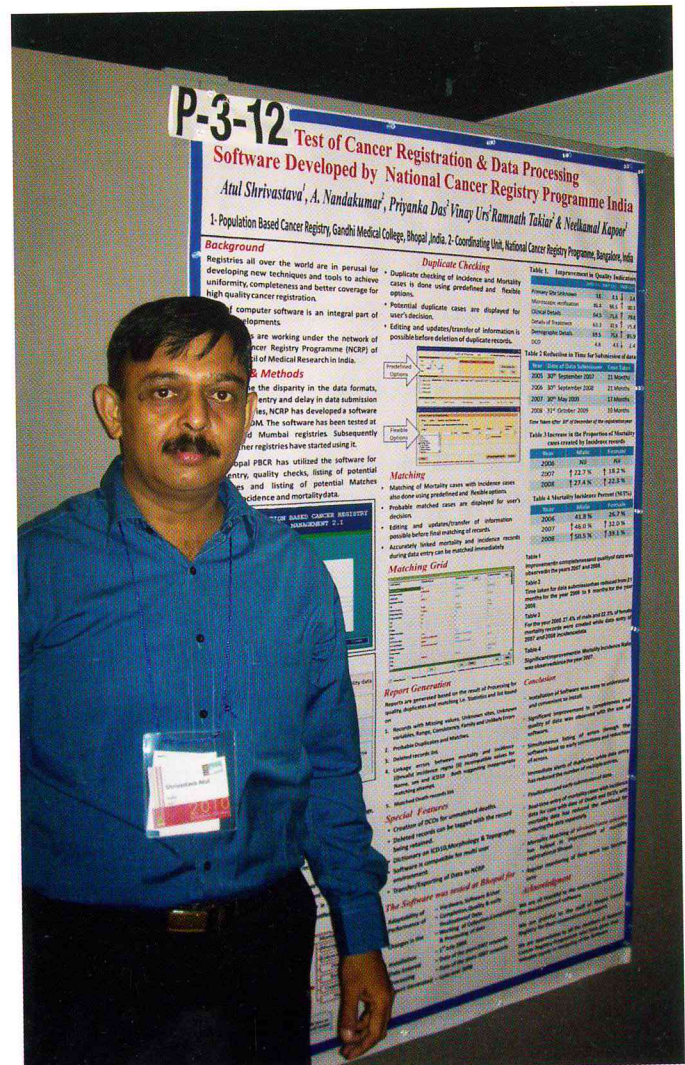
Year	Male	Female
2006	Nil	Nil
2007	22.7%	18.2%
2008	27.4%	22.3%

Table 4. Mortality (all causes) Incidence Percent (M/I%)

Year	Male	Female
2006	41.8%	26.7%
2007	46.0%	32.0%
2008	50.5%	39.1%

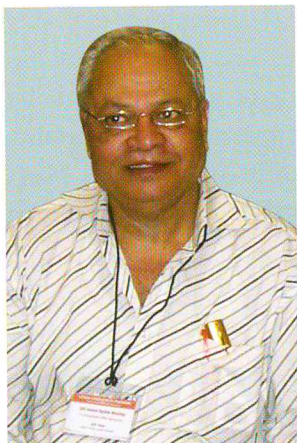
have improved and become easy. Timely correction of data validity has resulted in the reduction in proportion of primary site unknown; improvement in microscopic verification; improvement in availability of demographic details; improvement in clinical and treatment details. The handling of DCOs in the incidence data from unmatched mortality data has improved and real-time entry of mortality cases with incidence data for cases with date of death has reduced repetitive work. Matching of all cause mortality data has resulted in the improvement of mortality registration (increase in deaths-in-period). Most importantly, time taken for submission of data has reduced from 21 months to 10 months.

It can be said with overwhelming confidence that the NCRP Cancer Registration Software is a "One stop solution to PBCRs" under NCRP. This software (by NCRP-COU) is a boon to us as CanReg (by IARC) was to PBCRs outside India.



WHAT MORE CAN BE DONE WITH NCRP DATA FROM 1982 TILL DATE - PBCR PERSPECTIVES

- B.B. Yeole, Mumbai Cancer Registry



The Indian Council of Medical Research initiated the National Cancer Registry Program (NCRP) in 1981, establishing three population-based cancer registries (PBCR), one each at Bengaluru, Mumbai, and Chennai and three hospital-based registries (HBCR) in Chandigarh, Dibrugarh and Thiruvananthapuram in 1982.

This program has seen continuous expansion over the years: establishing HBCRs at Bengaluru, Mumbai and Chennai in 1984; PBCRs at Delhi and Bhopal in 1986, at Barshi in 1987 and from 2001 at various states in North-east India including Assam (3), Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Other existing PBCRs at Poona, Nagpur, Aurangabad, Kolkata, Karunagapally and Ahmedabad have been augmented and included since 2004.

NCRP has generated authentic data on magnitude and pattern of cancer through these PBCRs for about three decades now. This data has been aptly summarized in the form of consolidated reports and are made available periodically as print copies and in ICMR website. The data generated by NCRP can be utilized in many ways depending on the specified interest of public health authorities, hospitals, medical colleges and individual physicians. Public health authorities utilize this information to estimate relative incidence of cancer and its site distribution in order to establish cancer control activities in different parts of the country. Hospitals use such information for obtaining specific information for research on cancer patients within their institutions. Doctors in private practice utilize the NCRP data to evaluate the results of their treatment methods to assess the prognosis and survival possibilities of their patients. The idea of bringing out site-specific monographs on common cancers is a very good value addition for dissemination of comparative as well as contemporary information for specific research needs.

NCRP itself can further use the existing data in many ways. Firstly, the International Agency for Research on Cancer (IARC) publishes every five years, a compendium of worldwide cancer statistics called "Cancer Incidence in Five Continents (CI5)". This data is also made available for online data analysis to generate user-generated reports. On similar lines, "Cancer in India" may also be published by NCRP and online analytical capability provided for increased usage of data generated by PBCRs in NCRP network. Secondly, varying patterns of cancer incidence and mortality in rural and urban India can be estimated separately and compared using this voluminous data. Thirdly, IARC also releases an online tool called GLOBOCAN concerning global burden of cancer based on CI5 series. As a prelude to this, NCRP has already produced a wonderful report on ASR trend observed in different PBCRs. On top of this report, NCRP should embark upon studies on overall prediction and site-specific trend using contemporary methodology and approaches like Age-Period-Cohort modeling. It would be worthwhile to have online analytical capability, especially for knowing cancer burden in different regions in India.

This voluminous data has provided valuable basis for translational research. As a priority, multi-centric population-based survival studies can be carried out by granting financial assistance to the registries. The result may be published on similar lines as International Agency for Research on Cancer does on cancer survival in developing countries. Secondly, to know the etiology of various sites of cancer, multi-centric population-based molecular epidemiological case control studies can be planned at least for major sites.

Population Based Cancer Registries can provide the needed framework for monitoring or evaluating interventions like health education, legal action and other appropriate measures for primary prevention (for cancer where cause is known, particularly related to tobacco, food alcohol, etc.) and interventions like visual tests or clinical examination for secondary prevention (screening or early detection) of cervix, breast and oral cancers.

HOSPITAL BASED CANCER REGISTRY WHERE DO WE STAND?

- *K.Ramachandra Reddy, Bengaluru PBCR & HBCR*

Hospital Based Cancer Registry (HBCR) is a repository of demographic, clinical, pathological, therapeutic and end result data of patients with malignant disease attending a particular institution or group of institutions (Krishnan Nair and Sankaranarayanan, 1987). The main purpose of hospital based cancer registry is to contribute for patient care by providing the requisite information on patients with cancer, relating to the magnitude, type of cancers by topography and histology, the stage of the disease, treatment details and outcome. Within the hospital, a registry is often considered to be an integral part of the hospital's cancer control program or healthcare delivery system. Since HBCR lays stress on quality, there will be general improvement of hospital medical services and histopathology diagnosis. HBCR data could serve as the input parameter for the patient load model which forecasts future demand for services in a given hospital or community. The objectives of HBCRs (MacLennan et al., 1978; Young JL, 1991) in general are: Assess patient care; Participate in clinical research to evaluate therapy; Provide patterns of cancer in the area; Help plan hospital facilities. More specifically,

- ▶ To contribute to active follow up of the cancer patient
- ▶ To carry out survival studies
- ▶ To undertake epidemiological research through short term case control studies
- ▶ To clinical down-staging of selected sites of cancer
- ▶ To help assess quality of hospital care and cancer services in the covered area and
- ▶ To contribute to the PBCRs

Even though the NCRP of ICMR established HBCRs way back since 1982 with the objective of achieving the above goals, we have to question ourselves that have all the registries achieved these goals even after almost three decades of functioning? For example,

- ▶ Is there a uniform criteria in assessing clinical extent of disease across the registries?
- ▶ Is there a uniform definition of what is curative intention of treatment and what is palliative intention between the registries?



- ▶ Are they not varying from centre to centre and one treating doctor to another?
- ▶ Is there a common treatment protocol? We can find more number of surgically treated cases at one centre compared to other centre and more number of cases treated with chemotherapy at one centre than at others for certain tumors?
- ▶ Drop outs of patients in various stages such as before confirmation of diagnosis, after confirmation but before commencement of treatment, during treatment and after completion of treatment are the major threats for a good follow-up study. These factors would vary from centre to centre.
- ▶ Many factors would contribute for the dropout rates doctor/ patient relationship, time taken to initiate treatment, facilities available at a centre, cost and quality of treatment and so on.
- ▶ In the absence of electronic records, missing of manual case records results in under registration of cancer cases in HBCR. In this connection, computerization of records will be a major advantage.

Apart from the above, incomplete case records pose a major problem for the HBCRs to undertake or complete any kind of meaningful research studies. A good medical records department will be a major boon for an HBCR.

The five HBCRs under NCRP namely Mumbai, Bangalore, Chennai, Thiruvananthapuram and Dibrugarh centres have contributed a total number of 811,165 cases from 1984 through 2006 (the data of Mumbai centre being

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constitutes 8% of all cancers in government hospitals ...” The minister was dumbfounded. When the cancer unit was closed due to indifference among the officialdom, Dr. Krishnamurthi decided that it would be better to set up a separate cancer facility, the Cancer Institute (WIA). During one of the many meetings that he addressed, he shared certain fundamental truths, which typifies his perception on human values that set the ethos of the functioning of the Cancer Institute today. I quote a paragraph from his address to the Hon. Medical officers Conference on Cancer

“There is enough wealth in our nation to perpetrate an evil and vicious caste of high priests; there is generosity enough to thrust memorials on men whose very lives were lived to demonstrate their emptiness; there is enough humanity to make a fetish and fashion of Ahimsa, but there is neither money nor wealth nor generosity nor humanity to build a home for the poor sufferers of cancer. I think it is time we transferred a little of our Ahimsa from our books into our lives”. He had already considered palliative care way back.

Dr. Krishnamurthi's faith in selfless work was total. When we were evicted unceremoniously from the present campus in January 1976 for flimsiest of reasons, he told me, “We will return” quoting Douglas McArthur's immortal words at Pearl Harbor. We did return in May 1977.

Dr. Krishnamurthi had very strong convictions about medicare and education. In regard to medicare, he could never accept class differences and so the ethos at the Institute has always been “Service to all irrespective of social or economic class”. The other was the conviction that science and knowledge know no frontiers. The Cancer Institute (WIA) is the only institution in the country where the selection for superspeciality training is on a national basis and purely on merit. The students do not pay any fee. His passion for research was unsurpassed and his driving mantra had been “Today's Research is Tomorrow's Treatment”.

I would like to recall some of the major contributions to cancer care, cure and control that have emanated from the Institute under his total guidance like the introduction of multimodal approach in cancer treatment in 1960s which today is the state of art in oncologic care worldwide; the introduction of the concept of oncology and superspeciality training in surgical and medical oncology, which fructified in 1982 after nearly 10 years of struggle. Looking back after 55 years, we had often wondered what made us to go on under such hard conditions. It continues even today. It was

probably the stubborn refusal to accept defeat, to the faith that our patients had in us, the belief that having undertaken a mission, we have to continue and follow the tenets of the Bhagwat Gita “Action is thy duty, fruit is not thy concern”.

Dr. Krishnamurthi dreamt of a world: I quote from Rabindranath Tagore's “Gitanjali”

- ▶ **Where the mind is without fear and the head is held high**
- ▶ **Where knowledge is free**
- ▶ **Where the world has not been broken up into fragments by narrow domestic walls**
- ▶ **Where words come out from the depth of truth itself,**
- ▶ **Where tireless striving stretches its arms towards perfection**
- ▶ **Where the clear stream of reason has not lost its way in the dreary desert sand of dead habit**
- ▶ **Where the mind is led forward by thee into ever widening thought and action**
- ▶ **Into that heaven of freedom, my Father, let my country awake**

Tribute by P. Gangadharan, Monitoring Committee Member, NCRP

In the sad demise of Dr. Krishnamurthi, we have lost an uncompromising guide and a deeply committed exponent of scientific management of cancer.

With an inbred passion for serving the people inherited from the dedicated life of Smt. Dr. Muthulakshmi Reddy, Dr. Krishnamurthi got involved in alleviating the sufferings of cancer patients from late 1940s. He continued this mission without break for more than five decades. During the early periods in scientific meetings, we heard his talks which always expressed a total dedication to the advancement of scientific cancer treatment along with the



strong support for human values. In the fifties and early sixties, there were a number of meetings with the WHO and the local experts on strengthening cancer treatment, cancer control and cancer research capabilities in India. The accompanying photograph we can see him intensely pursuing the deliberations in one of the WHO meetings in Delhi. Dr. Cooray from Ceylon and Dr. Walter Davis of IARC are in the picture. That was also the period when the

three dedicated cancer centres; TMH of Bombay, Cancer Institute (WIA) Madras, Chittaranjan National Cancer Institute Calcutta excelled in cancer patient services and research. The National Cancer Registry Programme ICMR was launched in 1982 and Dr. Krishnamurthi actively got involved in guiding and streamlining the registry system methodology in our country. We express our deep respects and regards for this departed noble soul.

IN MEMORIUM

Tribute by Dr. C. Ramesh

Associate Professor, KIMIO, Bengaluru

It is with deep regret, we report the sad demise of one of the distinguished scientists of ICMR and a founder family member of NCRP, Dr. A.K. Prabhakar (Retd. Deputy Director General Senior Grade), at the age of 68 on 21st July 2010 at Mysore.



Dr. A.K. Prabhakar was born on 12th February 1942. He completed his Master's degree in Statistics from the University of Mysore. At the time where application of statistical methods and research in the field of medicine was either at its infancy or rare, he accepted the challenge of pursuing a career in medical research. Later on at the age of 48, he was awarded fellowship as part of Indo-Finland bilateral agreement to train Indians in Cancer Epidemiology. Subsequently he was awarded Ph.D. in Epidemiology from the University of Tampere, Finland, in 1992 for his work on "Strategy for control of cervical cancer in India".

He had a long work life at ICMR and was fortunate to work with eminent scientists who were pioneers in their own field of specialty and headed the Premier Institution. At the time of his superannuation, he was working in the division of Non-Communicable Diseases as Deputy Director General (Sr. Grade). Subsequently he shifted with his family to Mysore and was working as Epidemiologist (at the Advisory level) at J.S.S. Medical College, Mysore and thus was very active till the time of his death. He was one of the national experts, who contributed to the success of the cancer registry operations in the country from its inception. He made several presentations in scientific forums both in India and abroad. Being part of ICMR, he shared his expertise in guiding research projects funded by ICMR and

its affiliated institutions. His contribution for research projects in almost all areas of non-communicable diseases is very significant which is evident from many scientific publications, both in national and international journals. He was involved in various capacities in the preparation of monographs, technical reports, task force project reports and reports of several projects (mainly related to studies on non-communicable diseases) funded by ICMR.

I know Dr. Prabhakar since 1983 during which, I had the opportunity of interacting with him for the major unique project on "Severe Mental Morbidity", a joint project of ICMR-NIMHANS. He was always willing to impart training to youngsters and instill confidence in them to take up higher responsibilities. I had several occasions to interact with him during his association with many ICMR projects besides NCRP. He was an excellent human being showering utmost affection on people around him. He was known for his simplicity and believed in a simple and straight forward approach in handling scientific research issues. A lot of people who have worked with him will admire his perseverance in accomplishing set goals.

I had the privilege of being his classmate, room-mate (along with Dr. Rajesh Dikshit) during our stay in Finland as the first batch of Epidemiology students. We had the great privilege of enjoying the extraordinary food cooked by him for the entire 10 months of our stay.

I had great admiration for his patience and grace in accepting criticisms. Memory of the moments passed with him are our assets.

Our deepest condolences to his wife and children and may his soul rest in peace.

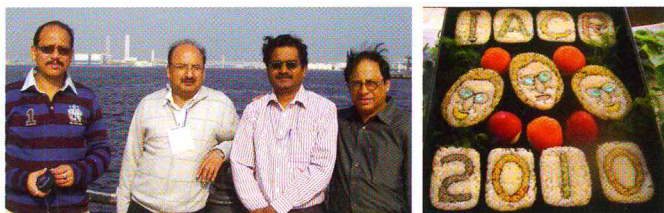
*Never the spirit was born; the spirit shall cease to be never;
Never was time it was not; End and Beginning are dreams!
Birthless and deathless and changeless remaineth the spirit forever;
Death hath not touched it at all, dead though the house of it seems.*

-Bhagavad Gita

NEWS ITEMS

IACR 2010 Meeting at Yokohama, Japan

R.K. Phukan, A. Shrivastava, R. Swaminathan, R. Takiar and Y. Verma formed the contingent representing India in 32nd Annual meeting of IACR 2010 held in Yokohama, Japan, during October 11-14, 2010. There were 5 posters and 2 oral presentations by this group. The key features of NCRP Cancer Registration software were aptly depicted in the poster by Shrivastava on behalf of NCRP-COU. He also had an oral presentation on mouth and tongue cancer incidence trends in Bhopal. Phukan et al had dealt with prognostic factors for oesophageal cancer survival in Assam, Takiar et al had explored on the relationship between HBCR and PBCR data and Verma et al had demonstrated the improvements in cancer mortality using Sikkim registry data in their posters. Swaminathan et al portrayed the prediction of cancer burden in Tamil Nadu as a poster and hospital based 50-year breast cancer survival trend as an oral presentation.

**IACR 2009 Meeting at New Orleans, USA**

Dr. Yogesh Verma from Sikkim and Dr. B.B. Yeole were the two from NCRP registries to attend this meeting during June 3-5, 2009 held in New Orleans, USA. The former spoke on, "Ethnic variation in the occurrence of cancer of stomach, esophagus and liver in Sikkim a North Eastern state of India" while the latter deliberated on "Trends in breast, cervical, and ovarian cancer incidence in Mumbai, India, 1976-2000: An age period, cohort analysis".

IACR News

R. Swaminathan from Chennai registry has been elected to the Executive Board of the International Association of Cancer Registries as the Regional Representative for Asia. He assumed office in October 2010 and will serve in this capacity until 2014. He can be contacted (r.swaminathan@cancerinstitutewia.org) for any assistance regarding IACR related information.

XXV Annual Review Meeting (ARM) of NCRP at Bangalore

The NCRP family celebrated the special occasion of its 25th ARM in style and with scientific fervour at COU, Bengaluru during December 1-4, 2009.

Dr. V. Shanta, as the senior most PI of the registries under NCRP, delivered the keynote address on "Cancer registries in India Where are we?" She traced the progress made by NCRP in the last three decades and reiterated the importance of having more coverage of rural areas under NCRP network in future.

The occasion was graced by the participation of Dr. Bela Shah, Chief of NCD-ICMR headquarters; Dr. Nandakumar, Project Officer, NCRP; members of NCRP-COU, steering and monitoring committees and north-east projects; Mr. S.K. Das of government of Tripura; PIs and other representatives from individual registries within and outside NCRP network.

Special invitees for this ARM were Dr. M.P. Curado from IARC, Lyon, France; Dr. M. Moore, APFOCC, Thailand.

A total of 137 delegates deliberated on a variety of presentations encompassing different aspects of cancer registration, epidemiology and translational research. As has been the tradition, the pre-ARM workshop was organized for junior staff of all registries in NCRP network and a few outside of it. It comprised lectures, hands-on and discussions on operational aspects of cancer registration, biostatistics and epidemiology.



NCRP Training Program 2009

A training program for newly recruited staff of registries from north-east viz. Nagaland and Tripura was organized under the auspices of NCRP at Bengaluru during September 15-17, 2009, focusing on various aspects of cancer registration. The faculty comprised M.N. Bandopadhyay, P. Gangadharan, M. Chaturvedi and B.B. Yeole besides members of NCRP-COU. A total of 13 delegates from the two registries were benefited by this training.

IARC Summer School in Cancer Epidemiology in 2009 and 2010

Dr. Riewpynshai Dympep from Shillong, Meghalaya; Dr. Satyajyoti Haobam from Imphal, Manipur; Dr. Parimal Jivarajani from Ahmedabad, Gujarat; Mr. J. Murugaiyan from Chennai, Tamil Nadu; Mr. R. Selvakumaran from Dindigul, Tamil Nadu and Dr. Sharmila Pimple from Mumbai, Maharashtra were the delegates from India to attend this course in IARC, Lyon, France, during June 15 July 3, 2009.



Mr. Saroj Deep Sapkota from Sikkim; Dr. Gauravi Mishra from Mumbai, Maharashtra and Dr. Sudha Ramalingam from Coimbatore, Tamil Nadu were the delegates from India to attend this course in International Agency for Research on Cancer, Lyon, France, during June 14 July 2, 2010.

This exposure is certainly a value addition says the joyous expression on their faces. National Cancer Registry Program looks forward to getting good publications and presentations on registry material from them in future.

Conferences / Courses Ahead

International Association of Cancer Registries Annual Meeting in October 2011

This is scheduled to be held in Mauritius. For details contact Dr. Shyam S. Manraj, Director, Laboratory Services and National Cancer Registry Coordinator (**email: smanraj@mail.gov.mu**). Travel fellowships are available for limited participants from medium or less resource countries. More details will be available at a later date in www.iacr.com.fr

A course on Cancer Registration and Descriptive Epidemiology: Principles and Methods in Mumbai, during February 28 - March 4, 2011

This is designed for cancer registrars, data managers, statisticians and epidemiologists in cooperation with International Agency for Research on Cancer, Lyon, France. For details, contact Dr. Rajesh Dixhit (**dixr24@hotmail.com**) or Dr. Freddie Bray (**brayf@iarc.fr**).

IARC Summer School in Cancer Epidemiology to be held in Lyon, France, around June 2011

This course is scheduled to be held during June 20 - July 8, 2011. The last date for submitting the Application Form is January 17, 2011.

Financial support is available for a limited number of participants. Priority is given to applicants from low- and medium-resource countries. For application form and details, contact (**cor@iarc.fr**) or visit www.iarc.fr

EVENTS ORGANIZED IN REGISTRIES

Name of the event, place, month/year	Profile of participants, number of participants, any other information
Ahmedabad	
National Cancer Awareness Day, 7th Nov 2009	600 delegates
Conference on National Cancer Control Present and future prospects 31st January 2010	177 delegates
Training for HPV vaccination project staff by IARC, September 2009	20 participants
Bengaluru	
Training programme on the Functioning of Cancer Registry	19 Tumour Registrars of Nagaland, Tripura and Meghalaya PBCR, 14th Sept.2009
Training in Cancer Registry Operations	Medical Record Officer, Indo American Cancer Institute and Research Centre, Hyderabad for 7 days, 17-22, May 2010
Chennai	
Cooperative training program on cancer registration - International	Four clinicians from North Korea (one week in Jan 2009) and one from Kampala Cancer Registry, Uganda (one month in May 2009)
Cooperative training program on cancer registration - National	Three cancer registrars from Cachar Cancer Hospital, Assam and one from Department of Public Health, Manipal University for four weeks in June-July 2010
Cooperative training program on Biostatistics - National	Seven students of M.Sc. Biostatistics underwent internship for a week in 2009; six students of M.Sc. Statistics underwent training for 2-4 weeks as part of their dissertation work in 2010
Shillong	
DBT Workshop on "The role of HPV in upper aero-digestive cancers" NEIGRIHMS, Sept 2009	50 participants who are active researchers working in the field from all over North Eastern states attended. Around 10 faculty Members from reputed institutes conducted the workshop.
Thiruvananthapuram	
Training programme in Epidemiology	MSc. Bio-statistics students

AWARDS / FELLOWSHIPS

Name of the awardee & Designation	Name of the award & agency giving the award	Year
Bhopal		
Dr. Neelkamal Kapoor <i>Principal Investigator Bhopal PBCR</i>	National Academy of Medical Sciences (India) Sir Shriram Memorial Award in the field of cancer education	2010
Dr. Neelkamal Kapoor <i>Principal Investigator Bhopal PBCR</i>	The EML Haagedoorn International Award by European Association of Cancer Education	2009
Chennai		
Dr. R.Swaminathan, <i>Asso. Prof. & Head</i>	Post doctoral fellowship IARC, Lyon, France	2009
Mr. R.Selvakumaran, <i>Senior Investigator</i>	ICRETT Fellowship UICC, Geneva, Switzerland	2009
Mr. J.Murugaiyan, <i>Cancer Registrar</i>	Summer School Fellowship IARC, Lyon, France	2009
Mumbai PBCR		
Mrs. Shravani S. Koyande <i>Asst. Programmer</i>	IPPE - course, University of Tampere, Finland	2009-10
Dr.B.B.Yeole <i>Director</i>	IRB Member, Healis Seksaria Institute, Navi Mumbai, India	2009 onwards
Shillong		
Dr. D.K.Parida <i>PI, HBCR NEIGRIHMS, Shillong</i>	Overseas Fellowship, DBT, Govt. of India	2010
Thiruvananthapuram		
Dr. Aleyamma Mathew, <i>Additional Professor in Statistics & Epidemiology</i>	Elected as country representative, 20th Asia Pacific Cancer Conference	2009

MEETINGS/CONFERENCE/WORKSHOPS ATTENDED

Name of meeting/workshop conference, place, month/year	Name of delegate and Nature of Participation	Title of Presentation
Ahmedabad		
Cervical Cancer Training Workshop, Hyderabad 16-19 November 2009	Dr. Parimal Jivarajani Delegate	-
5th Biennial conference of AOGIN 2010, INDIA at New Delhi, 26-28 March 2010	Dr. Parimal Jivarajani Delegate	-
Bengaluru		
Update on "Non-small cell Lung cancer", KMIO, Bengaluru, July 2010	Dr.K.R. Reddy Dr.C. Ramesh, Chair, Epidemiology	-
CME on "Cervical cancer an Update" National Conference on Obs. & Gyn., BMC & RI, Bengaluru, August 2010	Dr.K.R. Reddy Faculty Dr.C. Ramesh Faculty	Epidemiology of Cervical Cancer Gynaec Cancer Registry Need of the Hour ?
Orientation course on ICD-10, CBHI, Bengaluru, 2009 - 2010	Dr.C. Ramesh Faculty	ICD-10
Symposium on "Empowering medical and Dental institutions" RGUHS, Bengaluru, July 2009	Dr.C. Ramesh Delegate	
"Statistical Issues in Med. Research" MMC & RI, Mysore, Feb 2010	Dr.C. Ramesh Faculty	Analytical Designs in Medical Research
Research Methodology Workshop, Dayanandasagar College of Nursing, Bengaluru, March 2010	Dr.C. Ramesh Faculty	Inferential Statistics
Scientific Programme, Govt. Ayurvedic College, Bengaluru, August 2010	Dr. C. Ramesh, Guest Lecture	Cancer Epidemiology in India
10 th International Conference of Federation of Head & Neck Onco. Soc., Bengaluru, Oct. 2010	Dr. C. Ramesh, Panelist	Panel discussion on "Design of Clinical Trials and Scientific Paper Writing
Research Methodology Workshop, NIMHANS, Bengaluru, Nov. 2010	Dr. C. Ramesh, Faculty	Analytical Design Practical Aspects

Name of meeting/workshop conference, place, month/year	Name of delegate and Nature of Participation	Title of Presentation
Bhopal		
All India Workshop for Medical Persons on ICD-10, CBHI December 2009 & April 2010 at Bhopal	Atul Shrivastava Faculty	Introduction to ICD-10 & Coding of neoplasm
All India workshop for Medical Record Officer on Health Statistics, CBHI, June 2009 at Bhopal	Atul Shrivastava Faculty	Introduction to ICD-10
Tobacco Awareness Workshop, November 2009	Dr. Neelkamal Kapoor Atul Shrivastava , Faculty	
Meeting of Indian Association of Pathologist M.P.Chapter July 2010 at Bhopal	Dr. Neelkamal Kapoor Oral Presentation	Rising Trend of Breast Cancer in India
International Summer School Oncology of the University of Groningen at The Netherlands	Dr. Neelkamal Kapoor Guest faculty	
Chennai		
IAEA-PACT Regional Workshop on Cancer prevention, detection and registration, Mumbai, India, April 28-30, 2010	Dr. R. Swaminathan Faculty	Cancer survival analysis & Cancer registration: Data sources and reporting
Research Seminar IARC, Lyon, France, March 2009	Dr. R. Swaminathan Invited	SURVCAN-DC: Cancer survival in low- or medium-resourced countries
CME of Indian Medical Association & Dr. Kamakshi Memorial Hospital, Chennai, Kalpakkam, April, 2009	Mrs. R. Rama Invited	Cancer Incidence/ Statistics/ Cancer Registry
XI Annual Conference of Society of Statistics, Computer & Applications, Chennai, February 24-26, 2009	Mrs. R. Rama Oral presentation	Methodological issues in Survival Analysis of Cancer data using Cox & Parametric Accelerated Failure time Models
Kollam		
Annual Conference of Asia Cohort Consortium, Dec 2009, Tokyo, Japan	Dr. P. Jayalekshmi Speaker	Natural Background Radiation studies, Karunagappally Cohort, Kerala, India

Name of meeting/workshop conference, place, month/year	Name of delegate and Nature of Participation	Title of Presentation
Mumbai PBCR		
NCRP -Training and Workshop programme for newly registries, Bangalore, September 2009	Dr.B.B.Yeole Faculty Member	
Prevention of Gynecology Cancer Conference , UICC, TMH, Mumbai, October-November 2009	Dr.B.B.Yeole Faculty Member	
IAEA workshop on cancer prevention, detection, and cancer registry. TMH, Mumbai, April-May 2010	Dr.B.B.Yeole Faculty Member	
Shillong		
18th International Congress on Nutrition & Integrative Medicine, Japan, 2010	Dr. D.K.Parida, Guest Speaker	Nutrigenomics & Cancer Prevention
Golden Jubilee Conference of Indian Society of Hematology&Transfusion Medicine, New Delhi, Nov 2009	Dr. D.K.Parida, Guest Speaker & Chair Person	Radiation treatment in Mycosis Fungoides
Thiruvananthapuram		
20th Asia Pacific Cancer Conference, Japan, November 2009	Dr.Aleyamma Mathew, Invited	Cancer Registration and Epidemiology in India
Seminar on Bio-statistics, Kottayam, October 2009	Dr.Aleyamma Mathew, Invited	Bio-statistics in cancer research
Workshop on Environmental Science (UGC programme), Thrissur, September 2009	Dr.Aleyamma Mathew, Invited	Environmental risk factors of Cancer
Workshop on Research Methodology, Madurai, August 2009	Dr.Aleyamma Mathew, Invited	Overview of Experimental study designs and clinical trials

NEW PROJECTS UNDER THE REGISTRY IN 2009 - 2010

Name of the project and funding agency	Name of PI/Co-PI	Start and end date
Ahmedabad		
Population Based Cancer Registry - Gandhinagar District - Government of Gujarat	Dr. Parimal J. Jivarajani Dr. Shilin N. Shukla Mr. Himanshu V. Patel Mr. Jayesh B. Solanki	2009-2010
Chennai		
Survey of presentation features of common cancers and risk factors for treatment outcome: a retrospective and prospective study Jivdaya Foundation, USA	Dr. R. Swaminathan	2010-2013
Population survey to assess the completeness of cancer registration in Dindigul Ambilikkai Cancer Registry, IARC, France	Dr. R. Swaminathan	2010-2011
Kollam		
Prevention and cancer control among female workers in traditional industries cashew workers, cashew workers (Scheduled Caste), Govt. of Kerala	Dr. Jayalekshmi P Dr. Kalavathy MC Dr. Jayakrishnan R	01-04-2009 to 31-03-2010
Prevention and cancer control among Tribal population of Kollam District, Govt. of Kerala	Dr. Jayalekshmi P Dr. Kalavathy MC Dr. Jayakrishnan R	01-04-2009 to 31-03-2010
Cancer Patient Services and Cancer Control Projects - 12 Panchayaths & 3 Block Panchayaths in Karunagapally, Govt. of Kerala	Dr.P.Jayalekshmi Dr.Paul Sebastian	01-04-2009 to 31-03-2010
Sanjeevani Project for Cancer Services, Mining Area Welfare Board Govt. of Kerala	Dr.P.Jayalekshmi Dr.Paul Sebastian	Ongoing
Mumbai		
Estimation of Population Survival Rates for the major sites, Mumbai, 2000-2002. Indian Cooperative Oncology Network, Mumbai	Dr.B.B.Yeole	June 2009 - November 2010
Shillong		
Hospital Based Cancer Registry at NEIGRIHMS	Dr. D.K.Parida/ Dr. Yookarin Khonglah	November 2010

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