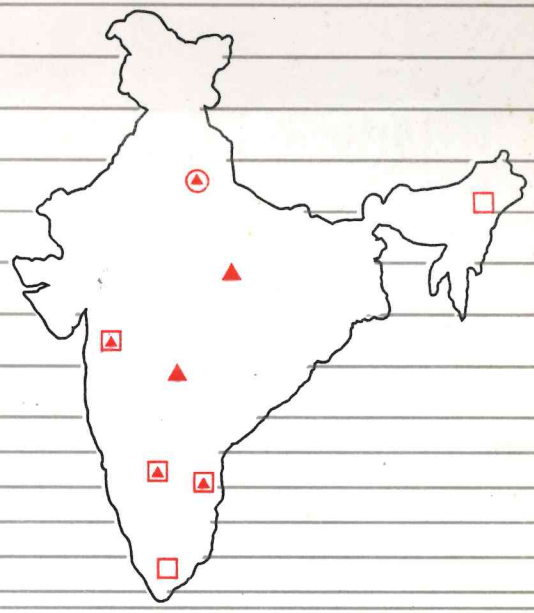
CANCER REGISTRY ABSTRACT



NEWS LETTER OF THE NATIONAL CANCER REGISTRY PROGRAMME OF INDIA

Vol.X OCTOBER 2003 No.1

PUBLISHED BY THE HOSPITAL CANCER REGISTRY, REGIONAL CANCER , TRIVANDRUM FOR THE NATIONAL CANCER REGISTRY PROJECT OF THE INDIAN COUNCIL OF MEDICAL RESEARCH

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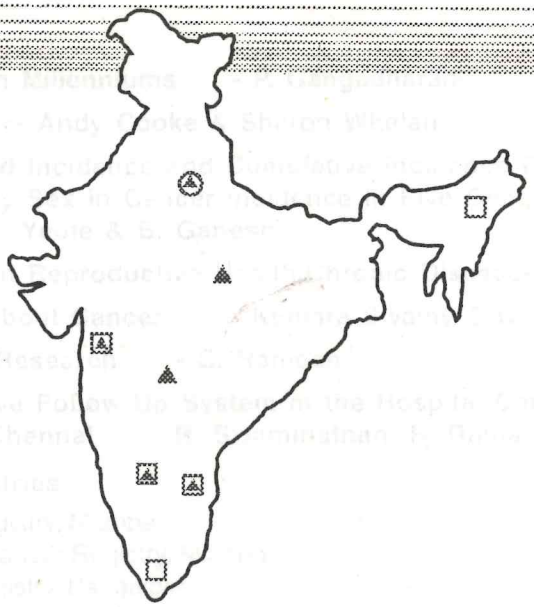

NEWS LETTER

The National Cancer Registry Programme Of India

PUBLISHED BY THE HOSPITAL CANCER REGISTRY, REGIONAL CANCER,
TRIVANDRUM FOR THE NATIONAL CANCER REGISTRY PROJECT OF THE INDIAN COUNCIL OF MEDICAL RESEARCH

CANCER REGISTRY ABSTRACT

NEWS LETTER OF THE NATIONAL CANCER REGISTRY PROGRAMME-ICMR VOL.X NO.1 OCTOBER 2003.

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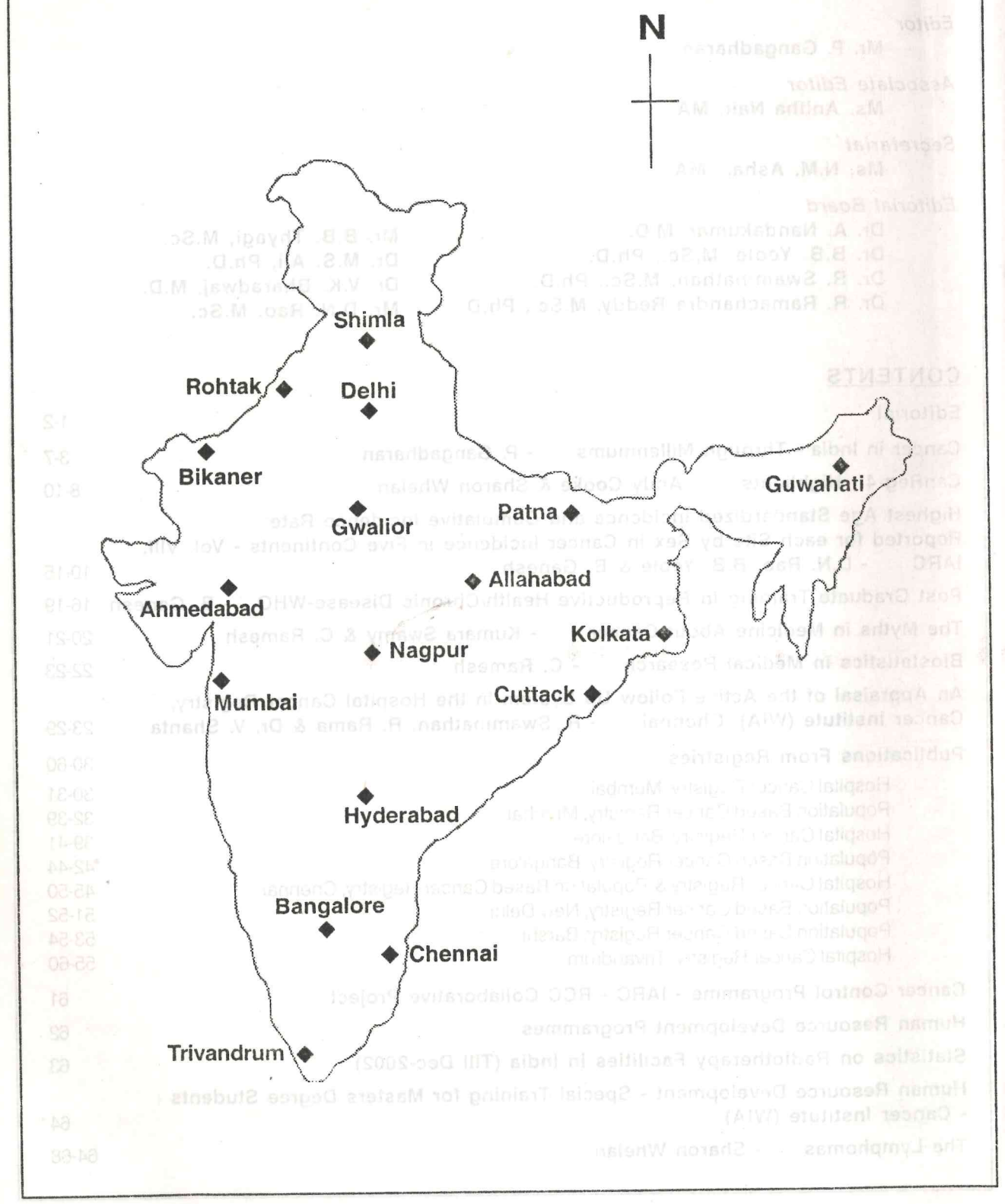
REGIONAL CANCER CENTRES IN INDIA



Editorial:

RECOGNIZE AND REASSESS

Information accrued on cancer in India through the millenniums would be highly illuminative and of immense value to any health planner. Cancer is not a new disease for any country. Recognizing the achievements and utilizing the same to reassess needs have to be periodically undertaken for progress. There is evidence that the disease was known in the ancient World. Shushruthas (700BC) verses quoted from Dr. Khanolkar's book highlight on etiology and even emphasize when not to treat cancer!!! Several studies before 1900 AD observed special cancer types in India, for instance the Kangri cancer and its risk factor was reported around mid 1800's by British Physicians. They had the advantage of having seen in the Western World cancer types, which are different from ours. Thus the exercise was a comparison of cancer types in two different situations. Not much of statistical epidemiologic methods were used or available at that time. Niblocks observation on cancer from Chennai in 1902 is an exercise in Descriptive Epidemiology. The article is reproduced in part elsewhere in this issue. Epidemiologic studies begin with the alertness and keen observations of clinicians. Between 1900 & 1950, several studies highlighted the problem of oral cancer in India. The study by Orr in 1933 from Neyyoor hospital, then in Travancore state was a landmark. He employed methods for in depth enquiry into causes of oral cancer. Questionnaire method was adopted and case-control comparison was conducted. Dr. Orr had the following questions to lead his investigation on oral cancer in 1933.

1. Is there a definite geographical distribution?
2. Is the disease definitely associated with the chewing habits; if so, what are the carcinogenic factors in the quid?
3. Is it associated with syphilis?
4. Is it associated with any particular dietetic or nutritional defect?

Findings included nutritional deficiencies, type of Chunnam (Slaked Lime), Tobacco type, etc. used in Pan chewing as associated factors.

If we were to study oral cancer today, perhaps we may add only a few but significant aspects on pre-cancer and molecular level observations. Do we have any new initiatives in this regard?

Nath & Grewal in 1930's initiated a pioneering study of cancer in India by collecting cancer related information from hospitals. How rudimentary these hospital statistics were at that time can only be guessed. Now, after 70 years of the above study are our hospital based statistics any better? Who can improve them? These Hospital Based Statistics could expose innumerable health problems in our people when properly assembled.

Dr. Niblock in his study highlighted the problems of Oral cancer, Penile cancer, religious differences, socio-cultural practices, genital hygiene, epidemiology and risk factors.

Are we better informed about these today? Could we translate the knowledge into health action for the people?

Country wide hospital statistics were collected mainly through recorded information by several scientists in our country. From these, Khanolkar, Sanghvi, Paymaster, Jussawalla, Wahi, Krishnamurthy, Shanta and several others had repeatedly highlighted the problem of Oral cancer in our country. Due to the anatomic location, organ function, unusual opportunities for examination and surveillance, great emphasis was laid and much effort was spent to study these cancers. These

studies were meticulously continued over time by Sanghvi, Fali Mehta, Gupta and others. Have we progressed much in delineating further risk factors and etiology? Studies have identified several pre-cancerous conditions and the malignant potential of specific habits and related oral lesions commonly seen in India. Thus established were the Bidi smoking habit in relation to Oral cancer, by Sanghvi, Rao, (Mrs. Jayant) & Khanolkar, reverse smoking of Chutta and Palatal cancer by Kini and Subba Rao, Dhoti & Saree cancer by Khanolkar, use of Khaini, Chutta in Oral cancer, relation between Arccanut and Laryngeal cancer in Assam and so on. Use of Tobacco as a risk factor has been highlighted since the study of Niblock, in India as well as globally. Reliable evidence on the relation between oral cancer and use of Pan Masala by Gupta et.al have recently aided the impetus for banning the sale of such products. So long as they are manufactured and tobacco is cultivated are we anywhere near to stop their usages? Law has been passed banning smoking in public places in several states. Are we driving the risk into the homes where women and children are to be the victims due to in-house (ETS) smoking?

Important observations on Cervix & Breast cancer have been made by several workers. From Chennai, Dr. Krishnamurthy, Shanta, from Mumbai, Khanolkar, Paymaster, Jussawalla have observed the higher frequency of Cervix cancer in Hindus compared to Muslims, Breast cancer in Parsis compared to women of other religious groups. Decades back the role of human smegma in cancer causation was highlighted with evidence on the presence of Smegma in non-circumcised male as causative. The importance of good genital Hygiene among males & females have come to focus. We have also a set of risk factors of breast cancer, which are difficult to practice in community level like age at marriage, menarche, menopause etc.

The protective (or risk reduction) role of regular physical exercise, high fiber vegetable diet, intake of fruits, screening tests etc have been propagated with evidence from statistical studies. Some of these like periodic mammogram recommended is just unaffordable for majority of our population. To top all our efforts in cancer control we have the National Cancer Control Programme (NCCP), which envisages unified action and their periodic reviews would help us in assessing the situation and to propagate the action required. It is also thought provoking that some cancer types are reducing in incidence without any established interventional programmes.

We should now be more concerned with increase of cancer of Breast, Ovary in women Prostate and Lung in men and pockets of special cancer types like Gall Bladder cancer in Northern India. A constant surveillance on tobacco use by all sections of the community is essential.

It is noteworthy than fresh initiatives are underway to start Population Based Cancer Registries in hitherto unknown populations in the North East. Even though there are 17 Regional Cancer Centres in India, the ICMR, NCRP, registries are few and far between and is inadequate to explain the magnitude of the cancer problem. Even though the technology for cancer registration is available in our country human resource development is essential for progress in this regard.

We have only inadequate information on overall survival or cure rates of several types of cancers from Indian data. Quality of Survival is yet to be studied among the cancer survivors. It is hoped that NCRP together with NCCP will fulfill the role that is due from the current assessment of our problems.

- P. Gangadharan

CANCER IN INDIA - THROUGH MILLENNIUMS

Compiled by P. Gangadharan

SUSHRUTA SAMHITA (700 BC) - (Quoted by Dr. V.R. Khanolkar MD, Director, Indian Cancer Research Centre in the book 'A look at Cancer' published in December 1958).

It is notable that the ancient Hindu physicians were conversant with most of these features and their sagacious injections on the treatment of tumours would be valuable even today. The following verse from Sushruta Samhita have more than a historical interest in the present context:-

" मुष्टिप्रहारादिभिरर्दितेऽङ्गे ।
मांसं प्रदुष्टं प्रकरोति शोफम् ॥ १७ ॥
अवेदनं स्निग्धमनन्यवर्ण-
मपाकमश्मोपममप्रचाल्यम् ॥
प्रदुष्टमांसस्य नरस्य बाढ-
मेतद् भवेन्मांसपरायणस्य ॥ १८ ॥
मांसार्बुदं त्वेतदसाध्यमुक्तम्
साध्येष्वपीमानि विवर्जयेत्तु ॥
संप्रसृतं मर्मणि यच्चजातम्
स्रोतःसु वा यच्च भवेदचाल्यम् ॥ १९ ॥
यज्जायतेऽन्यत्खलु पूर्वजाते
ज्ञेयं तदध्यर्बुदमर्बुदज्ञैः ॥
यद् द्वंद्वजातं युगपत्क्रमाद्वा
द्विरर्बुदं तच्च भवेदसाध्यम् ॥ २० ॥"

Meanings:

In a part of the body belaboured by blows from fists etc., the afflicted flesh produces a swelling .....17.

In a person fond of eating meat or whose tissues are vitiated, a swelling progressively increases in size. It is painless, greasy, of uniform colour, non-suppurating, hard like a stone and not movable .....18. This is Mansarbuda and it is said to be incurable.

In the (tumours, which appear) curable, the following should not be selected (for treatment): Those which have spread to vital regions, and those which if they are fixed and have arisen in Srotas (channels, e.g. mouth, eyes, ears, etc.) .....19.

A Tumour originating in an already existing growth is designated as Adhyarbuda by Arbudadnas (Tumour experts).

Tumours which arise (in different parts of the body) at the same time or those which arise on after another are Dwirarbudas (secondary tumours) and are incurable .....20.

100 YEARS AGO - A CHENNAI EXPERIENCE

Cancer in India

W.J. Niblock, Captain, I.M.S., General Hospital, Madras,

(This is abstracted from Indian Medical Gazette Vol. 37, 161-163, 1902.)

As the subject of Cancer in India is exciting some interest at the present time, I have carefully gone through the registers of the Madras General Hospital, and noted down all cases of carcinoma, sarcoma and rodent ulcer which have been admitted into the hospital during the past ten years. I have also made out a separate list of cases shown as suffering from 'malignant disease' which term I take to be synonymous with that of 'Cancer' in its broader sense.

It will be noted, on looking at the Tables, that no females or children are shown in the list of admission prior to 1895. Up to that year there was a separate Women and Children's Hospital in Madras, which was amalgamated with the General Hospital on 27th September 1895, the latter having been enlarged.

Table I.A - Reproduction omitted.

On looking at this Table one cannot avoid being struck very forcibly by the enormous number of patients shown as admitted for carcinoma of the cheek and jaws. Carcinoma of the cheek alone accounts for almost one-third, and carcinoma of the cheek, jaws, and tongue taken together for more than one-half of the total admissions. The cheek is the part most commonly affected in Hindus and Mahommedans, males and females. The disease affects the buccal surface of the cheek generally commencing opposite the teeth of the lower jaw and spreading with varying rapidity.

The frequency of carcinoma in this situation is in my opinion, due to the chewing of 'betel', a common habit in this country, and indulged in, I believe, by almost all classes of natives.

'Betel', as used in the Madras Presidency, is said to be made up of the following parts:- (a) the essential constituents, via, 'betel' leaf, areca nut, and caustic lime (chunam), (b) condiments, such as cloves, nutmeg, cardamoms, cubebs etc. Dry powdered cocoanut and oil are also some times added.

The above components are mixed in varying proportions, rolled up in a betel leaf, and placed in the mouth. They are then chewed and rolled about by the tongue and cheek for a period varying from 10 to 30 minutes and then spat out.

Carcinoma of the cheek is particularly prevalent on the West Coast - especially in Malabar. At the present time there are five patients in my wards suffering from the disease, of whom no less than three are from Malabar.

The great frequency on the West Coast may be due partly to the fact that the people there are in the habit of chewing 'betel' which contains a large amount of caustic lime, and a small amount of betel leaf juice, whereas in the other parts of the Presidency the caustic effect of the lime is neutralized by the relatively large proportion of betel-juice and other constituents used. On the West Coast the chewing of tobacco is also very prevalent.

The irritation caused by the chewing of 'betel' can be seen in many cases to give rise to well-marked leukoplakia, which is the forerunner of the carcinoma which ultimately develops. I have seen several such cases.

Epithelioma of the lip is, it will be noted, comparatively rare, and, so far as my experience goes, affects both lips with equal frequency. The rarity of carcinoma in this situation is no doubt explainable by the fact that smoking from a pipe (or at any rate a clay-pipe) is not indulged in by natives of this country.

Alimentary canal - Carcinoma of this region with the exception of the rectum, is rare. Thus only 21 cases of carcinoma of the stomach are recorded. If to these added 13 cases shown as 'malignant disease' of the stomach, we obtain a grand total of 34 cases in ten years. Cancer of the liver is more frequent, if to the 18 cases shown as carcinoma be added the 42 cases shown as 'malignant disease' of the liver.

I may add that very few of the cases of carcinoma of the stomach have been verified by exploratory incision or post-mortem examination.

Carcinoma of the Penis - No less than 201 patients were admitted for epithelioma of the penis, all of whom were Hindus. The non-occurrence of epithelioma of the penis in Mahommedans has been ascribed to the fact that they are circumcised at a very early age, whereas circumcision amongst Hindus is exceptional. It has been my experience that epithelioma of the penis chiefly occurs amongst the poorer classes, whose habits are extremely dirty, and who never seem to dream of retracting the foreskin and cleaning away the retained smegma. As a result of this the glans penis and parts underneath the prepuce are coated with a most disgusting layer of smegma which must, and undoubtedly does, act as an irritant. On the other hand, as Mahommedans have no foreskin, this collection cannot occur, although their habits may be equally dirty. It would be interesting to know whether a similar immunity from epithelioma of the penis holds amongst the Jews. I am unable just now to find any statistics bearing specially on this point.

Table I.B - Reproduction omitted.

There is nothing special to note in this table except the extreme frequency with which sarcoma of the lower extremity is met with amongst Hindus. Thus out of 70 cases only two were Mahommedans. It is well known that whereas Hindus of the lower classes as a rule go about with bare feet, it is equally the rule for Mahommedans of all classes to wear some protection for the feet. This may, or may not, have some bearing on the relative frequency of the disease in this region amongst Hindus.

Rodent ulcer - This disease is extremely rare in the Madras Presidency. Thus only four natives and four Europeans (side Table II) suffering from it have been admitted to the General Hospital during the past ten years. I may here remark incidentally that lupus is also practically unknown in this country.

'Malignant disease' - It will be noted that in all the cases under this heading the disease was situated in either the thorax or abdomen. In the majority of them the patient probably 'absconded' before a more satisfactory diagnosis could be made.

Table II - Reproduction omitted.

This table deals with Europeans and Eurasians. Here also it will be noted that cancer of the alimentary canal is comparatively rare.

Table III - Reproduction omitted.

This Table shows the total (a) Natives; (b) Europeans and Eurasians admitted to the General Hospital during the ten years together with the variety of 'cancer' for which admitted, and the percentages on total admissions for each year, suffering from carcinoma and sarcoma.

Table IV - Reproduction omitted.

In this table, amongst other things, one notes that the average percentage on total admissions of both carcinoma and sarcoma is highest amongst Hindus and lowest amongst Eurasians.

The four groups come in the following order of frequency - Hindus, Mahommedans, Europeans, Eurasians, both for carcinoma and sarcoma.

If the cases of epithelioma of the penis be excluded, then carcinoma will be found to be most frequent in Mahommedans.

The name 'Hindus' has unfortunately had to include in addition to the 'Hindus proper' (Brahmins etc), all the 'other castes'. It was found impossible to make any distinction between the two, as in hospital practice it is very hard to draw the line between the real Hindus and 'other castes'. This undoubtedly detracts considerably from the value of the statistics, but at the same time there is no doubt that cancer is not by any means rare amongst the Brahmins.

One native practitioner, himself a Brahmin, has told me that he has seen many cases of carcinoma of the rectum, and other parts of the body in the strictest of Brahmins. And several, undoubtedly high-caste Hindus, are annually admitted to the General Hospital suffering from carcinoma. Whether, however, carcinoma of the stomach has been seen amongst such patients, I am unable to say definitely.

Table V - Reproduction omitted.

This table is intended to show the incidence of carcinoma according to sex, in (a) Natives, (b) Europeans and Eurasians. It will be noted that carcinoma is most frequent amongst native women, and least so amongst European and Eurasian women. The percentages here are higher than in Tables III and IV, as in this Table I was able to eliminate the children, which was not possible to do in the case of the other two tables with the figures at my disposal. (About 400 children are annually admitted to the General Hospital).

General Remarks.

In dealing with Table I.A., I omitted to draw attention to the fact that, whereas 46 cases of carcinoma of the uterus, and five of the vulva or vagina, occurred amongst Hindu women, not a single case is noted as having occurred amongst Mahommedans. These figures are supported by those of the Government Maternity Hospital where, out of a large number of cases of carcinoma

of the uterus admitted during the past five years, not a single case was noted in a Mahommedan woman.

To conclude, it is to be hoped that statistics showing the frequency of the admissions for cancer in the various hospitals throughout India, together with the regions of the body affected, and the religious or castes of the patients, will be published, as it is only by this means that any idea can be formed as to be prevalence, or otherwise, of cancer in this country. The figures given above show that in Madras, at any rate, cancer is by no means uncommonly met with.

A Chennai Experience - Cancer in India - Madras General Hospital 1892-1901

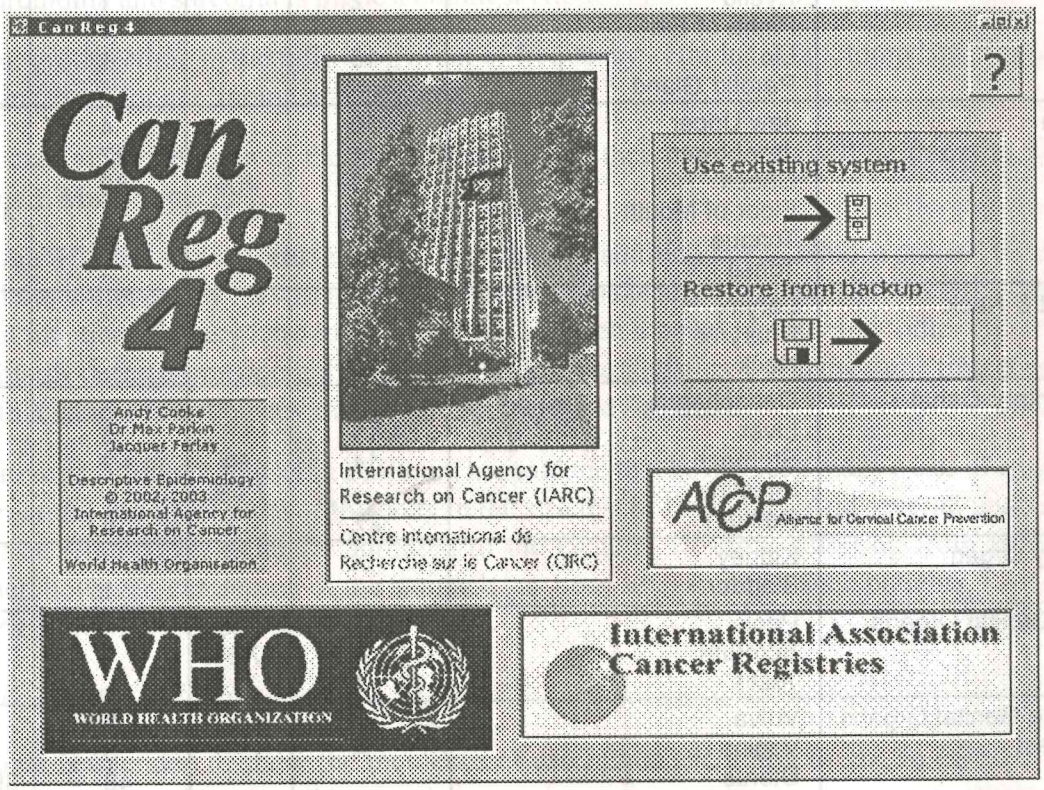
Site / Type		Males 1892-1901		Females 1895-1901	
Head & Face	Orbit	-		1	
	Eyelid	2		1	
	Pinna of Ear	-		1	
	Lip	18		1	
	Parotid Gland	-		-	
Mouth	Jaw Upper	30		4	
	Jaw Lower	71		17	
	Cheek	243	406	80	107
	Floor of Mouth	3	54.4%	-	46.7%
	Tongue	58		6	
	Tonsil	1		-	
Throat & Neck	Larynx	2		-	
	Pharynx	4		-	
	Neck	3		-	
Alimentary Canal	Oesophagus	3		-	
	Liver	15		3	
	Stomach	14	59	7	
	Intestine	-	7.9%	-	
	Rectum	27		6	
Urinary Organ	Kidney	-		-	
	Bladder	-		1	
Male Genital Organs	Penis	201	206	-	
	Scrotum	4	27.6%	-	
	Testis	1		-	
Female Genital Organs & Breast	Vulva	-		2	
	Vagina	-		3	90
	Uterus	-		46	39.3%
	Breast	5		39	
Skin	Head & Face	4		2	
	Trunk	3		-	
	Upper Extremity	1		-	
	Lower Extremity	11		6	
	Peritoneum	-		2	
	Lymphatic Glands (Growing)	16		1	
	Site not mentioned	6		-	
		746		229	

This table gives the frequencies of cases seen in males (1892-1901) and in females (1895-1901). This table is abridged from the tables included in the original article. Note: (1) The site classification used (2) The preponderance of certain sites: males – Mouth - 54.4%, Genital organs - 27.6%, Females – Mouth - 46.7%, Breast & Genital organs - 39.3%.

CanReg4 - Highlights

Kind Courtesy: **- Andy Cooke & Whelan Sharon, IARC, Lyon, France**

CanReg4: CanReg4 is a computer program designed to perform all the tasks needed for the management of a good quality Population-Based Cancer Registry database, particularly for smaller registries and those in developing countries. It is configurable to the specific requirements of each Cancer Registry, is easy to use and is available in many different languages. It is freely available to members of the International Association of Cancer Registries.



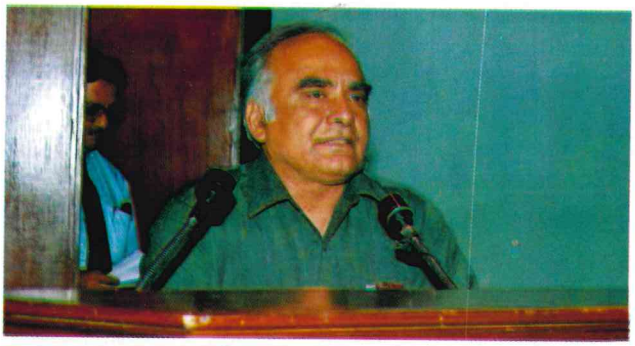
The Project:

The CanReg project is run by the department of Descriptive Epidemiology of the International Agency for Research on Cancer. Advice and assistance is given to Cancer Registries, a CanReg system is designed and installed where appropriate, and staff are trained in its use. This makes data available, coded to international standards, for comparison, research and collaborative studies.

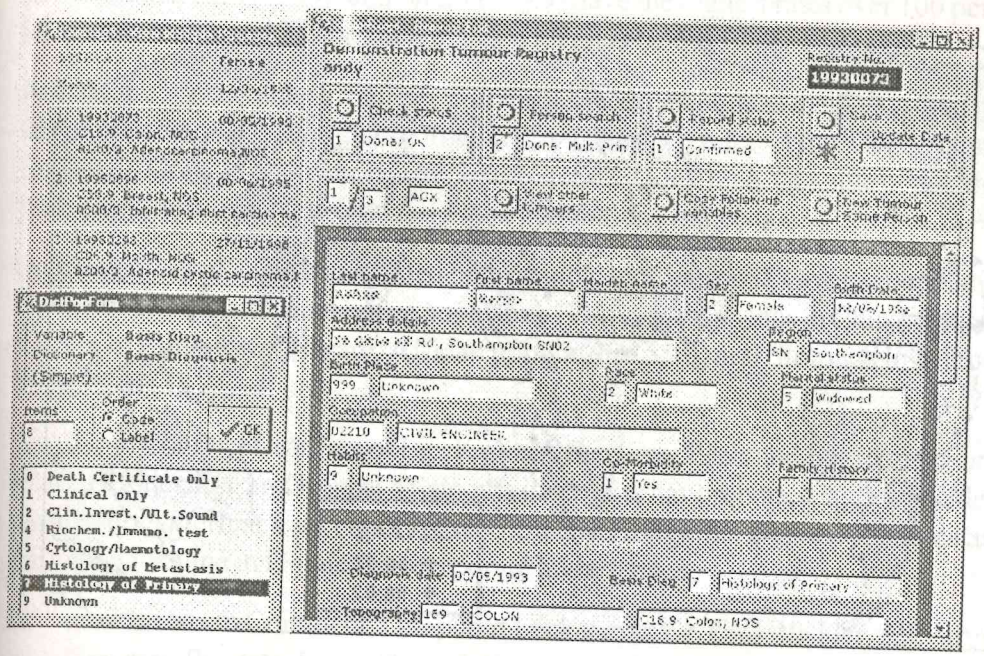
Data Entry:

The most important part of the system is the data entry of new cancer cases.

DEVELOPMENT OF AN ATLAS OF CANCER IN INDIA
SOUTHERN REGIONAL WORKSHOP BANGALORE (WHO-NCRP)



ALL INDIA WORKSHOP - BANGALORE



Look-up tables are provided to make the process faster and more accurate. These include standard ones such as the International Classification of Diseases codes for cancer, and also locally-defined ones such as address, hospital.

After entering the details, the registry clerk must perform the "Check".

This process ensures that certain combinations of data are valid, for example:

- **Age / Date of Birth / Date of Diagnosis / Date of Death**
- **Sex / Site of Tumour**

and whether other combinations are rare and should be checked at source:

- **Age / Sex / Tumour type**
- **First name / Sex**

Conversion is also carried out from ICD-O to ICD-10.

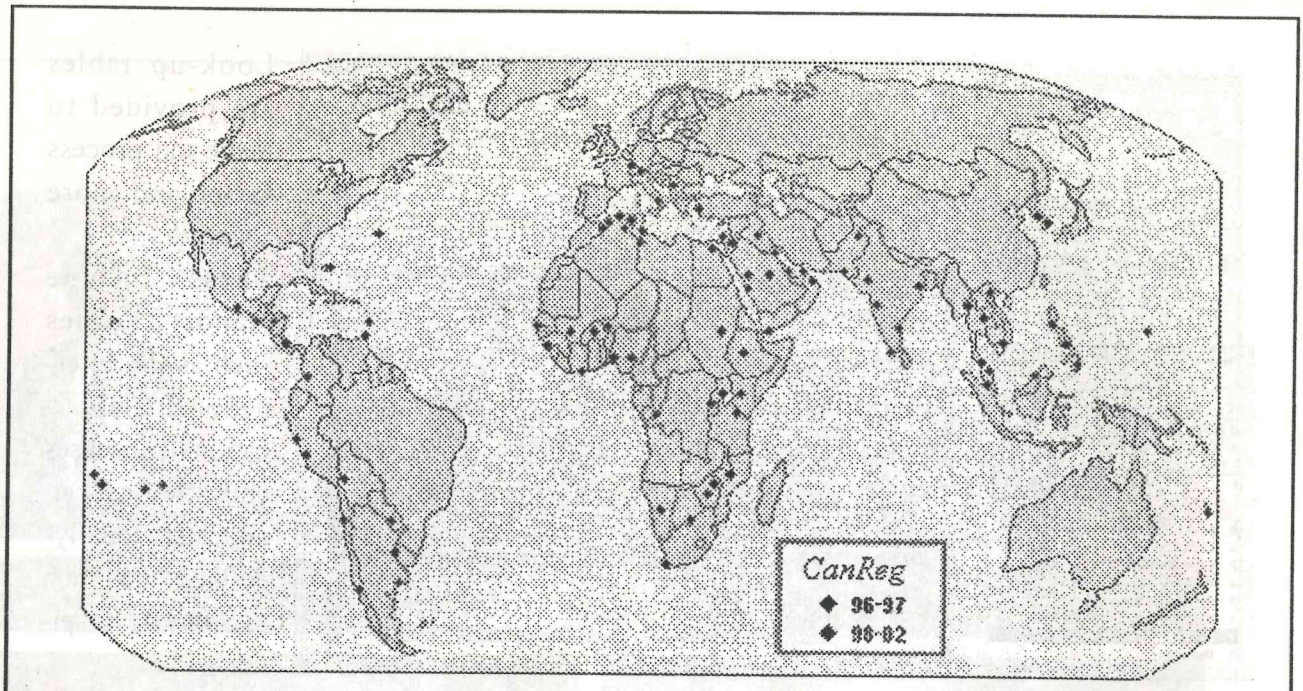
Next, the "Person Search" must be performed. This looks for other tumour cases pertaining to the same person - either another notification of the same tumour (a duplicate), or a different tumour occurring at a previous time (a multiple). Phonetic name simplification and probability matching on all personal details are used to aid the search. Only when a record has passed the Check and the Person Search can it be used in analysis. This ensures a consistent high standard of data quality.

Analysis:

To study or present results from the Cancer Registry data, the program can produce frequency distributions, incidence rate tables, EpiInfo interface, or export to other statistical packages.

CanReg4 in the world

By 2002, CanReg4 had already been installed in over 120 registries, distributed over more than 50 countries.



Highest Age Standardized Incidence and Cumulative Incidence Rate reported for each site by sex in Cancer Incidence in Five Continents-Vol.VIII-IARC.

D.N. Rao[1], B.B. Yeole[2], B. Ganesh[3]
1 Head, Division of Epidemiology & Biostatistics, Tata Memorial Hospital.
2 Deputy Director, Mumbai Cancer Registry, Mumbai.
3 Epidemiologist, Tata Memorial Hospital.

Recently Vol.VIII of Cancer Incidence in Five Continents was published by the International Agency for Research on Cancer, Lyon, France. This volume includes data from 186 registries in 57 countries of all Five Continents namely Africa, America - Central, North and South, Asia, Europe and Oceania, covering the years 1)93-97. From India, the urban population based registries located at Ahmedabad, Mumbai, Bangalore, Chennai, Delhi, Trivandrum, Poona, and Nagpur and rural registry at Karnnagapally have contributed data in this volume. This volume contains Age Standardized Incidence Rates (AAR), (to the level of the 4th character of the ICD10 code) and, for some sites the distribution of the cases according to histological subtype. Age standardized and cumulative Incidence Rates for the three-character categories of ICD10 for each site for all populations are given in separate chapter. From this chapter populations with highest AAR reported for each site in both the sexes are given in Table 1 and highest cumulative incidence rate (0-74yrs) for each site in both the sexes are given in Table 2.

For all sites together highest incidence in males is reported by Michigan, Detroit-Black population of USA (518.1) and in females by population of Geneva, Switzerland (367.6). Among the 51 sites in males and 55 sites in females listed in the table 1 only three sites in males namely oesophagus (183.8), other skin (154.8) and prostate (202) and three sites in females namely oesophagus

(123.1), other skin (154.8) and breast (114.9) have the highest rates over 100 per 100,000. There are 30 sites in males and 38 sites in females with rates below 10 per 100,000.

Among the various sites in males, Prostate has recorded highest incidence rate by Michigan, Detroit-Black population of USA (202.0) followed by Oesophagus for China, Cixian population (183.8), Skin for Brazil, Goiania population (169.5), for Stomach for China, Changle population (145.0) and Lung USA, for Louisiana, New Orleans-Black population (107.0).

In females Other-Skin has recorded highest incidence in Brazil, Goiania population (154.8) followed by Breast in Uruguay, Montevideo population (114.9), Oesophagus in China, Cixian population (123.1), Cervix in Zimbabwe, Harare, African population (55.0) and Stomach in Michigan, Detroit-Black population (38.9).

In African Continent cancers of Lip, Kaposi's Sarcoma, Penis and Eye in males and cancers of Cervix Uteri, Bladder, Eye and Kaposi's Sarcoma in females have reported highest incidence rates. In Central and South Americas cancers of Nose, Skin and Hodgkin's Disease in males and cancers of Skin, Breast and Vagina in females have reported highest rates.

In American North Continent, Lymphoid Leukaemia, Ca. Gall Bladder, Salivary Gland, Small Intestine, Pancreas, Prostate, Lung, Thyroid, Connective Tissues, Breast, Multiple Myeloma, NHL in males and cancers of Lips, Multiple Myeloma, Salivary Gland, Small Intestine, Pancreas, Nose, Larynx, and Lung in females have reported highest rates. In Asia, cancers of Liver, Gall Bladder, Nasopharynx, Oesophagus, Stomach, Ureter, Tongue, Mouth, Colon, Rectum in males and cancers of Liver, Gall Bladder, Bone, Nasopharynx, Hypopharynx, Oesophagus, Stomach, Tongue, Mouth, Ureter, Rectum in females have reported highest rates.

From European, Lip, Tonsil, Hypopharynx, Larynx, Bone, Brain, Testis, Bladder, Mesothelioma and Kidney in males and cancers of Tonsil, Mesothelioma, Connective Tissue, Ovary, Kidney, Brain, Hodgkin's Disease, NHL, Lymphoid Leukeamia, in females have reported highest rates.

In Oceania Continent Melanoma, Myeloid Leukaemia in males and Colon, Melanoma, Vulva, Corpus Uteri, Thyroid, Myeloid Leukeamia in females has reported highest rates.

It is interesting to note that Indian Registries have also reported highest age standardized rate for some sites. In males Ahmedabad population for cancer of Tongue and Trivandrum population for mouth, and in females Chennai population for cancer of Hypopharynx and Poona population for Ca. Vagina have reported highest incidence rates in the world. Karachi population of Pakistan have reported highest incidence rate in females for Cancers of Tongue and Mouth.

For most of the populations which have reported highest AAR in particular sex have also reported highest cumulative incidence rate for that particular site in that sex.

The highest age standardized incidence rate and cumulative incidence rate reported in this volume have provided us to identify high-risk groups in the world for specific cancers.

Reference:

DM Parkin, SL Whelon, J Ferlay, L Teppo and PB Thomas. Cancer Incidence in Five Continents Vol.VIII. IARC Scientific Publications No.155, Lyon, France, 2002, pp.515-704.

Table 1(a): Highest Age Adjusted (World) Incidence Rate (AAR) reported in the World for each site for Males

ICD10	Site	Country	Population	No. (93-97)*	ASR
C00	Lip	Spain	Cuenca	132	14.3
C01-02	Tongue	India	Ahmedabad	599	9.3
C03-06	Mouth	India	Trivandrum	207	9.3
		France	Somme	158	9.3
		China	Taiwan (1997)	1087	9.3
C07-08	Salivary glands	Canada	Northwest Territories (83-97)	14	4.0
C09	Tonsil	France	Calvados	123	6.5
C10	Other Oropharynx	France	Calvados	110	5.9
C11	Nasopharynx	China	Hong Kong	4075	21.4
C12-13	Hypopharynx	France	Bas-Rhin	380	12.9
C14	Pharynx Unsp	France	Some	57	3.5
C15	Oesophagus	China	Cixian	2047	183.8
C16	Stomach	China	Changle	1808	145.0
C17	Small Intenstine	USA	Louisiana,Central Region:Black	7	3.7
C18	Colon	Japan	Hiroshima (91-95)	2096	59.2
C19-20	Rectum	Japan	Hiroshima (91-95)	960	27.4
C21	Anus	Poland	Kielce (93-96)	146	5.1
C22	Liver	China	Quidong,County	3038	95.7
C23-24	Gall Bladder	Korea	Busan (96-97)	245	9.7
C25	Pancreas	USA	Connecticut:Black	81	14.7
C30-31	Nose,sinuses	Argentina	Concordia	5	1.7
C32	Larynx	Spain	Zaragoza (91-95)	558	18.0
C33-34	Trachea,Bronchus,Lung	USA	Louisiana, New Orleans:Black	824	107.0
C37-38	Other thoracic organs	Poland	Lower Silesia	181	2.3
C40-41	Bone	Italy	Ferrara Province	24	3.3
C43	Melanoma of skin	Australia	Queensland	5156	51.1
C44	Other skin	Brazil	Goiania (95-98)	1993	169.5
C45	Mesothelioma	Italy	Genoa Province (93-96)	206	5.4
C46	Kaposi Sarcoma	Zimbabwe	Harare:African	1555	50.8
C47-49	Connective&Soft tissue	USA	Louisiana,Central Region:Black	9	5.3
C50	Breast	Canada	Yukon (83-97)	3	2.3
C60	Penis	Uganda	Kyandondo county	34	4.0
C61	Prostate	USA	Michigan,Detroit:Black	4919	202.0
C62	Testis	Switzerland	Zurich (93-96)	283	10.1
C63	Other Male genital organs	Italy	Biella Province (95-97)	3	0.6
C64	Kidney	CzechRepublic		6687	20.0
C65	Renal Pelvis	Denmark		336	1.7
C66	Ureter	Japan	Hiroshima (91-95)	42	1.2
C67	Urinary Bladder	Belgium	Limburg (97-98)	497	42.5
C68	Other Urinary Organs	Italy	Venetian Region (93-96)	344	5.2
C69	Eye	Uganda	Kyandondo county	76	2.9
C70-72	Brain,Nervous System	Croatia		1270	9.3
C73	Thyroid	USA	California,LosAngeles:Filipino	33	5.0
		USA	Hawaii:Filipino	26	5.0
C74	Adrenal gland	Italy	Biella Province (95-97)	1	1.1
		Malta		8	1.1
C75	Other Endocrine	China	Tianjin	126	1.1
C81	Hodgkin Disease	Argentina	Bahia Blanca	43	4.3
C82-85,C96	Non-Hodgkin Lymphoma	USA	California,SanFrancisco:NonHispanic White	1871	24.6
C88	Immunoproliferative Dis	France	Doubs	26	1.2
C90	Multiple Myeloma	USA	Connecticut:Black	53	9.6
		USA	Michigan,Detroit:Black	234	9.6
C91	Lymphoid Leukaemia	Canada	Yukon (83-97)	16	9.4
C92-94	Myeloid Leukaimia	USA	Hawaii:Filipino	46	8.5
C95	Leukaemia Unspecified	Colombia	Cali (92-96)	118	3.8
	Other & Unspecified	Belgium	Limburg (97-98)	310	27.8
C00-C95	All sites	USA	Michigan,Detroit:Black	12490	518.1

Source: Cancer Incidence in Five Continents Vol. VIII, IARC Scientific Publications No. 155

* where there is a difference in the years it is mentioned in the Population column.

Table 1(b): Highest Age Adjusted (World) Incidence Rate (AAR) reported in the World for each site for Females

ICD10	Site	Country	Population	No. (93-97)*	ASR
C00	Lip	Canada	Yukon (93-97)	4	3.1
C01-02	Tongue	Pakistan	SouthKarachi (95-97)	57	4.9
C03-06	Mouth	Pakistan	SouthKarachi (95-97)	108	9.2
C07-08	Salivary glands	Canada	Northwest Terrotpries (83-97)	9	3.8
C09	Tonsil	Switzerland	Geneva	26	1.8
C10	Other Oropharynx	Australia	Northen Territory	2	0.9
C11	Nasopharynx	China	Hong Kong	1560	8.3
C12-13	Hypopharynx	India	Chennai	143	1.9
C14	Pharynx Unsp	Philippines	Manila	46	0.7
C15	Oesophagus	China	Cixian	1536	123.1
C16	Stomach	Japan	YamagataPrefecture	3055	38.9
C17	Small Intenstine	USA	Michigan,Detroit:Black	68	2.1
C18	Colon	New Zealand		4132	28.6
C19-20	Rectum	Singapore	Chinese	787	12.1
C21	Anus	Poland	Kielce (93-96)	166	4.1
C22	Liver	Thailand	KhonKean	1240	35.4
C23-24	Gall Bladder	India	Delhi (93-96)	956	9.4
C25	Pancreas	USA	Connecticut Black	80	9.5
		USA	California,Los Angels:Black	346	9.5
C30-31	Nose,sinuses	USA	New Mexico:American Indian	4	1.1
C32	Larynx	USA	Connecticut:Black	21	2.8
C33-34	Trachea,Bronchus,Lung	Canada	Northwest Terrotpries (83-97)	145	72.0
C37-38	Other thoracic organs	Poland	Lower Silesia	111	1.0
		Koria	Daegu (97-98)	25	1.0
C40-41	Bone	China	Tianjin	210	1.7
		China	Wuhan	179	1.7
C43	Melanoma of skin	Australia	Queensland	3907	38.1
C44	Other skin	Brazil	Goiania (95-98)	2294	154.8
C45	Mesothelioma	Italy	Genoa Province (93-96)	60	1.2
C46	Kaposi Sarcoma	Uganda	Kyadondo County	533	20.4
C47-49	Connective&Soft tissue	Italy	Biella Province (95-97)	17	4.0
C50	Breast	Uruguay	Montevideo (93-95)	3679	114.9
C51	Vulva	Australia	Northen Territory	14	4.9
C52	Vagina	Brazil	Goiania (95-98)	22	1.4
		India	Poona	53	1.4
		Portugal	Vila Nova de Gaia	10	1.4
C53	Cervix Uteri	Zimbabwe	Harare:African	613	55.0
C54	Corpus Uteri	USA	Hawaii:Hawaiian	129	26.6
C55	Uterus Unspecified	Belgium	Limburg (97-98)	57	5.1
C56	Ovary	Iceland		130	16.2
C57	Other female gen. organs	Poland	Lower Silesia	343	3.3
C58	Placenta	VietNam	Hanoi	133	2.2
C64	Kidney	CzechRepublic		4526	10.2
C65	Renal Pelvis	Australia	NewSouth Wales	351	1.3
C66	Ureter	China	Taiwan (1997)	135	1.3
C67	Urinary Bladder	Zimbabwe	Harare:African	73	8.3
C68	Other Urinary Organs	Lithuania		221	1.4
C69	Eye	Zimbabwe	Harare:African	82	3.3
C70-72	Brain,Nervous System	Italy	Sassari	125	7.1
C73	Thyroid	USA	Hawaii:Filipino	97	19.4
C74	Adrenal gland	Korea	Kangwha County	1	1.5
C75	Other Endocrine	China	Shanghai	277	1.4
C81	Hodgkin Disease	Italy	Biella Province (95-97)	12	4.6
C82-85,C96	Non-Hodgkin Lymphoma	Belgium	Limburg (97-98)	163	13.1
C88	ImmunoproliferativeDis	Iceland		6	0.6
C90	Multiple Myeloma	USA	Michigan,Detroit:Black	248	7.1
C91	Lymphoid Leukaemia	Italy	Biella Province (95-97)	22	5.6
C92-94	Myeloid Leukaimia	Australia	Northen Territory	16	5.7
C95	Leukaemia Unspecified	Colombia	Cali (92-96)	110	2.9
	Other & Unspecified	Belgium	Limburg (97-98)	366	30.3
C00-C95	All sites	Switzerland	Geneva	6325	367.6

Source: Cancer Incidence in Five Continents Vol. VIII, IARC Scientific Publications No. 155

*where there is a difference in the years it is mentioned in the Population column.

Table 2(a): Highest Cumulative Incidence Rate (0-74 Yrs) reported in the World for each site for Males

ICD10	Site	Country	Population	No. (93-97)*	CR (0-74 yrs)
C00	Lip	Spain	Cuenca	132	1.85
C01-02	Tongue	India	Ahmedabad	599	1.15
C03-06	Mourh	India	Trivandrum	207	1.13
C07-08	Salivary glands	Canada	Northwest Territories (83-97)	14	0.40
C09	Tonsil	France	Calvados	123	0.77
C10	Other Oropharynx	Slovenia		346	0.70
C11	Nasopharynx	China	Hong Kong	4075	2.26
C12-13	Hypopharynx	France	Bas-Rhin	380	1.51
C14	Pharynx Unsp	France	Somme	57	0.41
C15	Oesophagus	China	Cixian	2047	22.79
C16	Stomach	China	Changle	1808	19.64
C17	Small Intenstine	USA	Louisiana,Central Region:Black	7	0.37
C18	Colon	Japan	Hiroshima (91-95)	2096	7.31
C19-20	Rectum	Japan	Hiroshima (91-95)	960	3.46
C21	Anus	Poland	Kielce (93-96)	146	0.64
C22	Liver	Thailand	Khonkean	2811	11.07
C23-24	Gall Bladder	Korea	Busan (96-97)	245	1.26
C25	Pancreas	USA	Connecticut:Black	81	1.91
C30-31	Nose,sinuses	Argentina	Concordia	5	0.24
C32	Larynx	USA	Louisiana,NewOrleans:Black	129	2.20
C33-34	Trachea,Bronchus,Lung	USA	Louisiana, New Orleans:Black	824	13.84
C37-38	Other thoracic organs	Poland	Lower Silesia	181	0.26
C40-41	Bone	China	Jianshan	33	0.36
C43	Melanoma of skin	Australia	Queensland	5156	5.39
C44	Other skin	Brazil	Goiania (95-98)	1993	19.43
C45	Mesothelioma	Italy	Genoa Province (93-96)	206	0.67
C46	Kaposi Sarcoma	Zimbabwe	Harare:African	1555	4.89
C47-49	Connective&Soft tissue	USA	Louisiana,Central Region:Black	9	0.66
C50	Breast	Canada	Yukon (83-97)	3	0.26
C60	Penis	Uganda	Kyandondo county	34	0.51
C61	Prostate	USA	Michigan,Detroit:Black	4919	27.74
C62	Testis	Switzerland	Zurich (93-96)	283	0.80
C63	Other Male genital organs	Kuwait	NonKuwaities (94-98)	1	0.12
C64	Kidney	CzechRepublic		6687	2.47
C65	Renal Pelvis	Denmark		336	0.23
C66	Ureter	Japan	Hiroshima (91-95)	42	0.16
C67	Urinary Bladder	Italy	Genoa Province (93-96)	1626	5.04
C68	Other Urinary Organs	Italy	Venetian Region (93-96)	344	0.59
C69	Eye	Uganda	Kyandondo county	76	0.22
C70-72	Brain,Nervous System	Croatia		1270	1.05
C73	Thyroid	USA	California,LosAngeles:Filipino	33	0.59
C74	Adrenal gland	USA	NewMExico,AmericanIndian	2	0.10
C75	Other Endocrine	China	Tianjin	126	0.11
C81	Hodgkin Disease	Argentina	Bahia Blanca	43	0.41
C82-85,C96	Non-Hodgkin Lymphoma	USA	California,SanFrancisco:NonHispanic White	1871	2.51
C88	ImmunoproliferativeDis	France	Doubs	26	0.18
C90	Multiple Myeloma	USA	Michigan,Detroit:Black	234	1.20
C91	Lymphoid Leukaemia	Canada	Yukon (83-97)	16	1.31
C92-94	Myeloid Leukaimia	USA	Hawaii:Filipino	46	0.86
C95	Leukaemia Unspecified	Colombia	Cali (92-96)	118	0.41
	Other & Unspecified	Belgium	Limburg (97-98)	310	3.50
C00-C95	All sites	USA	Michigan,Detroit:Black	12490	65.91

Source: Cancer Incidence in Five Continents Vol. VIII, IARC Scientific Publications No. 155

* where there is a difference in the years it is mentioned in the Population column.

Table 2(b): Highest Cumulative Incidence Rate (0-74 Yrs) reported in the World for each site for Females

ICD10	Site	Country	Population	No. (93-97)*	CR (0-74 yrs)
C00	Lip	Thailand	KhonKean	85	0.37
C01-02	Tongue	Pakistan	SouthKarachi (95-97)	57	0.61
C03-06	Mourh	Pakistan	SouthKarachi (95-97)	108	1.04
C07-08	Salivary glands	Canada	North west Territories (83-97)	9	0.43
C09	Tonsil	Switzerland	Geneva	26	0.21
C10	Other Oropharynx	Australia	Northen Territory	2	0.11
C11	Nasopharynx	China	Hong Kong	1560	0.85
C12-13	Hypopharynx	India	Chennai	143	0.23
C14	Pharynx Unsp	Philippines	Manila	46	0.08
C15	Oesophagus	China	Cixian	1536	15.49
C16	Stomach	China	Changle	3055	4.55
C17	Small Intenstine	USA	Michigan,Detroit:Black	68	0.26
C18	Colon	Canada	Prince Edward Island	183	3.15
C19-20	Rectum	Japan	Hiroshima (91-95)	519	1.43
C21	Anus	Poland	Kielce (93-96)	166	0.49
C22	Liver	Thailand	KhonKean	1240	4.54
C23-24	Gall Bladder	India	Delhi (93-96)	956	1.12
C25	Pancreas	USA	Connecticut:Black	80	1.17
C30-31	Nose,sinuses	Kuwait	NonKuwaitis (94-98)	1	0.14
C32	Larynx	USA	Connecticut:Black	21	0.38
C33-34	Trachea,Bronchus,Lung	Canada	Northwest Terrotpries (83-97)	145	9.10
C37-38	Other thoracic organs	Korea	Daegu (97-98)	25	0.14
C40-41	Bone	China	Changle	17	0.21
C43	Melanoma of skin	Australia	Queensland	3907	3.75
C44	Other skin	Brazil	Goiania (95-98)	2294	17.21
C45	Mesothelioma	Italy	Genoa Province (93-96)	60	0.14
C46	Kaposi Sarcoma	Zimbabwe	Harare:African	554	1.69
C47-49	Connective&Soft tissue	Italy	Biella Province (95-97)	17	0.35
C50	Breast	Uruguay	Montevideo (93-95)	3679	13.21
C51	Vulva	Australia	Northen Territory	14	0.26
C52	Vagina	Brazil	Goiania (95-98)	22	0.18
C53	Cervix Uteri	Zimbabwe	Harare:African	613	6.82
C54	Corpus Uteri	USA	Hawaii:Hawaiian	129	3.12
C55	Uterus Unspecified	Belgium	Limburg (97-98)	57	0.62
C56	Ovary	Iceland		130	1.82
C57	Other female gen. organs	Poland	Lower Silesia	343	0.36
C58	Placenta	Canada	NewFoundland	3	0.08
C64	Kidney	CzechRepublic		4526	1.25
C65	Renal Pelvis	Australia	NewSouth Wales	351	0.18
C66	Ureter	China	Taiwan (1997)	135	0.17
C67	Urinary Bladder	Zimbabwe	Harare:African	73	1.03
C68	Other Urinary Organs	Lithuania		221	0.18
C69	Eye	Zimbabwe	Harare:African	82	0.3
C70-72	Brain,Nervous System	Italy	Sassari	125	0.78
C73	Thyroid	USA	Hawaii:Filipino	97	1.91
C74	Adrenal gland	Mali	Bamako (94-96)	2	0.07
C75	Other Endocrine	China	Shanghai	277	0.12
C81	Hodgkin Disease	Argentina	Bahia Blanca	40	0.34
C82-85,C96	Non-Hodgkin Lymphoma	Belgium	Limburg (97-98)	163	1.54
C88	ImmunoproliferativeDis	Iceland		6	0.08
C90	Multiple Myeloma	USA	California,SanFrancisco:Black	114	0.88
C91	Lymphoid Leukaemia	Canada	Qucbec	167	0.64
C92-94	Myeloid Leukaimia	Australia	Northen Territory	16	0.63
C95	Leukaemia Unspecified	Colombia	Cali	110	0.30
	Other & Unspecified	Belgium	Limburg (97-98)	366	3.60
C00-C95	All sites	Switzerland	Geneva	6325	41.18

Source: Cancer Incidence in Five Continents Vol. VIII, IARC Scientific Publications No. 155

* where there is a difference in the years it is mentioned in the Population column.

A REPORT ON POST GRADUATE TRAINING IN W.H.O

From Research to Practice: Post-graduate Training in Reproductive Health / Chronic Disease

Dr. B. Ganesh
Tata Memorial Hospital

I was deputed by TMH to attend a post-graduate training in Chronic diseases at the World Health Organization (WHO), Geneva from 3 March, 2003 - 11 April, 2003. The training was organised jointly by Geneva Foundation for Medical Education and Research (GFMER), the UNIDP/UNFPA/WHO/World Bank Special Programme for Research in Human Reproduction, Department of Reproductive Health and Research, Family and Community Health Cluster (WHO/RHR) and the WHO Non-communicable Diseases and Mental Health Cluster (WHO/NMH) in collaboration with The Department of Health of the Canton of Geneva, The Faculty of Medicine, Geneva University and Geneva Medical Association.

In view of the success of the Postgraduate Course in Reproductive Medicine and Reproductive Biology conducted by WHO Collaborating Centre for Research in Human Reproduction, Geneva over the last 11 years, it was proposed to expand its scope of activities and address other areas of health as well. Thus this programme was organised by GFMER and the WHO this year to address two important areas of health, i.e. Reproductive medicine and Reproductive Biology and Chronic diseases.

The primary aims and objectives of the training programme were to:

- strengthen the research and research synthesis capabilities of health professionals and through this the research capacity of their institutions.
- acquaint the student with the most recent technological advances in reproductive health/chronic disease and conduct a critical appraisal of the strength of the supporting scientific evidence.
- enable the student to identify and address priority areas in reproductive health/chronic disease.
- provide skills in research methodology and scientific writing to allow the student to initiate research, research synthesis and/or participate in research work appropriate to health programmes in their home country.

The specific objectives of the programme were to:

- provide postgraduate training during the first year, for approx 15 students from developing countries in economic transition in methodological issues in health research and reproductive medicine and reproductive biology.
- Provide postgraduate training for approx 15 students from developing countries and in economic transition in methodological issues in health research and chronic disease.

XIX ANNUAL REVIEW MEETING NCRP
TATA MEMORIAL HOSPITAL- MUMBAI

XIX ANNUAL REVIEW MEETING NCRP. Contd....

TUMOUR REGISTRY WORKSHOP - WHO - CANCER INSTITUTE (WIA) CHENNAI

The course was conducted jointly by academic staff and private practitioners from Geneva and WHO technical staff, thus giving the training programme a unique global public health dimension.

There was a grand Opening ceremony at the WHO main auditorium, addressed by GFMER and WHO faculty. There were common lectures for reproductive and chronic disease for the first two weeks.

In this first part of the course, the main focus was on introduction of basics of epidemiology, types of epidemiological studies, techniques of data collection, analysis and interpretation. The lectures were based on illustrations from published articles. Randomized trial studies were emphasized more and its importance in terms of acceptance, validity and reliability in clinical research. The faculty included WHO staff, gynaecologists and health-care professionals from GFMER and the medical university.

The inaugural lecture was by Prof. E Diczfalusy on 'Fertility in ageing societies: Quo Vadimus?' followed by Dr.Strong's lecture on Chronic diseases in developing countries.

An introduction to the course was given by Dr. J Villar and Dr. Regina Kulier from GFMER followed by visit to the WHO library. Dr. J Villar demonstrated in his deliberation that there was a gap between evidence and practice in reproductive health. Dr. D Yach, Executive Director, NCD, gave a very impressive lecture on the gaps between research and practice in Chronic diseases where he focussed and reiterated on the anti-tobacco efforts being undertaken by WHO. A visit to the Central Medical University library was arranged where we were exposed to the techniques of research tool, 'the internet search'. Dr. Campana and Dr. Morabia illustrated the various types of epidemiological studies, Cohort-study and Case-control study with apt illustrations. This was followed by Dr. Piaggio's talk on 'Community intervention trials'. An introduction to Cochrane Collaboration library was given by Dr. M Clarke, Director. He elaborated the breast study, a large international multicentric study that is in progress across the world. Methodological issues in measures of reproductive and chronic diseases were dealt by Dr. Bertran and Dr. Armstrong. Dr. M de Onis elucidated the importance of measurement of anthropometric parameters in nutritional studies. Dr. Merialdi's lecture on randomised controlled trials covered the validity and importance of RCT. Dr. Gulmezoglu demonstrated the various aspects in meta-analysis of individual randomisation and community trials with classic examples. Ethical aspects in research was summarized by Dr. E Vayena which concluded the first part of the course.

The next 4 weeks of training were designed to focus on chronic diseases and reproductive health separately in two groups.

The course outlined the following themes on Chronic disease, prevention and control:

Health transition; double burden of disease etc.

Chronic disease prevention programmes, Community interventions; integrated chronic disease prevention.

Focus on specific conditions

Stroke - special focus on continuation of care, from prevention to secondary prevention, acute care, rehabilitation and long-term care

Cancer -	illustration through breast and cervical cancer epidemiology
Diabetes -	On increasing prevalence in developing countries, healthy diet and control of obesity
Mental Health -	focus on depression
Cardiovascular diseases -	focus on coronary heart diseases and smoking
Violence and Injuries	

Monitoring and evaluation of Data information sources and surveillance, stepwise approach

The chronic diseases health system model with reference to the interface with PHC, compliance and adherence

Research design for policy and community interventions with developing research protocols and proposals

The double burden of diseases, health transition and NCD risk were discussed by Dr. A. Kalache. He showed that the world is ageing and the proportion of people aged over 60 years will increase and the factors to which they are exposed will also play a vital role in determining the incidence and prevalence of health conditions. Most of the countries, including India are showing an epidemiologic transition, transition in life-style, dietary habits, nutritional changes etc.

Dr. Raphel Bengoa, Dr. Kalache and Dr.Armstrong's lectures covered the areas of primary prevention in terms of diet and physical activity.

Primary prevention of smoking and alcohol with reference to cancers and respiratory diseases. Secondary prevention through screening for breast cancer, cervix cancer and hypertension were discussed by Dr. Sepulveda, Dr. Viquerat and Dr. Mathers. A case of cervix cancer screening, its logical steps, implementation and its effectiveness were discussed.

Dr. Bonita, a senior WHO professor, delivered a lecture on an interesting topic, Stroke, which is one of the leading chronic disease conditions. She also covered the STEPS in surveilllance. Prof Puska, Asst Director, NCD, who has been working on the community intervention with regard to global initiative on diet and physical activity gave a talk on some of the proposals, covered in Draft proposal for Diet. Dr. Bettcher, talked on tobacco convention, the first of the kind where WHO has taken great efforts to formulate and promote anti-tobacco activities. A mock-exercise of the management of cancer control program was conducted by Dr. Ulrich and Dr. Sepulveda in which the students actively participated in actually planning a cancer control program. Diabetes, one of the leading chronic diseases, was introduced by Dr. Assal, covering the risk factors and prevention. Dr. Abegunde, talked on the CVD's, mainly on CHD and smoking and showed the rising trend of this disease. Violence and injuries are on the rise globally due to various factors, due to alcohol, drugs etc. Dr. Villaveces and Dr. McGee showed the data in support of their contention and provided some of the guidelines that are being followed in some of the developing countries. A basic normal state of health is necessary to lead a normal life. Depression is one of the major causes of concern which affects man in different ways and state of people who are mentally depressed and rehabilitation were discussed in detail by Dr. Bertolote. Dr. Epping touched upon an important topic, health system in chronic disease. The health system model, primary health system, was existent in many developing countries. She said that how people

adhere to the system and how the Government or State utilizes the system was of prime importance. Dr. Pekka and Dr. Bengoa talked on developing policies for NCD prevention where they illustrated the implications and gain in promoting these policies. Finally Dr. Beaglehole concluded with policies for chronic disease prevention.

To summarize, the training programme was of great value and enriched my knowledge, not only on cancer but also on other chronic diseases. It was mandatory for every student to work on a project related to their discipline of interest and I worked on 'control of cervical cancer in India with special reference to community intervention' and Oral presentation was a part of the examination, besides written examination, for evaluation.

I am thankful to Dr. KA Dinshaw, Director, Tata Memorial Centre, for giving me this opportunity to attend the training programme and GFMER and WHO for financial assistance.

INTERPRETATION OF AMBIGUOUS TERMINOLOGY

SEER PROGRAMME - US

Using Ambiguous Terminology to Determine Reportability.

Note:- ***Always review the case with the physician and/or pathologist if there is any question regarding the terminology.***

Consider as diagnostic of cancer	*NOT considered diagnostic of cancer**
apparent(ly)	cannot be ruled out
appears to	equivocal
comparable with	possible
compatible with	potentially malignant
consistent with	questionable
favor(s)	rule out
malignant appearing	suggests
most likely	worrisome
presumed	
probable	*without additional information
suspect(ed)	
suspicious (for)	Do not include patients who have a diagnosis consisting only of these terms.
typical of	

Exception: If the cytology is reported as 'suspicious', do not interpret this as a diagnosis of cancer. Abstract the case only if a positive biopsy or a physician's clinical impression of cancer supports the cytology findings.

If a phrase such as 'strongly suggestive', 'highly worrisome', or 'suspicious for but not diagnostic of' is used, disregard the modifying phrase and refer to the guidelines above regarding the primary term.

Approved for use effective 01/01/1998 by NAACCR Uniform Data Standards committee 11/97.

The Myths In Medicine About Cancer

Kumara Swamy, M.D., C. Ramesh Ph.D.,
Kidwai Memorial Institute of Oncology, Bangalore

Summary

This review article presents the basic four cardinal myths in medicine enunciated by the UICC/WHO meeting on under graduate education in its applicability to cancer education of the medical fraternity and public. The article also puts forth the other common myths encountered in the management of cancer, more so in the management of terminally ill, as a public health concept.

UICC/WHO Meeting on Undergraduate Education in Cancer in the European Region*, has identified four cardinal myths in medicine as obstacles to effective learning. These four factors identified by the Report are very well applicable to cancer also.

The **first myth** is undoubtedly the whole spirit of medicine at present, which is almost completely at odds with the spirit needed for the approach to cancer. Medicine is still seen by those who practice it, and those who receive it, to be predominantly about cure or successful treatment. It is not seen to be about preventive Epidemiology, primary health care delivery, community needs, health education, the management of irreversible conditions, living with the disease qualitatively, palliative care, quality of life etc.

The **second myth** lies within the bounds of medical school itself. The people who frame the medical school curriculum are still obsessed with imparting knowledge and to a lessor extent skills, and only minimally with the cultivation of attitudes As Milton Mayer has put it, one thing the average doctor don't learn in school is the nature of human society, its purpose, its history and its needs; if medicine is necessarily a mystery to the average man, nearly everything else is necessarily a mystery to the average doctor.

The **third myth** is of special importance in oncology because medicine stresses almost totally on the acquisition of knowledge. In reality dissemination of that knowledge is as important as acquisition of knowledge. Education of the patient & community and empowering them should be given as much importance if not more.

The **fourth myth** is as a consequence of inadequate and, in some cases, erroneous knowledge. Only a few medical schools include any teaching about counseling on death and dying, and they often restrict such teaching to short periods in behavioral science or psychiatry courses. Two-thirds of the general public, for example, think that cancers are the most common causes of death, over half consider them to be most alarming group of diseases, and a fifth believe that cancers are never curable. Surprisingly too, members of the nursing and other caring professions prove to be as pessimistic as the general public.

These above myths, in conclusion leads to the necessity for taking into account links from the cell level, then the tissue, the organ, the organism and finally the society levels. In addition to these primary factors, there is a long list of myths in cancer. The following are some of them.

1. Recent onset: Most think that cancer is of recent origin. It is quite natural that public is unaware of the fact that cancer is the result of years of misuse of lifestyle habits since the pathological process of disease is not immediate unlike infectious diseases. Also, most do not appreciate that the answer to cancer prevention is to be found in our environment. A typical cancer follows the following pattern of evolution.

Induction phase	15- 30 years.
In-situ phase	05- 10 years.
Invasive phase	01- 05 years.
Dissemination phase	01- 05 years.

Therefore early detection is not the only important thing, but more importantly strategies have to be evolved to identify and interfere at the induction phase itself. Even at the in-situ phase cure rate is almost 100%.

2. Not curable: Cancer is viewed as if all the other diseases are easily identifiable & always curable. Patients learn to live with the disease for years together in many of the degenerative disorders. Cancer is in fact follows the degenerative disorders in some of its features. Cancer could be the outcome of 'degeneration of immune surveillance system' in latter part of life. It needs enormous effort on the part of medical fraternity to convey the message to the public that chances of cure is highest when detected early & eminently preventable.

3. Most alarming of disease and most feared: There are several other diseases, which can be as much incapacitating if not more. Like other diseases quality of life and comfort before death could be considerably improved by a relatively small reshuffling of resources and this requires the will to do so.

4. Cause not known: Link between life style and cancer is not appreciated, since the lag time between the start of causative life style and the appearance of cancer is in terms of many years.

5. Nothing can be done after treatment fails or in terminal stage: The 'little' things that can be done by the family physician in controlling pain, infection; managing nutrition, integration of psychological and spiritual aspects along with rehabilitative and spiritual support can be of incalculable benefit to the patient and the family. Many of these aspects of palliative care are also applicable earlier in the course of the illness, in conjunction with anti cancer treatment. And no patient should be told that 'nothing can be done now' at any stage. When first diagnosed of cancer, Senator Richard Neuberger remarked 'new appreciation of things I once took for granted- eating lunch with a friend, scratching my cat Muffet's ears and listening for his purrs, the company of my wife, reading a book or magazine in the quite of my bed lamp at night, raiding the refrigerator for a glass of orange juice or a slice of toast. For the first time, I think I actually am savoring life' (- Better Homes and Gardens magazine).

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1.Undergraduate Education in Cancer in the European Region. EURO Reports and Studies number 49. Obstacles to effective learning in Oncology. Report of UICC/WHO meeting, April 1981, Geneva.

Biostatistics In Medical Research

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The twentieth century is the century of misconception of scientific inventions and century of war in the History of mankind. It is well known that 'No science, is entirely self contained. Each borrows the strength of its ultimate foundations from something outside itself, such as experience, or logic or metaphysics'.

The subject of statistics has played a major role in the process of establishing any theory in any branch of science and technology of this modern era. The development and application of statistics, probability, computing and mathematics to the biological and biomedical fields paved way for a separate subject 'Biostatistics' or 'Biometry'. However, the term Biostatistics has been more associated with applications in medical research rather than the wider area of Biological Research. By this definition it is clear that a successful Biostatistician has to be a scholar in mathematical statistics, capable of applying computing techniques to a subject matter efficiently. A mathematical statistician without subject-matter knowledge is considered to be an odd person in a medical research group. The same is the status for a subject-matter expert without adequate knowledge in statistics if the group is a true research team. The Biostatistician plays an important role in planning, design, conduct, analysis and interpretation of research and thus has the important role in decision making. In almost all research institutions, there is a research committee or an ethics committee due to increased awareness of legal and ethical responsibilities. Unlike in the west wherein a Biostatistician is a part and parcel of the research, many institutions in our country do not include statistician in such committees. Still research is carried out without consulting statisticians and only when they find problem at the end they approach a statistician. Thus, even now, the statisticians are put in the position of being expected to salvage an increasing number of intractable research endeavors.

An off shoot of revolution of computers is the statistical packages, which can handle hundreds of variables quickly and in real time. However the easy availability of these packages has increased the number of intractable researches. Off late it has been frequently seen that persons without proper training or understanding of Biostatistics often misuse these packages. Many Biostatisticians have experienced these misused occasions and have warned the danger of using these packages. For instance, one reads about coding of a variable and assigns '1' for Male, '2' for Females and '3' for Unknown. If he has two groups, he applies student's t-test on gender to find out the gender differences between two groups. The computer gives some output and the researcher gives some interpretation. Using t-test, F-test for comparing discrete variables, using Analysis of Variance (ANOVA) on percentages (An article published in an international Journal contained this), indiscriminate use of statistical terminology such as Incidence, Odds Ratio (Few to mention) at their own will are some of the most frequently encountered mistakes. This clearly explains the need for proper training in Biostatistics at all levels of curriculum.

It has been emphasized that design is the most important part, whether it is experimental research including intervention programs or survey research, since analysis part will be taken care of by the design. In certain departments, both in universities and research institutions, statisticians are requested to take classes on analysis and the subject -matter experts take care of the design part. It is ideal if the statistician handles both the design and analysis part as, it is the design that prompts for proper analysis.

There has been a steady increase in the application of statistical methods such as survival analysis, multivariate analysis that includes use of regression methods etc. which is evident from the papers presented at various medical conferences. This is generally expected in the electronic and communication era. There are more than 7,000 websites on survival models alone.

To conclude, the main purpose of this article is to emphasize and facilitate communication and build links among scientists engaged in medical research and teaching of Biostatistics and to enhance the development and use of statistics in medicine, biology and health and to promote proper application of statistical methods for drawing valid and reliable conclusions.

(Condensed from 'Statistical Methods and Application in Biology and Medicine' - Proceedings of the first joint conference of Indian Society for Medical Statistics and the International Biometric Society (Indian Region) held at NIMHANS, Bangalore, December 2 - 4, 1999).

An Appraisal Of The Active Follow Up System In The Hospital Cancer Registry, Cancer Institute (WIA), Chennai

Dr. R. Swaminathan, R. Rama, Dr. V. Shanta
Cancer Institute (WIA), Chennai.

Introduction:

(i) Hospital Cancer Registry

The purpose of a Hospital Cancer Registry (HCR) is to serve the needs of the hospital administration, hospital's cancer programme and the individual patients (i.e.) the orientation of a HCR is towards administrative and patient purpose[1]. A HCR has been in vogue at the Cancer Institute (WIA) since its inception in the year 1955. It has been a repository of valuable data since then and has been serving the needs of the institute on the research front and patient care. The modus operandi of the HCR at the Cancer Institute (WIA), has been discussed in detail elsewhere[2].

(ii) Follow up

When the focus lies on the continued well-being and care of the patient, it is only natural to place great emphasis on 'follow-up'. Hence, follow up becomes an inherent part of HCR and is integrated into its functioning. In a lifetime follow up of cancer cases, the end point of follow up is the occurrence of the death of the patient. If the interest is on the estimation of survival probability, say at five years from the index date, then we encounter the following possibilities: (1) The person is known to be dead wherein we can estimate the exact survival time, 't'. Here follow up

is complete. (2) The end of possible follow up period occurs before the end of 't'. Here the follow up is complete but without experiencing the outcome studied. (3) The person is lost to follow up during the period 't', say due to migration from the surveillance area of the registry or whereabouts not known etc. Here the follow up is incomplete[3]. It is this category of persons that a HCR should strive hard to bring it to barest minimum possible.

The follow up of subjects in a HCR can generally be achieved in two ways. The first is by the 'passive method'. This comprises persons who are on regular follow up at the OPD and/or in regular correspondence with the hospital, 'on their own' or the vital status of persons are made available by the linkage of data from the vital statistical division of the areas. The second is the 'active method'. This comprises persons whose information on survival status is sought by using clinical follow up systems, by contacting the patients or patients' families directly by means of postal/telephone/e-mail/house visit enquiries.

With this background, this write-up is aimed at (1) The description of the methods of active follow up employed by the HCR at the Cancer Institute (WIA) and (2) An appraisal of the effectiveness of the existing follow up system by the extent of complete follow up achieved (say, in estimating a 5-year survival probability) through an empirical analysis.

Material:

All incident cases of cancers of the uterine cervix (ICD-9:180; n=549) and female breast (ICD-9:174; n=316) who were admitted and received cancer directed treatment at the Cancer Institute (W.I.A) during 1st January to 31st December 1995 formed the study material.

Method:

The principal method used in this study is the existing follow up system in the HCR at the Cancer Institute (WIA) with the hierarchy of various active follow up methods (for Chennai and non-Chennai cases) as summarized in Figure 1. The patients accepted for cancer directed treatment, at the time of admission, are requested to furnish 'five to seven' addresses of patients' close relatives/friends, work place, referring/family physician along with the telephone numbers/e-mail address (if any). Emphasis is given in getting the address of known person(s), if any, in Chennai. The active follow-up starts when the patient fails to report at the OPD on the scheduled date. Until then, patients are only on passive follow up with the entries on the dates of their visits made in the case record. At the expiry of one month of patient's failure to report on the scheduled date, a series of active follow up activities are commenced in a particular sequence. Firstly, a postal enquiry is made at the permanent address using the pre-paid postage cards. The letters are written in three languages: English, Tamil and Telugu according to the language spoken, scheduling a new appointment date. The dates of enquiries and the response are entered into the case record. If there is no response from the patient after a month of writing the letter, a second reminder is sent. If status quo, letters are written to the other addresses in the case record. In these letters, the enquiry is primarily to know the current health status of the patient and a request is made to contact the patient implying the importance of follow-up. E-mail and telephone enquiries precede the postal ones wherever available. If no response is received to any of the above, the assistance of the village headman/Post master/Rotary/Lions clubs help is sought. Cured patients from the same/nearby residential areas, who are currently on regular follow up, are also approached for knowing the vital status of the defaulters of follow up.

TUMOUR REGISTRY WORKSHOP - WHO - CANCER INSTITUTE (WIA) CHENNAI Contd....

Dr.P.S.S. Sundar Rao

Dr. S.Radhakrishna

Barshi Cancer Registry

CanReg-4 Participants-NCRP/IARC

TUMOUR REGISTRY WORKSHOP - RCC / WHO - TRIVANDRUM

The index date of follow up was the date of diagnosis of cancer. The closing date for this follow up study was 1st January 2001 so that all registered cases had a potential follow up time of 5-years. Complete follow up (CFU) in this study refers to persons either known to be dead or having been traced to be alive as on the closing date of follow up. Incomplete follow up (IFU) refers to persons who were known to be alive at some point of time during the follow up period but whose vital status is not known on the closing date of follow up (i.e.) these are the cases who were lost to follow up within 5 years from the index date.

Results:

In any follow up study in a HCR, the proportion of patients on passive follow up serves as an indicator on the dependence and the extent to which the active follow up mechanisms are to be in-built into the registry follow up system. Table 1 shows that only 16.6% of cancer cervix and 17.7% of cancer breast patients were either on regular follow up at the OPD or in correspondence 'on their own' and whose vital status (alive/dead) was known at the end of five years from the index date without any reminders from the registry or undertaking any active follow up intervention by the HCR. In the absence of linkage system of mortality data from areas outside Chennai, the reliance on active follow up methods to augment the follow up rate is very evident.

From table 2, it is observed that after all of the active methods of follow-up were employed by the registry, the complete follow up rate at five years from the index date had risen to 72.7% (an increase of 58.9 percent units from 18.6% by passive follow up) among cases of cancer of the uterine cervix and 76.6% (an increase of 56.1 percent units from 18.6% by passive follow up) among cases of cancers of the female breast. Further break-up of the augmentation of complete follow up by the exact method of active follow up employed makes interesting reading. While the mere availability of only the permanent address of the patient in the record could have fetched you 41% to 43% of complete follow up information for both cancers, an additional 13 to 14% of complete follow up information was made possible only due to the collection of more than one address other than the permanent one and by seeking the assistance of the postal and local body officials and voluntary service organizations in the area. It should always be borne in mind that to achieve this, at least 'one' reminder in some form was sent to 78% of defaulters of follow up, and more than one reminders in some form were sent to 61.7%, with an average of 'four' enquiry attempts per case. While collection of more addresses would guarantee improved results, this has to be integrated with tireless follow up enquiry attempts in some form with a minimum of 'one reminder' per year per case among the defaulters of follow up.

It is also essential that one has to evolve a follow up system that takes care of the 'migration' of people from one area to another and also is effective in dealing with different groups of persons by socio-economic, disease and prognosis related variables. Table 3 gives details of the proportions of persons with CFU and IFU with respect to urban/rural areas, house ownership and disease status at last seen date. There was not much of difference in CFU% among the persons who owned the house and those who lived in rented houses. Similarly, only minimal differences were forthcoming in the CFU% between urban and rural residents. These can be construed to indicate that the follow-up system has accounted for migration effectively and has yielded the results in the same manner. Hence, this follow up system can be translated for application in any HCR setting. The CFU% by clinical status of disease, on the last date on which the patient was

seen in the hospital, is the least among the category 'residual disease' (52.3% for cervix; 57.1% for breast) followed by NED (Cx:73.1%; Brt:77.7%), Progressive disease/Symptomatic treatment (Cx:76.3%; Brt:76.4%). This reiterates the need for a close monitoring of the enquiry attempts for different prognostic groups either in the form of increased frequency of enquiry attempts or making enquiry attempts as nearer to the last date seen as possible for certain groups to avoid ending up with an incomplete follow up later. The registry personnel must ensure good coordination with clinicians to identify such cases and for undertaking timely follow enquiry attempt. The above figures of complete follow up are based on real observations without any presumption on the prognostic probabilities.

Conclusion:

In order to describe completely the experience of cancer in a population, it is necessary to know not only its incidence and mortality, but also the survival of cancer patients[4]. In conducting the survival study, a careful and complete follow up is mandatory. In practice, follow up of registered cancer patients is not always complete. While there are many ways of estimating survival probabilities following various assumptions on cases with incomplete follow up[5-7], there should not be a dearth in the desire to enhance the availability of complete follow up and evolving an appropriate system to achieve this. The Hospital Cancer Registry at the Cancer Institute (WIA) has amply demonstrated the effectiveness of its system in dealing with different groups of patients and its applicability in any setting[8]. It only needs personnel from the registry to be dedicated exclusively for the purpose of dealing with follow up enquiry attempts and documentation.

In summary, cases accepted for cancer directed treatment need to be interviewed in detail for collecting information on more addresses other than the permanent residence, staff of the registry should be dedicated to monitor follow up operations exclusively; enquiry attempts on all defaulters/non responders to be carried out at least once every year; leave no stone unturned before classifying the case as 'lost to follow up', like establishing inter registry cooperation for linkage of cases from other registry areas. Cases from PBCR areas can be linked to the local mortality statistics.

The results obtained from the regular follow up system in the Hospital Cancer Registry, Cancer Institute (WIA) may not resemble the scenario prevailing in the developed countries. There have been better surveillance of cancer cases pertaining to specific projects/studies or trials, even in the Cancer Institute (WIA), which had additional resources to receive special attention. It must be remembered that a hospital cancer registry, unlike a PBCR, deals with patient attendances from all over the region with the distance traversed by cases ranging from <1 kms to >1000 kms thereby making follow up that much difficult. In a general follow up system, the current results are definitely encouraging. Nevertheless, there is always scope for improvement.

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Table 1: Complete and incomplete follow up information by methods of follow up: Cancers of the uterine cervix and female breast, 1995 through 2000, Hospital Cancer Registry, Cancer Institute (WIA), Chennai.

Method of follow up	Complete follow up (at 5 years from the index date)			
	Cervix		Breast	
	No.	%	No.	%
By passive method	102	18.6	70	22.2
By active method	297	54.1	172	54.4
By both methods	399	72.7	242	76.6
	Incomplete follow up (at 5 years from the index date)			
By both methods	150	27.3	74	23.4
Total	549	100.0	316	100.0

Table 2: The break-up of complete follow up cases by different levels of enquiry attempts by active follow up: Cancers of the uterine cervix and female breast, 1995 through 2000, Hospital Cancer Registry, Cancer Institute (WIA), Chennai.

Method of enquiry attempt* by active follow up	Complete follow up (at 5 years from the index date)			
	Cervix		Breast	
	No.	%	No.	%
Enquiry directed at the permanent address only (PA)	224	40.8	135	42.7
Enquiry directed at PA+ local/other addresses (LA)	49	8.9	31	9.8
Enquiry directed at PA+LA+ Post Master (PM)+Voluntary organizations	24	4.4	14	4.4
By all active follow up methods	297	54.1	172	54.4
By passive method	102	18.6	70	22.2
By active + passive methods	399	72.7	242	76.6
	Incomplete follow up (at 5 years from the index date)			
By all methods	150	27.3	74	23.4
Total	549	100.0	316	100.0

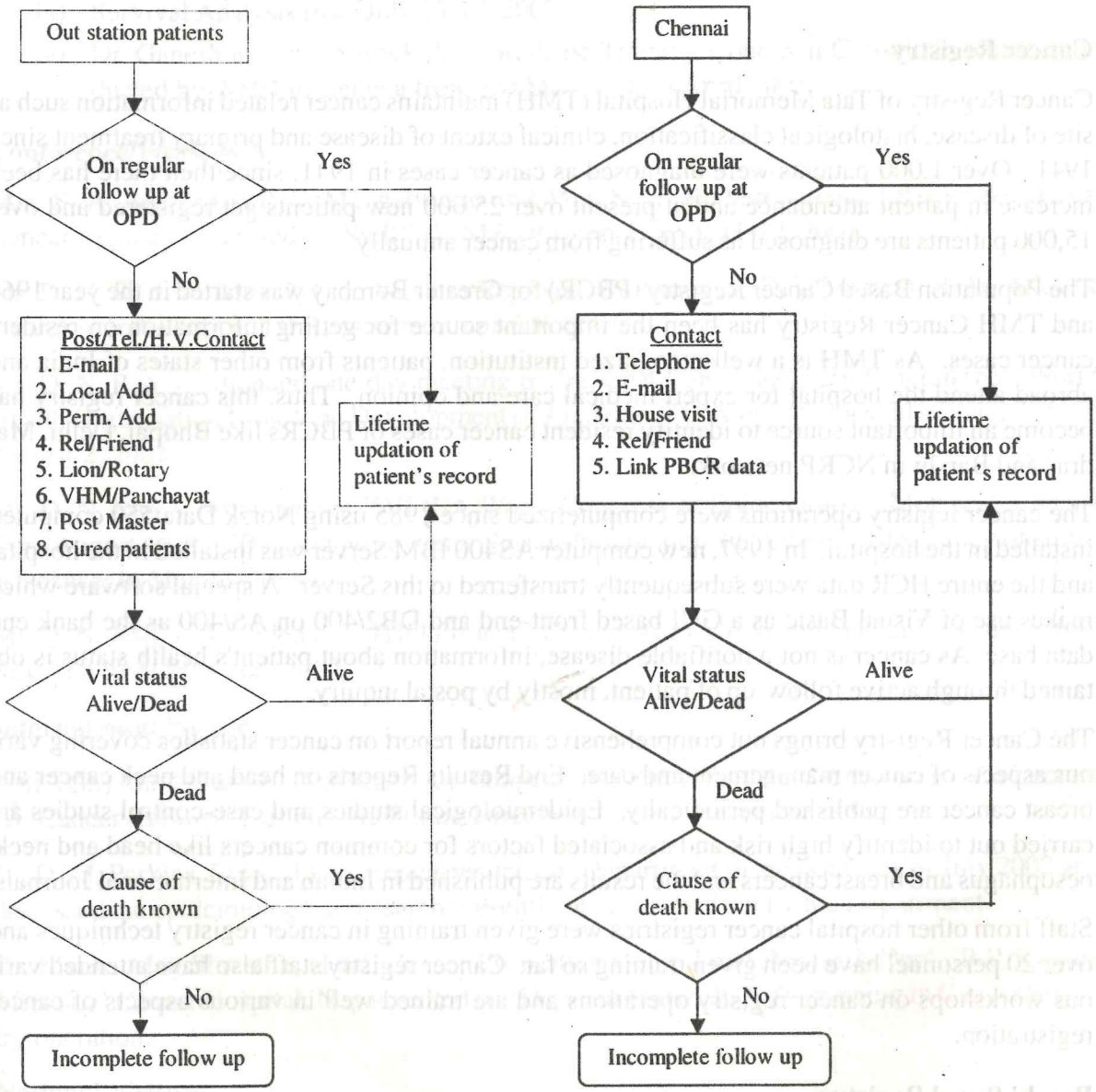
* E-mail, telephone and postal enquiries were made in that order, based on the availability of information and feasibility

Table 3: Follow up status at five years from index date by the groups of ownership of residence, urban/rural areas and disease status at the last date seen: Cancers of the uterine cervix and female breast, 1995 through 2000, Hospital Cancer Registry, Cancer Institute (WIA), Chennai

Residence	Cervix (549)			Breast (316)		
	Number of Cases	CFU%	IFU%	Number of Cases	CFU%	IFU%
Owned	400	71.8	28.2	193	77.2	22.8
Rented	149	75.2	24.8	123	75.6	24.4
Area of residence	Cervix (549)			Breast (316)		
Urban	135	77.6	22.4	184	79.4	20.6
Rural	264	70.4	29.6	132	72.7	27.3
Disease status at last seen in OP	Cervix (549)			Breast (316)		
NED	305	73.1	26.9	211	77.7	22.3
Residue	44	52.3	47.7	14	57.1	42.9
Advised Symptomatic treatment	198	76.3	23.7	89	76.4	23.6
CI death	2	100	-	2	100	-

CFU: Complete follow up IFU: Incomplete follow up

FLOWCHART OF FOLLOW-UP METHODS AT HBCR, CANCER INSTITUTE



HOSPITAL CANCER REGISTRY, MUMBAI
TATA MEMORIAL HOSPITAL, PAREL, MUMBAI - 400 012.

Principal Investigator: Dr. K.A. Dinshaw, Director
Officer-in-Charge: Mr. D. Nagaraj Rao

Cancer Registry

Cancer Registry of Tata Memorial Hospital (TMH) maintains cancer related information such as site of disease, histological classification, clinical extent of disease and primary treatment since 1941. Over 1,000 patients were diagnosed as cancer cases in 1941, since then there has been increase in patient attendance and at present over 25,000 new patients get registered and over 15,000 patients are diagnosed as suffering from cancer annually.

The Population Based Cancer Registry (PBCR) for Greater Bombay was started in the year 1964 and TMH Cancer Registry has been the important source for getting information on resident cancer cases. As TMH is a well-recognized institution, patients from other states of India and abroad attend the hospital for expert medical care and opinion. Thus, this cancer registry has become an important source to identify resident cancer cases of PBCRs like Bhopal, Delhi, Madras and Barshi in NCRP network.

The cancer registry operations were computerized since 1985 using Norsk Data 550 computer, installed in the hospital. In 1997, new computer AS400 IBM Server was installed in the hospital and the entire HCR data were subsequently transferred to this Server. A special software which makes use of Visual Basic as a GUI based front-end and DB2/400 on AS/400 as the bank end data base. As cancer is not a notifiable disease, information about patient's health status is obtained through active follow-up of patient, mostly by postal inquiry.

The Cancer Registry brings out comprehensive annual report on cancer statistics covering various aspects of cancer management and care. End Results Reports on head and neck cancer and breast cancer are published periodically. Epidemiological studies and case-control studies are carried out to identify high risk and associated factors for common cancers like head and neck, oesophagus and breast cancers and the results are published in Indian and International Journals.

Staff from other hospital cancer registries were given training in cancer registry techniques and over 20 personnel have been given training so far. Cancer registry staff also have attended various workshops on cancer registry operations and are trained well in various aspects of cancer registration.

Barshi Rural Registry

The TMH initiated the Barshi Rural Cancer Registry in collaboration with Ashwini Rural Cancer Research and Relief Society's, Tata Memorial Centre Rural Cancer Project, Nargis Dutt Memorial Cancer Hospital, Barshi, Solapur. The registry staff continued to help and guide in the methodology of the working of this registry and the cancer registry is one of the major sources for identifying cancer patients attending from Barshi area. This is the first Rural Population Based Cancer Registry in the country.

Training/Education

During the year Mr. Sanjay D. Talole attended the short course in Biostatistics conducted by Christian Medical College, Vellore. There were three courses on:-

i) Principles of Epidemiology & Multiple Linear Regression from July 1-5, 2002.

ii) Logistic Regression from July 8-12, 2002.

iii) Survival Analysis from July 15-19, 2002.

iv) Dr. Ganesh attend a 5 week Post Graduate Training Course in Chronic Diseases conducted by WHO in Geneva from 3rd March - 11th April 2003.

Conference/Workshop

Mrs. S. A. Sant, Mrs. P. V. Mangalvedhe and Mrs. S. H. Kothare attended the workshop on Cancer Registry organised by NCRP (ICMR) at Bhopal, April 11-12, 2001.

Mr. D. N. Rao - Attended the Western Regional Workshop on Development of An Atlas of Cancer in India held at TIFR, Mumbai, June 8-9, 2001.

Mr. D. N. Rao - Attended one day meeting on National Cancer Registry Programme - World Health Organisation Project on Development of An Atlas of Cancer in India held at Bangalore on August 2, 2001.

Mr. D. N. Rao - Attended the XVI IEA World Congress of Epidemiology, Montreal, Canada from August 18-22, 2002 and presented a Poster Presentation on 'A case-control study of stomach cancer in Mumbai, India.

Mr. D. N. Rao - Attended the WHO Project - Cancer Atlas Workshop held at Bangalore from July 31st to August 2nd, 2002.

International Visitors

Prof. (Dr.) Matti Hakama, University of Tampere, Finland visited our Dept. and gave a Lecture on 'Cancer Control - Current and Future Directions' on 8th December 1999.

Dr. D. M. Parkins, IARC, Lyon, France visited our Department in the last week of July 2002 and discussed the epidemiological research presently being carried out by the Department.

Dr. Murari Man Shrestha, Head, Cancer Prevention Control and Research Dept., B.P. Koirala Memorial Cancer Hospital, Nepal visited our Dept., in March 2002 for training in Cancer Registry operation.

National Visitors

Mrs. Sandhya Mahakal, Prince Aly Khan Hospital, Mumbai - Two weeks training programme on Cancer Registry from 1.6.1999.

Doctors from Armed Force Medical College (AFMC), Pune, visited during the year to get updated information about medical records management and other functions of the Cancer Registry and Epidemiological studies.

POPULATION BASED CANCER REGISTRY, MUMBAI
INDIAN CANCER SOCIETY, PAREL, MUMBAI - 400 012.

Principal Investigator: ***Dr. M.R. Kamat***
Deputy Director & Co-Investigator: ***Dr. B.B. Yeole***

Honors and Distinctions

1. Dr. B.B.Yeole received the prestigious B.G.Prasad (Gold Medal) Award for best research paper in epidemiology during the year 2001 from Indian Society of Medical Statistics.
2. Dr. B.B.Yeole was awarded the degree of a 'Docent' (Prof.) in Epidemiology by University of Tampere, Finland in March 2002.
3. Dr. B.B.Yeole visited Ile-Ife, Calabar, and Maidugiri Cancer Registries in Nigeria as a W.H.O. Consultant during 21st March 2003 to 22nd April 2003.
4. Dr.B.B.Yeole was invited as a faculty member to give lectures on Epidemiology by Cancer Research Mumbai Institute, Mumbai to Ph.D students during February 2003.

Conferences and Meetings

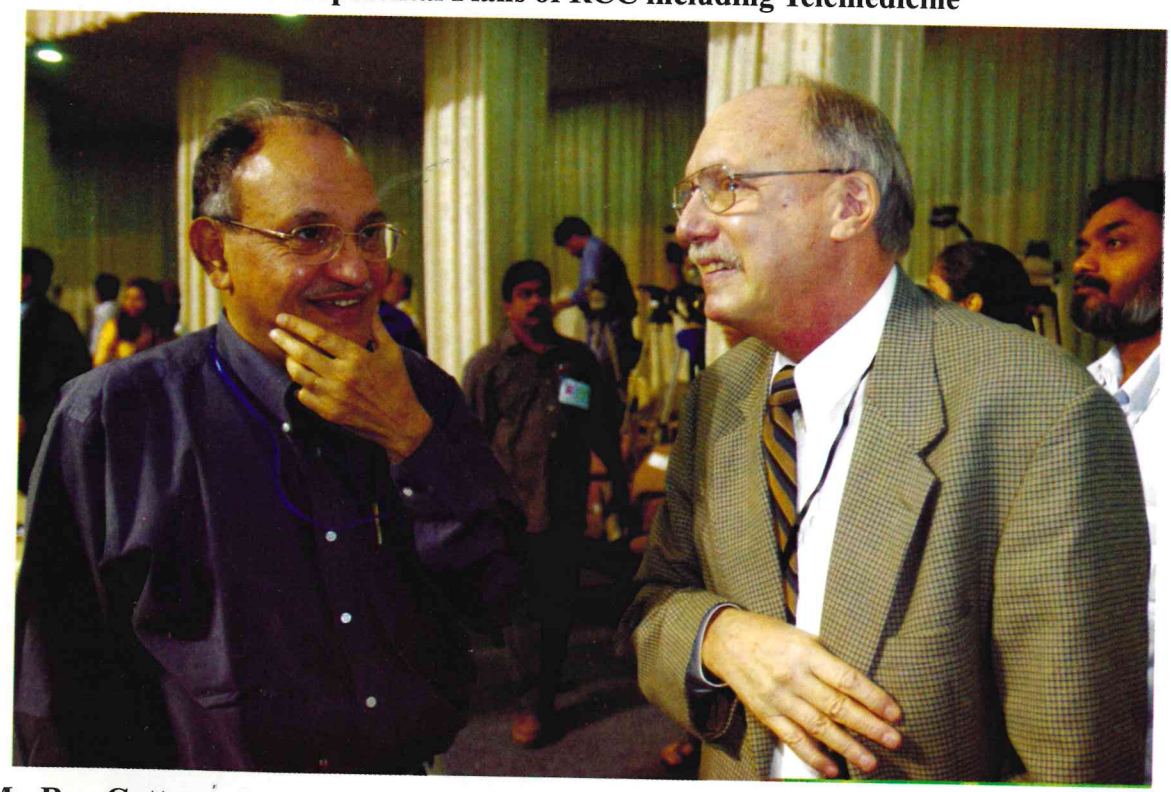
1. Dr. B.B.Yeole attended International conference on tobacco held at New Delhi during 9-11 April 2002.
2. Dr. B.B.Yeole was invited to give lecture on 'Epidemiology of breast cancer' at the CME meeting on 'Breast Cancer and Myeloid Leukemia' at Tata Memorial Center, Mumbai, during 6-7 April 2002.
3. Dr. B.B.Yeole presented the findings of 1999 data of Mumbai Cancer Registry at the Annual Review Meeting of National Cancer Registry Programme held at Tata Memorial Center during 20-21 November 2002.
4. Dr. B.B.Yeole attended the 24th Annual Review Meeting of the International Association of Cancer Registries (IACR) held at Tampere, Finland, during 24-27 June 2002 and presented a paper 'An Overview of Population Based Cancer Survival in Greater Mumbai'.

Training Programme

1. Ms. Swapna Methar, Computer Assistant, received International Cancer Technology Transfer Fellowship (ICRETT). Under this Fellowship she got training in CanReg-4 system, Linkage Programme and ICD Conversions Program at International Agency for Research on Cancer, Lyon, France under the supervision of Dr. Sankaranarayanan, during 13th January 2003 to 7th February 2003.
2. Ms. Swapna Methar, Computer Assistant, Mrs. Kavita Jadhav, Graduate Assistant, Mrs. Prachi Bandekar, Typist-Cum-Clerk, and Mrs. Vrushali Jahagirdar, (Pune Registry) attended, the course on CanReg-4 system organized by the International Agency for Research on Cancer, at Bangalore, India, during 4-7 March 2003.

INTERNATIONAL COURSE ON CANCER EPIDEMIOLOGY - METHODS AND PRINCIPLES. 1-12 SEPTEMBER 2003, IARC-RCC, TRIVANDRUM, INDIA

Smt. Sushama Swaraj Hon.Union Minister for Health visited RCC and Discussed Developmental Plans of RCC including Telemedicine



Mr. Ron Gottsegen, Administrative Director, Amritha Institute of Medical Sciences with Dr. M. Krishnan Nair, Director RCC Decided to organise Cancer registry in AIMS

3. Mrs. Kalpana Puranik, Research Assistant, attended the International Summer School on Cancer Registration and Application in Epidemiology organized by International Agency for Research on Cancer, at Lyon, France, during 26th May to 16th June 2003.

4. Dr. B.B.Yeole, Deputy Director, attended the 'Advances in Cancer Epidemiology-An International Course' held at International Agency for Research on Cancer, Lyon, France, 18-23 May 2003.

Retirement and Other Changes

1. Ms. Hansa Bhagat, Sr.Medical Social Worker, retired from services on 31st December 2001.

2. Mrs. Sunita Shahani, Medical Social worker, resigned from services from 5th February 2003.

3. Mrs. Medha Khandekar appointed as a Graduate Assistant from 3rd July 2001.

4. Mrs. Biljy Lonappan and Mrs. Komal Oswal have been appointed as Medical Social Workers from 3rd December 2001.

5. Mr. Atul Pawar appointed as a Biostatistian from 2nd January 2002.

Publications:

EPIDEMIOLOGICAL ASSESSMENT OF LUNG CANCER IN INDIA

B. B. Yeole

Introduction: Cancer of the lung is now the most frequent cancer in the World, but with wide geographical variation in risk. It is the leading cancer among males in many countries.

Methods: An attempt has been made to make an epidemiological assessment of lung cancer by a review of literature and studies by Bombay Cancer Registry.

Results & Discussions: Lung cancer is the most common cancer in the developed regions of the World. The highest incidence rates in the World are found among American Blacks (109.0 per 100,000 for males and 28.4 for females) and Maoris in New Zealand (101.3 and 68.1 for males and females respectively). The lowest are seen in India (5.8 for males and 1.2 for females in Madras) and in African populations (1.1 in males in Dakar). This International variation is well explained by different current and past exposures to the main cause of lung cancer–cigarette smoking. The difference in lung cancer rates in males and females is largely explicable on the basis of smoking habits. The risk for lung cancer tends to be higher in urban than in rural areas. This may be due to the higher prevalence of smoking among city dwellers, but there may also be a contribution of air pollution. Studies on lung cancer risk in relation to occupation reveal some interesting discrepancies, suggesting an excess risk due to specific occupational exposures. Indoor air pollution has been suspected as a possible etiological factor. Time trends in incidence and mortality rates for lung cancer are very striking. This cancer was relatively rare in the early years of the century but has now become the leading cause of death and illness from cancer today. Trends by age and sex in different countries can be accounted for almost entirely by national tobacco smoking habits, as reflected in the prevalence of smoking in different generations and the tar contents of the cigarettes they smoked.

Conclusion: Because of the risk for lung cancer in a generation is closely related to the smoking habits and because these habits tends to become established in adolescence and young adults life-long before the occurrences of lung cancer – it is relatively easy to predict the future evaluation of the lung cancer epidemic, at least in the medium term. Thus, in the USA, the decline in mortality from lung cancer in men, which has just begun, will continue. However, unless the current prevalence of smoking among females decreases markedly, the rates will continue to rise for another 25 years. This pattern of increase, in men as well as in women, can be predicted for all countries where cigarette smoking is a recent phenomenon.

Published in: Proceedings of NAPCON-2001, Mumbai, pp., 184-188,2001.

AN ASSESSMENT OF CANCER INCIDENCE PATTERNS IN PARSI AND NON-PARSI POPULATIONS, GREATER MUMBA

Yeole BB And Advani SH

Background: The Mumbai Cancer Registry has been in operation since 1964 and reliable morbidity and mortality data on cancer obtained for the first time in India, from a precisely outlined population. An attempt has been made to examine the differences in the site-specific cancer risk, between the Parsi and non-Parsi population of Mumbai.

Material and methods: For this study, data collected by Mumbai Cancer Registry for the latest five years has been utilized. For comparison between Parsi and non-Parsi populations, crude and age-adjusted rates have been used.

Results: The overall age-adjusted rates among Parsi's were lower than those for the non Parsi populations and more noticeably their site-specific risks seem to differ radically from the non Parsi pattern. Cancers of the buccal cavity, pharynx, larynx, oesophagus and cervix uteri, which are frequently seen in the non-Parsi population, were less common in the Parsi community. On the other hand the Parsi rates were higher for sites such as the female breast, endometrium, lymphomas and leukaemias.

Conclusion: Such site-specific contrasts are believed to be due to differences present in the habits, customs and economic status of the two groups.

Published in: Asian Pacific Journal of Cancer Prevention, Bangkok, Vol2, pp.293-298, 2001.

POPULATION BASED SURVIVAL FROM PROSTATE CANCER IN MUMBAI (BOMBAY), INDIA

B.B.Yeole, Lizzy Sunny

Survival from cancer reflects the aggressiveness of the disease, the effectiveness of treatment and host factors such as age. Population based survival reflects the effectiveness of the overall cancer control strategy in the region. Here we report the survival experience of 740 prostate cancer patients registered by the Mumbai (Bombay) Cancer Registry during 1987-1991. There have been very few reports on survival from cancer in India, mainly because of poor patient follow up and inadequate system of registration of death. This has been largely overcome in this study by means of matching with death certificate of Municipal Corporation, telephone and postal enquiries and active follow up through visits of homes of patients. Scrutiny of medical record was also carried out whenever it was possible. Thus information on survival status as on January 1, 1997

was available for 602 patients (82%). The observed survival was 35.1% and the corresponding relative survival was 41.6%. The clinical extent of disease, treatment given and age of the patient were independent predictors of survival. The observed survival was 49.2% for localized disease, 23.5% for direct extension and regional node involvement and 12.7% for distant metastasis patients.

Published in: Indian Journal of Cancer, Vol.38, pp.127-132,2001.

RETINOBLASTOMA: AN EPIDEMIOLOGICAL APPRAISAL IN REFERENCE TO MUMBAI, INDIA, POPULATION

Yeole BB And Advani SH

Reliable incidence and mortality data on childhood cancers are available from a few areas in the developing countries. Childhood cancer is rare compared with adult cancer. In Europe, North America and Australia, retinoblastoma accounts for 2-4 percent of neoplasms in children. The relative frequency is similar in Asia. In contrast, in African countries; retinoblastoma represents 10 to 15%.

The data collected at Bombay Cancer Registry for the latest 13 years, 1986-1998, has been used for this study. The analysis has been carried out on retinoblastomas by sex, age, religion laterality etc. based on various rates and proportions.

In Mumbai, during the 13-year period 211 cases were malignant tumors of eye. Out of these 211 eye tumors, 147 were retinoblastomas, 84 were males and 63 were females. Crude incidence rate per million population were 4.0 for males and 3.1 for females. The age adjusted rate per million were 4.2 and 3.3. The crude incidence rates are found to be higher in Muslims as compared to Hindus and other religious group in both the sexes. Out of total retinoblastomas, 105 were localized, 24 had regional spread and 16 were reported as metastasized or very advanced disease. 23 patients had bilateral disease, in 60 patients; retinoblastoma was in right eye and in 58 on left eye.

The highest rate for retinoblastomas, in excess of 7 per million population have been observed in the Fortaleza area of Brazil, Nigeria (Ibadan) and Uganda-Kampala. Retinoblastomas have the lowest median age of all childhood malignancies, approximately 15 months. The male female ratio of retinoblastoma fluctuates around unity in most populations. Our data indicates higher proportion for males. Ethnic differences in the frequencies of unilateral and bilateral retinoblastomas are apparent. There is little evidence of any significant change in the incidence of retinoblastoma over time in any of the part of the world. Knudson proposed a 2-mutation hypothesis to explain the occurrence of retinoblastoma in both hereditary and sporadic forms with differing frequencies of bilaterality, and this model has become a paradigm for considering the role of genetic factors in the etiology of cancer in general.

Published in: Asian Pacific Journal of Cancer Prevention, Bangkok, Vol.3, pp.17-22, 2002.

CANCER IN WOMEN IN INDIA: AN EPIDEMIOLOGICAL ASSESSMENT

B.B.Yeole

For present study, cases registered by the Bombay Cancer Registry during 1993-97 has been used. The analysis is based on age-specific, crude and age adjusted incidence rates and as well as on proportions. During the 5 year period 40306 cancer cases were registered of which 19631

were women giving average annual crude incidence rates of 80.6 and age adjusted incidence rates of 120.8 per 100,000 population. In women, breast is the most predominant site followed by cervix, ovary and oesophagus in descending order. Cancer incidence rates were found to increase with age. At younger ages, the rates are similar in both the sexes but the rates were higher in women between the ages 25-64. In women, about 90% cases were microscopically confirmed. Parsi women had a much higher risk than others. Cancer of the uterine cervix appeared predominately a disease of married women, while breast cancer rate was higher in spinsters. An increasing trend (statistically significant) in incidence rates are found for cancers of breast, ovary, corpus uteri, brain, thyroid, colon and gall bladder, while decreasing trend was noticed for cervix, stomach and oesophagus. During the period, about 200 multiple cancers were registered in women, breast was involved in 75% cases of which 60% were bilateral.

Conclusions: In India, more than 50% cancers in women either belong to cervix or breast. A program of health education to improve awareness and to promote early detection should be attempted to control the disease.

Published in: Asian Pacific Journal of Cancer Prevention, Bangkok, Vol.3, pp.137-142, 2002.

AN EPIDEMIOLOGICAL ASSESSMENT OF INCREASING INCIDENCE AND TREND IN BREAST CANCER IN MUMBAI- INDIA, DURING LAST TWO DECADES.

B.B.Yeole and A.P.Kurkure

A great deal is known on the epidemiology of breast cancer. In this paper an attempt has been made to discuss the epidemiology and trends in incidence of breast cancer in various populations of India with special reference to the data available at Mumbai Cancer Registry.

For discussing descriptive epidemiology of breast cancer the data collected for most recent year, 1999 by Mumbai Cancer Registry has been utilized. For studying time trends the data collected for the Mumbai Cancer Registry for the years 1982-99, for Bangalore and Chennai 1982-96, for Barshi, Bhopal and Delhi 1988-96 data have been utilized. A linear regression model based on the logarithms of the various incidence rates, the method often used for studying time trends was applied to the entire data.

Age specific incidence rates for breast cancer for most of the urban populations in India shows steep increase till menopause years, there after the curves had a slope much less than the menopausal years. Most of the registries, show that Christians had more risk for breast cancer and Muslims have the lowest rate. In all the populations breast cancer was found to be less prevalent at the lower education level and the incidence starts to increase as the education level increases. The trends in breast cancer incidence for most of the populations in India were found to be increasing which was statistically significant.

Published in: Asian Pacific Journal of Cancer Prevention, Bangkok, Vol.4, pp.51-56, 2003.

SURVIVAL FROM GLOTTIC AND SUPRAGLOTTIC LARYNGEAL CARCINOMA IN MUMBAI (BOMBAY), INDIA

B. Yeole, R. Sankaranarayanan, Ramanakumar AV

The survival experience of patients with cancer of the larynx registered by the Bombay population-based cancer registry India, during the years 1992-1994, is described The vital status of these subjects were established by matching with death certificates from the Municipal death register and by active methods such as reply-paid postal enquiries, telephone enquiries, scrutiny of case records and house visits. Of the 675 eligible cases for analysis, 458(67.9) were dead and 217 (32.1%) were alive at last follow-up. The 5-year observed and relative survival rates were 29.1 and 38.2% respectively; these were 52.1 and 58.5% for glottic cancer and 24.2 and 31.4% for supraglottic laryngeal cancer, respectively. The 5-year observed survival was 53.1% for those with localized disease and 17.8% for those with regional extension. Advancing age, regional and metastatic disease and supraglottic cancers were associated with significantly reduced survival. Early detection and prompt treatments should improve overall survival from laryngeal cancer.

Author Keywords: Larynx, Glottic larynx, Supraglottic larynx, Treatments, Survival, Control

Published in: Oral Oncology, pp. 1-8, 2003.

CANCER MORBIDITY AND MORTALITY IN GREATER MUMBAI 1999

N.M.Kavarana, M.R.Kamat, A.P.Kurkure, B.B.Yeole & S.K.Methar

This publication is in the series "Cancer Morbidity and Mortality in Mumbai" and is based on all new cancer cases registered during 1st January 1999 to 31st December 1999.

8740 (4429 Males and 4311 Females) new cancer cases were registered in 1999 in Greater Mumbai. Of these 8175 were through collaborating hospitals and remaining 565 were from the Municipal Corporation. 87.4% of all new cancer cases who were registered through hospitals where microscopic confirmation is available. A crude incidence rate of 76 per 100,000 was estimated (71.4 for males and 81.1 for females). The rates were 102.1 for males and 110.0 for females. The most common site of cancer in men was lung followed by prostate and oesophagus. In females, breast was the leading site followed by cervix and ovary. The Parsi population had a much higher risk than other religions.

Increasing trends (statistically significant) in incidence are seen in males for cancers of the gallbladder, prostate, urinary bladder, kidney, brain, lymphomas and leukaemias. A decreasing trend (statistically significant) in incidence was found for the tongue, oropharynx, oesophagus, stomach, larynx, lung and penis in males and oropharynx, hypopharynx, and stomach, larynx and cervix in females.

During the year 1999, the Municipal Corporation recorded a total of 6135 cancer deaths. Out of these, 1010 were known non-residents of Greater Mumbai. 4529 were residents for over 1 year and the remaining 596 did not have adequate address in Mumbai at the time of death but their duration of stay in city was not mentioned on the death certificates. The age-adjusted death rates for 1999 at all sites were found to be 58.1 for males and 56.8 for females per 100,000 populations.

Published by: Indian Cancer Society in 2002.

CANCER MORBIDITY AND MORTALITY IN NAGPUR CITY 1995-99

N.M.Kavarana, M.R.Kamat, A.P.Kurkure, B.B.Yeole, Varsha Sagdeo, Lizzy Sunny, Kavita C. Jadhav

This is the seventh publication in the series "Cancer Morbidity and Mortality in Nagpur City Agglomeration". In this publication the new cancer cases diagnosed among the residents of Nagpur City Agglomeration during the period, 1995-99 are analyzed and presented.

During the period 1995-99, 7675 new cancer cases were registered among residents of Nagpur, which gives an average of 1535 new cancer per annum. Of these 7675 new cases, 3891 were males and 3784 were females indicating a M/F ratio of 1.03:1 which is similar to the general population viz.1.1:1. By relating the average annual incidence to the estimated resident population of Nagpur City Agglomeration as on 1st July, 1997 (mid-point of the period 1995-99), we find a crude cancer incidence rate of 80.0 per 100,000 population. The crude cancer incidence rate for females (82.8) was found to be higher than that for males (78.3). Average annual age-specific incidence rates per 100,000 population for all cancer sites was 105.7 for males and 107.8 for females. In males, the oesophagus being the leading site with the lung coming second in rank – Larynx ranks third and mouth ranks fourth in men. Cancers of the breast and cervix were found to predominate in females, breast being the leading site with the uterine cervix coming second in rank. The ovary ranks third and oesophagus ranks fourth in women. 88.8% of the new cases recorded had a microscopic confirmation of cancer. The percentage of patients diagnosed on the basis of clinical examination alone was 7.2% and 3.6% of cases were registered from death certificates alone. The Hindu population appears to be at a higher risk than the Muslims and Christians. Female preponderance was observed in all religions except Muslims and Buddhists.

During the period 1995-99, a total of 1456 cancer deaths were recorded among the residents of Nagpur City Agglomeration. Out of these 1028 were males and 629 were females. The average age-adjusted death rates at all sites, were found to be 27.7 for males and 16.7 for females per 100,000 populations.

Published by: Indian Cancer Society in 2003.

CANCER MORBIDITY AND MORTALITY IN POONA CITY 1996-2000

N.M.Kavarana, M.R.Kamat, A.P.Kurkure, B.B. Yeole, Asha Pratinidhi, C.B.Koppikar, Lizzy Sunny, Kavita C. Jadhav

This publication is the seventh in the series "Cancer Morbidity and Mortality in the Poona City Agglomeration" and based on all new cancer cases diagnosed in the resident population of Poona city during 5-year period, January, 1996 - December 2000.

During the period under review (1996-2000), 10532 new cancer cases were registered among residents of Poona, which gives an average of 2107 new cancer per annum. Of the new cases, 5007 were males and 5525 were females indicating a M/F ratio of 0.9:1.0 which is somewhat reverse of the M/F sex ratio in the general population viz.1.08:1.0. Out of the new cancer cases, 9743 were registered through collaborating hospitals and 789 were registered from Municipal Corporation files. By relating the average annual incidence to the estimated resident population of Poona City Agglomeration as on 1st July, 1998 (mid-point of the period 1996-2000), a crude

cancer incidence rate of 71.7 per 100,000 population was observed. The crude rate for females (78.3) was found to be higher by 19% than that for males (65.6). Average annual age-specific incidence rates per 100,000 population for all cancer sites works out to be 99.3 for males and 111.2 for females. In males, the oesophagus being the leading site with the larynx coming second in rank. Prostate ranks third and lung ranks fourth in men. Cancers of the breast and cervix were found to predominate in females, the breast being the leading site with the uterine cervix coming second in rank. The oropharynx ranks third and oesophagus ranks forth in women. 82.6% of the new cases recorded had microscopic confirmation of cancer. The percentage of patients diagnosed on the basis of clinical examination alone was 6.4% and 6.7% of cases were registered from death certificates alone. The Hindu population appears to be at a higher risk than the Muslims and Christians. Female preponderance was observed in the Hindus and Christians.

During the period 1996-2000, a total of 3953 cancer deaths were recorded among the residents of Poona City Agglomeration. Out of these 2011 were males and 1941 were females. The average age-adjusted death rates at all sites, were found to be 41.8 for males and 41.4 for females per 100,000 population.

Published by: Indian Cancer Society in 2003.

HOSPITAL CANCER REGISTRY, BANGALORE KIDWAI MEMORIAL INSTITUTE OF ONCOLOGY, BANGALORE-29.

Principal Investigator: ***Dr. P.S. Prabhakaran, Director, KMIO***
Co-Principal Investigator: ***Prof. K. Ramachandra Reddy***

Introduction

Kidwai Memorial Institute of Oncology (KMIO) is the comprehensive and regional centre for cancer research and treatment in Karnataka with the state of art facilities for the diagnosis, treatment and research. It is an autonomous, non-profit Institution and has inpatient bed strength of 429. In addition to these inpatients beds, the 'Dharmashala' a unique project of its kind in the country provides accommodation to about 250 ambulatory cancer patients along with their 250 attendants. These patients and attendants at Dharmashala are provided with free food through perpetual free feeding endowment donation scheme.

The Institute is running super speciality courses in M.Ch. (surgical Oncology) and D.M. (Medical Oncology), Postgraduate diploma courses in Radiotherapy, Nuclear Medicine and Radiation Physics apart from the undergraduate courses. B.Sc. Medical Technology (Lab / Radiotherapy / Radio diagnosis). These courses are affiliated to Rajiv Gandhi University of Health Sciences. This Institute has been recognized as a National Centre of excellence. Doctors / Scientific staff from various institutions across the country are posted to KMIO for training in various branches of oncology under WHO fellowship programme.

As community outreach programme, the Department of Community Oncology in collaboration with various non-governmental organizations conducts cancer education and detection camps in

rural, semi-urban, and urban areas of Karnataka and in the neighboring areas of other States. In view of the facilities available at the Institute at reasonably concessional rates, patients from all over Karnataka as well as from the adjoining areas of neighbouring States of Andhra Pradesh, Tamil Nadu, Kerala and other regions attend this hospital.

The Hospital Based Cancer Registry of KMIO has joined the network of NCRP of ICMR during the year 1984 and since then the registry is sending data on all cancer cases to the co-ordinating unit.

During 1984-1999, a total of 163905 new cases were registered of which 109908 (67.1%) were diagnosed as cancer. During 1999, a total of 11885 patients were registered as new cases of which, 7417 cases (62.4%) were diagnosed to have cancer. This includes 665 late registration cases.

18 cases of double primary cancers were detected but the second primary sites of these cases were not included in the analysis. The proportion (%) of cancers among females continued to be high (56.5%) compared with that of males (43.5%) with the male/female ratio of 1:1.3.

Leading sites of cancers

The ten leading sites of cancers in males and females are shown in table below. Among males, Pharyngeal cancers (hypo-pharynx, oropharynx, nasopharynx and pharynx nos) were the first leading sites of cancers followed by cancers of the oral cavity (gum, floor of mouth and other mouth), oesophagus, leukaemia, and lung. Among females, cancers of the cervix uteri continued to be the most common site of cancer constituting 32% of all cancers in females. A continuing pattern of slight declining trend in the proportion of these cancers was observed over the years. Cancer of the breast is the second leading site of cancer followed by oral cavity, oesophagus and ovary.

Table 1: Ten Leading sites of Cancer - Males & Females: 1999

SITE	MALE		SITE	FEMALE	
	No.	%		No.	%
Pharynx	472	14.6	Cervix	1345	32.1
Oral Cavity	375	11.6	Breast	591	14.1
Oesophagus	317	9.8	Oral Cavity	505	12.1
Leukaemia	218	6.8	Oesophagus	263	6.3
Lung	210	6.5	Ovary	199	4.8
Stomach	210	6.5	Leukaemia	161	3.8
Lymphoma	196	6.1	Thyroid	107	2.6
Brain	124	3.8	Pharynx	105	2.5
Larynx	90	2.8	Lymphoma	97	2.3
Rectum	82	2.5	Stomach	95	2.3
Other sites	936	29.0	Other sites	719	17.2
All Sites	3230	100.0	All Sites	4187	100.0

Paediatric Cancers

The paediatric cancers (0-14 years) formed 4.6 % of all cancers. Proportion of these cancers was higher in boys (6.1 %) and twice that of girls. The most common cancers in this age group is as

similar to that observed in the previous years with leukaemia, lymphoma and cancers of central nervous system being common in both sexes.

Tobacco Related Cancers (TRC)

The tobacco related cancers accounted for 47 % (1518 cases) of all cancers in men and 23.3 % (949 cases) of all cancers in women. More than 1/3rd of all cancers (M+F) were tobacco related.

Head and Neck Cancers: A total of 1523 Head and Neck cancer cases (20.5%) were seen during the year 1999. The proportion of these cancers was higher in males (28%) than in females (14.8%). Among males hypo pharyngeal cancers were more common (307 cases out of 905) followed by oropharyngeal cancers (290 cases) where as, in females cancers of the oral cavity were very common and accounted for over 72 % of the Head and Neck cancers (448/618).

Research Activities – Projects

1. Cancer Atlas Project: The Hospital Cancer Registry has involved in the Cancer Atlas Project of the WHO, ICMR under taken by the NCRP and provided information on all non-resident cases registered at Kidwai Memorial Institute of Oncology for the year 2001. It is proposed to send the data on similar cases for the year 2002 also which will help the mapping of cancers in different regions in the country.

2. Case Control Study: The case control study of Breast Cancer undertaken in the department has been completed and the results of the same will be published in the near future.

Participation at Conferences/Seminars/Workshops

K. Ramachandra Reddy attended the 18th ARM of NCRP held at Tata Memorial Hospital, Mumbai during 20th to 22nd Nov.2002 and presented the report of Hospital Based Cancer Registry.

Participated in the Workshop on Development of Cancer Atlas in India from 31st July to 2nd August 2002 at Indian Institute of Science, Bangalore and presented paper on "Burden of cancer at KMIO in Karnataka.

Chaired a session on Epidemiology of Oral Cancer organized by Department of Oral Surgery, KMIO.

Dr. C. Ramesh participated at Workshop on Development of Cancer Atlas in India from 31st July to 2nd August 2002 at Indian Institute of Science, Bangalore.

Mr. K. Mani, Lecturer was deputed to undergo Post-graduate training in Epidemiology at University of Tampere, Finland during the academic year 2001-2002.

Mr. D.J. Jayaram Sr. Investigator and Mr. M.K.M. Gowda, Asst. Social Scientist participated in the 18th ARM of the NCRP held at Tata Memorial Hospital, Mumbai, 20th to 22nd November 2002.

Mr. D.J. Jayaram, Sr. Investigator is deputed to undergo Post-graduate training in Epidemiology at University of Tampere, Finland during the academic year 2003-2004.

All the Staff members of the Department have participated at Workshop on Development of Cancer Atlas in India from 31st July to 2nd August at Indian Institute of Science, Bangalore.

POPULATION BASED CANCER REGISTRY, BANGALORE KIDWAI MEMORIAL INSTITUTE OF ONCOLOGY, BANGALORE-29.

Principal Investigator: ***Dr. P.S. Prabhakaran, Director, KMIO***
Officer-in-Charge: ***Dr. Arnua E. Prasad***

To study cancer patterns in Bangalore Urban Agglomeration, a Population Based Cancer Registry (PBCR) was established at Kidwai Memorial Institute of Oncology in December 1981 under the National Cancer Registry Progrmme of ICMR. The registration of cancer cases in the area covering Bangalore Urban Agglomerate commenced from 1st January 1982. KMIO is the Regional Cancer Research and Treatment Center of Karnataka State.

Bangalroe is the capital of the state of Karnataka, India, in the southern part of the country and lies at 13 N and 78 E. It is situated at an altitude of 914 meters above mean sea level (MSL). The Urban Agglomeration has been divided into Bangalore Mahanagara Palike consisting of 100 wards and adjoining 8 city municipal councils and 25 death units for administrative convenience. The PBCR covers an area of 365.7 Sq.Km and an Urban population of 5.6 million. Kannada is the predominantly spoken language. Hindus formed the majority (83%) followed by Muslims (10%), Christians (6%) and other 1.0%. The rest belonged to other sections.

Method of Cancer Registration in PBCR, Bangalore

The Assistant Social Scientist of the registry, visit the various sources of registration. i.e., Government Hospitals, Private Hospitals, Teaching Hospitals, Nursing Homes, and Diagnostic Laboratories to collect data on cancer patients who are residents of the city of Bangalore in a standard format (i.e., core proforma). The assistant social scientist visit the sources by regular weekly schedules. A residential criteria of having stayed in Bangalore Urban Agglomeration for atleast one year at the time of diagnosis of cancer is strictly adhered to. Information is collected by interviewing the patients wherever possible and or from medical records.

The first edition of the International Classification of disease for Oncology (ICD-O) and the 9th revision of the International Classification of diseases (ICD) have been used to code topography and morphology. Since 1988 as per the instructions of the Coordinating Unit of ICMR, data are coded using ICD-O-2.

Data on mortality are collected from the death registers maintained at the corporation death units and city municipal councils. Death registers in Government Hospitals and other private hospitals are scrutinized for more information on case of death. The death registration system is not properly maintained and the information obtained is often inadequate. The most frequent cause of death is given as cardio-respiratory arrest. Efforts are being made to improve the system by conducting meetings with the medical officers of the various death registration units. Data entry, range and consistency checks, tabulation etc., are all carried out with inhouse programmes developed on dbase and EPI-Info packages, duplicate checks are carried out by the combination of computer programme and manual verification.

All the information collected from the said sources are kept strictly confidential and used only for research purposes. No contacts in any form are made with the patient registered exclusively from the private hospitals. The registry owes its success to the unstinted co-operation of the chiefs and other personnel of all the institutions that have participated in the registry programme and seeks their continued support.

All patients registered under PBCR are classified into proved cancer, proved non-cancer, probable cancer and probably non-cancer. A report concerning cancer is published every year or biennial based on the data. Besides this, the PBCR provided a background for studies in KMIO by providing the data on cancer burden in the community and registry aids in cancer control programmes of KMIO. The staff of PBCR is actively involved in various studies on cancer in the community, helps to plan services for geographical area and contribute to professional and public education on cancer. Active follow-up through house visits is a new activity of the registry. This was done for selected sites of cancer and results of survival analysis have since been published. The registry is now in the process of undertaking specific exercises to determine completeness of coverage as well quality assurance of data.

The staff of the Registry are well trained in their respective fields by exposure to many training programmes in Epidemiology and cancer Registration conducted in India. They have taken active part in many National / State Cancer Conferences in the Institute and presented papers arising from registry data during the said programmes.

All the staff of the registry have attended the WHO project on (NCRP-ICMR) 'Development of an Atlas of Cancer in India' in Bangalore, organized by the NCRP Coordinating Unit (ICMR) during August 2002.

Project Consultancy

Assistance in design, implementation and analysis have been provided to researchers within the institute departments and statistical analytical support was provided for Post-Graduate Desertations and other research programmes. Technical guidelines for preparation of health education materials for various types of cancers have been developed.

The department is actively participating in teaching / training programme for under-graduate and post graduate students, paramedical staff of KMIO and other institutions in and around the state of Karnataka.

The area covered by the registry has increased over the years. Quality Control Exercises are being conducted to improve completeness and validity. The registry is also involved in population screening programmes of KIMO.

Uses of Data

The annual report of the registry presents data on incidence highlighting trends and changes. The data is presented at the Annual Review Meeting of the National Cancer Registry Programme. This is a meeting where registries from different parts of the country present their data and recommendations are made. Several survival studies for specific cancers have also been undertaken. The Biennial reports are also sent to various institutions who have contributed the data to the registry.

The total No. of cases registered in the year 1998-99 are 3185 and 3715 in males and females respectively. There is a gradual increase in the total No. of cases compared to the previous years. The CR, AAR, TR are 57.06, 92.69 and 143.84 among males and 73.93, 116.07 and 234.48 among females respectively. The incidence of cancer in Females are more than in Males.

Leading Sites of Cancers

Males:- There is no change in the ranking of the leading sites of cancers during the year 1998-99 compared to 1996-97. Cancer of the stomach is still the leading site of cancer in males accounting for 9% of all the cancers in males. cancer of the Prostate which was occupying the 9th position earlier is now the 7th leading sites of cancer. Cancer of the Rectum which was not in the leading ten sites of cancer is now occupying the 9th position, and cancer larynx is not in the ten leading sites. The ten leading sties of cancers accounts for about 60.3% of all cancers.

Females:- Cancer of the breast and cervix accounts for 41.% of all cancers. They continue to be the predominant cancers in females. Cancer of cervix is showing further decline in trend as compared to the year 1996-97. Cancer of the breast continues to be the leading site with an increasing trend from 20.5% in 1996-97 to 22.80% in 1998-99. Cancer of the oral cavity, Oesophagus, Ovary, Stomach, Thyroid and Rectum have not shown any changes in their ranking. Whereas haemopoitic malignancies are replaced by cancer of the larynx and endometrium.

Publication:-

Cancer Incidence in Bangalore: 1993-97, P.S. Prabhakaran et. al. in Cancer Incidence in Five Continents Vol. VIII, Eds: D.M. Parkin, S.L. Whelan, J. Ferlay, L. Teppo & D.B. Thomas. IARC Scientific Publication No. 155, International Agency for Research on Cancer, Lyon, France, PP 234-235, 2002.

FROM PARKIN & SANGHVI

Cancer registration is an arduous task in developing countries, owing to shortages of medical facilities and personnel. The problems of identification of individuals comprehensive case finding and definition of reference population are most difficult to solve, and the risk of bias is always present.

It is wise to start simply. For some time, results may be reported in the form of relative frequencies by sex and ethnic group where relevant rather than incidence rates. However, the ultimate objective should be to register cases from a defined population so that incidence rates can be calculate, even though these, initially, may be under estimates of true rates. At this stage, cancer registration becomes much more rewarding and this end justifies every effort to undertake the job, in spite of the difficulties.

Ref: D.M. Parkin & L.D. Sanghvi – in Cancer Registration Principles and Methods, Eds. O.M. Jenson, D.M. Parkin, R. Maclennan, C.S. Muir & R.G. Skeet, IARC Scientific Publication No. 95, Page 198, 1991.

HOSPITAL CANCER REGISTRY & POPULATION BASED CANCER REGISTRY, CHENNAI
CANCER INSTITUTE (WIA), CHENNAI-20.

Principal Investigator: *Dr. V. Shanta*
Co-Investigator: *Dr. R. Swaminathan*

A Report on the activities of Chennai Population Based Cancer Registry (Madras Metropolitan Tumour Registry - MMTR) & Hospital Cancer Registry During 2000-2003.

Awards

Dr. V. Shanta, Chairman, Cancer Institute (WIA), Chennai and principal Investigator, Chennai PBCR and HCR.

Year	Awards	Institution
2000	Science City – 'Millenium Lifetime Achievement Awards' for Women Scientists : 2000	
2002	D.Sc.(honoris causa)	Tamil Nadu Dr. MGR University, Tamil Nadu.
2002	Nazil-Gad-El-Mawla Award for outstanding Contribution to Cancer Control in a country with limited resources.	The International Network for Cancer Treatment
2002	Sadguru Gnanananda Award*	

* For Meritorious work in multidisciplinary approach towards cancer care and her continued efforts in the field of Medical Oncology.

Mr. R. Swaminathan, Co-Investigator, Chennai PBCR & HCR.

Year	Degree	Subject	Institution
2003	Ph.D.	Statistics	Madras University

Membership of Committees

1. Member, WHO Advisory Committee on Cancer.
2. Convenor, State Advisory Board on Cancer.
3. Breast Cancer Strategy Group, International Network for Cancer Treatment and Research (INCTR).
4. Cervical Cancer Strategy Group, International Network for Cancer Treatment and Research (INCTR).

HOSPITAL CANCER REGISTRY & POPULATION BASED CANCER REGISTRY, CHENNAI
CANCER INSTITUTE (WIA), CHENNAI-20.

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4. Cervical Cancer Strategy Group, International Network for Cancer Treatment and Research (INCTR).

On going Projects

1. 'Development of an Atlas of Cancer in India: Years 2001, 2002 and 2003' – A project of National Cancer Registry Programme (ICMR) – Supported by WHO.
   a) Registration of non resident cancer cases from Population Based Cancer Registry (PBCR) – about 6,000 cases each year
   b) Registration of non Chennai cancer cases from Hospital Based Cancer Registry (HCR), Cancer Institute (W.I.A.) – about 6,500 cases each year
2. 'Estimation of Population-based cancer survival rates for common cancers in Chennai – Year 1990-1999' – A survival study in collaboration with International Agency for Research on Cancer, Lyon, France.
3. 'Hereditary Cancer Registry Project' – A study on family history of cancer on cases from the Madras Metropolitan Tumour Registry area" in cooperation with Department of Molecular Oncology, Cancer Institute (WIA), funded by the WHO, New Delhi.
4. 'Pattern of care and survival studies' – Cancer Breast & Cervix – A project in collaboration with National Cancer Registry Programme (ICMR), New Delhi to study the extent of medical documentation, follow up and to estimate the hospital based survival rates
5. 'Awareness and early detection of cancers of cervix, breast and oral cavity' – A project in collaboration with the World Health Organization, New Delhi.

HUMAN RESOURCE DEVELOPMENT –

Workshops/Training Programmes Organized in 2002-2003

1. A 'Workshop on Cancer Registration' was organized for the personnel from

   a) Vital Statistics Division (Birth & Death Registrars), Corporation of Chennai on 14.6.2003 – about 60 delegates participated.

   The focus was on the completeness of details in death forms, identification of cancer terms in a death certificate and computerization of death forms besides giving the salient features of cancer registration by the Madras Metropolitan Tumour Registry.

   b) Medical Records and Registration departments of the Government and Private hospitals and other institutions on 18.6.2003 – 125 delegates.

   The focus was on the completeness of details in medical records and registers, providing expertise in the starting of hospital cancer registries in specialized institutions and maintenance of tumour registers in general hospitals, making optimal use of different levels of computerization of their departments and exchange of cancer information besides giving the salient features of cancer registration by the Madras Metropolitan Tumour Registry.

   Dr.V.Shanta delivered the keynote address.

   The speakers from the department in the workshop are as below:

Dr. R. Swaminathan	Dr. A. Nalini
Mrs. R. Rama	Mr. S. Devarajan

2. Two delegates of the IARC Summer School Training Course on Cancer Registration and Applications in Epidemiology, Mr. S. Balakrishnan from the department of Radiation Oncology,

CMC, Vellore and Mrs. Kalpana A. Puranik from the Bombay Cancer Registry, Indian Cancer Society, Mumbai were deputed by IARC for an 'observational training on Cancer Registration' during June 16-18, 2003.

3. A 'Cancer Registry Training Workshop' was organized for delegates from four Regional Cancer Centres in Allahabad, Cuttack, Kolkata and Nagpur during March 17-21, 2003 and one other Regional Cancer Centre in Patna during 23-25 June 2003.

   A hospital cancer registry was either newly started or on the verge of beginning in these centres. All of them had an intention of expanding into a PBCR. It was reiterated that the HCR is the nucleus of any PBCR activity later. It was also urged to explore the possibility of starting PBCRs covering the adjoining rural areas in the vicinity. The focus was on the coding of primary site and histology by ICD-O III edition and reporting of cancer diagnosis by ICD-10, importance of case finding, especially where records are not centrally maintained, to ensure to report all cancer cases attending the institution and completeness of details in the medical record. Visits to the different hospitals, pathology departments, imaging centers and vital statistics division office were arranged to demonstrate the different ways of data collection and linkage. Exercises on coding and statistical methods were conducted using calculators and computers. A variety of software and packages associated with cancer registration were demonstrated.

   Dr. V. Shanta delivered the keynote address.

   The speakers from the department in the workshop are as below:

Dr. R. Swaminathan	Dr. Nalini.A
Mrs. R. Rama	Ms. M.Kavitha
Mr. S. Devarajan	Mr.S.Balasubramanian
Mr. R. Selvakumaran	Mr. P. Thangavel
Mr. J. Murugaiyan	

4. A delegate of the IARC Summer School Training Course on Cancer Registration and Applications in Epidemiology, Dr. Asia Al-Foudia from Baghdad Cancer Registry, Iraq, was deputed by IARC for 'observational training on Cancer Registration' during May 27-30, 2002.

   The trainee was an experienced pathologist knowledgeable about registry operations. Her stint at the Chennai PBCR gave her major inputs in the areas of mortality data collection and models of active follow up.

Consultancy Services Offered

1. Dr. R. Swaminathan visited the Khon Kaen Cancer Registry, Thailand in 2002 as a consultant to supervise the survival analysis of incident cancer cases registered in Khon Kaen Cancer Registry during 1985-1999.
2. Dr. R. Swaminathan was invited to the Unit of Descriptive Epidemiology, International Agency for Research on Cancer, Lyon to undertake the analysis of cancer survival data from developing countries as part of the publication of the second Monograph on Cancer Survival in Developing Countries. He also visited the Deutsches Zentrum fuer Alternsforschung (DZFA), Heidelberg, Germany, to discuss with Dr.H.Brenner, about the analytical methodology to be adopted for the monograph.

Conferences/Meetings/Workshop/Courses attended in 2001-2003

Dr. V. Shanta was an invited speaker in the following:

1. 'IV Annual Surgical Oncology Workshop - Gynaec Malignancy' held in January 2003 at Cancer Institute (W.I.A) Chennai – Invited speaker on 'An overview of Gynaec malignancy in India'.
2. 'International Network for Cancer Treatment and Research (INCTR) Annual Meeting 2002' held at Brussels – Invited speaker on 'Breast Cancer in South Indian Women'.
3. 'XVII Annual conference of the Association of Radiation Oncologists of India – (AROI)' Tamilnadu Chapter held in December 21-22, 2002 at Cancer Institute (W.I.A), Chennai – Invited speaker on 'Integrated approach to therapeutic oncology'.
4. All India workshop on 'Development of an Atlas of Cancer in India' under the auspices of WHO, India and ICMR, New Delhi held during 31 July – 2 August 2002 at Bangalore – Invited speaker on 'Cancer in Women in India with special reference to Cancer of Cervix and Breast'.
5. 'International Network for Cancer Treatment and Research (INCTR) Annual Meeting 2002' held at Brussels – Invited speaker on 'Cervical Cancer in South Indian Women'.
6. 'XVI Asia Pacific Cancer Conference' held in 18-21 Nov 2001 at Manila – Invited speaker on 'Chemotherapy in Gynaecologic Cancers'.
7. 'Conceptual Influences In Management of Common Cancers in South Indian Women' – Dhaka 8-10 March 2001.

Dr. R. Swaminathan, Senior Bio-Statistician was either an invited speaker or had poster presentation in the following:

(a) MDCCP Review meetings held by the Ministry of Health, Government of India at New Delhi on June 7, 2002 and March 20, 2003. Presented the preliminary analysis of data collected from more than 200,000 subjects in the districts of Trichy and Perambalur in Tamil Nadu. 'Workshop on Can Reg 4/ ICD-O-3' held at Bangalore, 4-7 March 2003, organized by Indian Council of Medical Research in collaboration with International Agency for Research on Cancer, Lyon, France – an invited delegate.

(b) 'Training Workshop on Tobacco Cessation for the establishment of Tobacco Cessation Sub-Centres' held at Cancer Institute (W.I.A.) Chennai on 13th Feb 2003 – Invited speaker on "Tobacco Related Cancers in Chennai– Incidence and Trend"

(c) Workshop on 'Application of Logistic Regression in Medical Research' held at Dept. of Community Medicine, Academy of Medical Sciences, Kannur, Kerala on 10th Jan 2003 – Invited speaker on 'Theoretical concepts of logistic regression'.

(d) XVII Annual Review Meeting of National Cancer Registry Programme of ICMR, New Delhi held during 20-21 November 2002 at Tata Memorial Hospital, Mumbai –

(i) 'Strategy for securing follow-up after treatment and

(ii) Cancer registration in Chennai PBCR & HCR'.

(e) All India workshop on 'Development of an Atlas of Cancer in India' under the auspices of WHO, India and ICMR, New Delhi held during 31 July – 2 August 2002 at Bangalore – Invited speaker on "Cancer pattern and trend in Chennai, India"

(f) XVIII UICC International Cancer Congress held at Oslo, Norway during 30 June to 5 July 2002 – Poster presentation on 'Effect of loss to follow-up on population based cancer survival rates in developing countries'.

(g) Pre-congress workshop on 'Cancer Epidemiology in India' held on 23rd June 2002 as part of 24th Annual Meeting of IACR during 23-28 June 2002 Tampere, Finland – Invited speaker on "International comparison of loss adjusted rates of cancer survival"

(h) 'National Workshop on Challenges of Medical Record Professionals in Effective Hospital Management' held during 4-6 May 2002 at Madras Medical Mission, Chennai – invited speaker on 'Cancer registration: basic principles and techniques'.

(i) 'Workshop on Thoracic Oncology' held in Jan 2002 at Cancer Institute (W.I.A.), Chennai – Invited speaker on 'Incidence of oesophageal cancer: Pattern, trend and risk factors'.

(j) Meeting of the medical practitioners from the study area of the WHO project on Awareness and Early Detection of Cancer – Lecture on 'The role of the registry in cancer surveillance'.

Mrs. R. Rama, Statistical Assistant was either an invited speaker or attended the following

(a) XVII Annual Review Meeting of National Cancer Registry Programme of ICMR, New Delhi held during 20-21 November 2002 at Tata Memorial Hospital, Mumbai.

(b) 'Workshop on Research Methodology & Bio-Statistics' held at Department of Epidemiology, The Tamil Nadu Dr. M.G.R. Medical University, Chennai 7-11 October 2002.

(c) 'Training Program for Health workers in Tamil Nadu on Cancer awareness and early detection' held at Cancer Institute (W.I.A.), Chennai during October 2002 – Invited speaker on 'Cancer Registration in India'.

(d) All India Workshop on 'Development of an Atlas of Cancer in India' under the auspices of WHO, India and ICMR, New Delhi held during 31 July – 2 August 2002 at Bangalore.

Ms. M. Kavitha, statistical Assistant & Mr. S. Balasubramanian, Computer Programmer, attended the 'Workshop on Can Reg 4/ ICD-O-3' held at Bangalore, 4-7 March 2003, organized by Indian Council of Medical Research in collaboration with International Agency for Research on Cancer, Lyon, France.

Mr. J. Murugaiyan, Social Investigator, attended the 'National Workshop on Challenges of Medical Record Professionals in Effective Hospital Management' held during 4-6 May 2002 at Madras Medical Mission, Chennai.

Mr. Devarajan, Computer Programmer, participated in the International Summer School Training Course on Cancer Registration and Applications in Epidemiology at IARC, Lyon, France 6-24

May 2002 followed by observation training programme at Edinburgh Cancer Registry NHS, Scotland, UK. 27-30 May 2002 under the ICRETT Felowship of UICC.

Special Meeting:

'Survivors Day' - A meeting of the Cancer survivors is being conducted during the month of June every year since 2001. The attendance of the survivors for the meeting is overwhelming.

Publications in 2002

1. Shanta V. Perspectives in Cervical Cancer Prevention in India. INCTR-NETWORK, Vol.3 No.3, Winter 2002-03. The newsletter of the International Network for Cancer Treatment and Research.
2. Swaminathan R, Shanta V, Rama R. Cancer registration, pattern and trend in India in the last two decades. (In press) Indian Journal of Clinical Practices (Oncology Update).
3. Sagar TG, Chandra A, Ramanan SG, Swaminathan R. Paucity of hematological neoplasia after treatment of Hodgkin disease: observation after long-term follow-up at Cancer Institute, Chennai, South India. Pediatr Hematol Oncol; 19(3): 197-203, 2002.

Registry Reports

1. Cancer incidence and mortality in Chennai, India: Patterns and trends during 1984-98. Population Based Cancer Registry. A project of the NCRP, ICMR, Cancer Institute (WIA), Chennai, India, 2001.
2. Hospital based cancer registry, Annual report – 1998. Cancer Institute (W.I.A.), Chennai. A project of the NCRP, ICMR, Cancer Institute, Chennai, India 2001.
3. Cancer incidence and mortality in Chennai, India: Biennial Report 1996-97. Population Based Cancer Registry. A project of the NCRP, ICMR, Cancer Institute (WIA), Chennai, India, 2000.
4. Hospital Based Cancer Registry, Biennial Report 1996-97, Cancer Institute (W.I.A.), Chennai. A project of the NCRP, ICMR, Cancer Institute, Chennai, India, 2000.

FROM WHO EXPERT COMMITTEE - 1980

Cancer Registries

Cancer registries are an essential tool for any cancer control programme. They provide information on the cancer situation, they form the basis for making decisions on the setting-up and organizing of cancer treatment, and they facilitate the evaluation of the efficacy of cancer control activities, including treatment. They should ideally be population based. To start with, however, hospital-based registries should be established, which, when operating well, can be broadened to regional coverage and finally co-ordinated with national registries.

Hospital-based registries can provide more and better data on treatment modalities and may therefore be particularly suitable for evaluating treatment results, so contributing to the optimization of cancer control.

Ref : Optimization of Radiotherapy, Technical Report Series 644. WHO 1980, Page 72.

POPULATION BASED CANCER REGISTRY, NEW DELHI INSTITUTE ROTARY CANCER HOSPITAL, NEW DELHI-110 029.

Principal Investigator: Dr. Kusum Verma

The Population based cancer registry at Dr. B.R. Ambedhkar Institute Rotary Cancer Hospital, AIIMS, New Delhi has completed 17 years of existence. It covers an area of 685.34 Sq.Kms and covers a population of 11.01 million of Delhi Urban. The sources for morbidity and mortality data are 159 major hospitals and more than 255 private nursing homes. Apart from these, the vital statistics division of New Delhi Municipal Committee, Municipal Corporation of Delhi and Delhi Cantonment Board are the other sources for collection of data on mortality. Registration of cases continues to be done by the active method.

The average annual crude incidence rate (CR), age adjusted incidence rate (AAR) and truncated (35-64 years) rate (TR) in Delhi Urban during 1997-98 were 73.1, 120.9 and 200.5 per 100,000 among males and 86.8,134.8 and 273.1 per 100,000 among females. There is no change in these rates over the years.

In males, lung was the predominant site followed by larynx, prostate, brain and Non-Hodgkins Lymphoma. Among females, cancer of breast topped the sites followed by cervix-uteri, ovary, gall bladder and body uterus.

Case-control studies on gall bladder cancer and prostate cancer among the Delhi residents were conducted and the reports were submitted to ICMR.

Teaching Programme

The registry organizes teaching programs for Medical Social Service Officers (MSSO's) regarding the medical terminologies, abstraction of cancer patient's information and coding of medical information.

Every year lecturers were given to B.Sc. (Nursing) students regarding the activities of Delhi Cancer Registry.

Training Programme attended by registry staff

Mr. N. Manoharan, Scientist - I (Statistics) attended a 4-day training program on CanReg 4 held at Bangalore during 4-7 March 2003.

Presentation and Meeting

Mr. B.B. Tyagi, Scientist - III (Statistics) attended the XVIII Annual Review Meeting of NCRP held at TMH, Mumbai on 20-22 November 2002 and presented the consolidated report of Delhi Cancer Registry and the problems faced by the cancer registry.

Mr. B.B. Tyagi, Scientist - III (Statistics) attended a meeting held at ICMR head quarter, New Delhi on 27th March 2003 and presented the reports of 'A case-control study on prostate cancer' and 'A case-control study on gall bladder cancer'.

Retirement and other staff changes

Dr. Jasmine George, SRO (Medical) retired from 1st March 2001.

Mr. Ashok Kumar Singh and Mr. Ratnesh Kumar were promoted to Medical Social Service Officer (Grade II) to MSSO (Grade I) during May 2001.

Mr. N. Manoharan joined as Scientist - I (Statistics) during June 2001

Publications:-

IS INCIDENCE OF CANCER ON THE DECLINE IN DELHI CAPITAL OF INDIA?

B.B. Tyagi, Kusum Verma & R.P. Singh

The incidence of cancer varies to a great extent in the resident population of Delhi (Urban area). The purpose of this study is to examine the time trends of incidence rates in different sites (ICD-9) of cancer. Average Annual Age-Adjusted (World Population) incidence rats by site (ICD-9) is used to estimate the parameters by linear regression method.

Time trends analysis of 8 years from 1988 to 1995 in Delhi for age-adjusted, truncated (35-64 years) incidence rates to world population and crude incidence rate by site (ICD-9) did not reveal statistically significant decrease or increase in the incidence.

Site wise, by liner regression method analyses, the following observations were made.

A positive and statistically significant correlation was seen in males for Cancer of Mouth, Colon & Gall Bladder. Positive correlation but statistically non significant was seen for Stomach, Rectum, Liver, Pancreas, Larynx, Lung, Thymus, Skin Melanoma, Breast, Prostate Kidney, Eye, Brain, Other Endocrine, HD, NHL & Multiple Myeloma.

A negative correlation was seen for cancers of all other sites in males. However, significant difference was found only for Leukemia Unspecified.

In females, a positive correlation was seen for Cancer of Oropharynx, Pharynx, Colon, Rectum, Gall Bladder, Pancreas, Lung, Thymus, Breast, Placenta, Uterus, Ovary, Brain, Thyroid other Endocrine, NHL & Myeloid Leukemia. Statistically significant increases were seen only for Gall Bladder Cancer & Thyroid Cancer.

A negative correlation was seen for Cancer of all other sites.

Published in:- Indian Journal of Cancer, Vol. 38, 8-16, March 2001.

POPULATION BASED RURAL CANCER REGISTRY, BARSHI, PARANDA & BHUM
NARGIS DUTT MEMORIAL CANCER HOSPITAL, BARSHI.

Principal Investigator: *Dr. K.A. Dinshaw*
Co-Principal Investigator: *Dr. B.M. Nene, Director, NDMCH*

The Barshi Rural Cancer Registry comprises rural areas of 3 tehsils of western, Maharashtra in the vicinity of Nargis Dutt Memorial Cancer Hospital (NDMCH) and is spread over 3713 sq. kms. with a population of about 0.5 million. Since its inception in 1988, the same methodology viz., identifying cases in the community in addition to the usual urban approach of canvass of diagnostic centers is being followed.

With a view to improve registration of cases the following activities have been undertaken in the recent years.

1. Cancer Quiz Programme in Schools

To increase cancer awareness in the community, we have been giving talks on cancer, the symptoms of the disease, prevention, cure etc to school teachers and students. Since1998, we started a Quiz programme for students of standard IX and X, to further enthuse them to participate in our programme. The answers to the Quiz are checked immediately after administering it and the winners declared. Merit certificates and at times prizes. (if a sponsor like Lion's club or Rotary club or any well wishers are available) are given to the winners. This programme has enhanced the awareness in the local adults also. The students help in referring suspected cases and also in giving publicity to the Clinic dates and so on.

2. Mega Clinics

Since 2001, in addition to the zonal camps we are organizing large cancer detection clinics once a year in areas where number of cases is suspected to be low. We seek the cooperation of local NGOs to get greater publicity. The clinics are conducted by Oncologists unlike zonal clinics which are generally conducted by medical persons. These features of the mega clinics, we hope will attract more cases.

3. Free Diagnosis and treatment

In the Registry we have registered almost all diagnosed cases. However we have all along been concerned about cancer cases that might have died before a diagnosis is established. So in 2003, we decided to address this problem. Currently the level of cancer awareness in the population is fairly high. Thus, the most likely reason for the patients not reaching a Hospital is financial constraints. We figured that if we remove this obstacle by giving facility for free diagnosis and treatment, may be we will succeed in attracting cases of cancer who would otherwise have not reached the Hospital we gave wide publicity in the villages for this facility. And so far NDMCH has seen 392 suspected cases referred by field investigator, school teacher, Anganwadi worker, civic leader from registry area in last 8 months, all these cases were treated free of cost, and from them 125 new cancer cases were diagnosed and treated.

4. Most favorable conditions for Registration

We wished to establish a benchmark to the number of cases to be expected in the Registry by creating, in 2003, the most favorable conditions for Registration of cancer cases. The cost of diagnosis and treatment has been Rs.11, 56,875 and almost all expenses is borne by NDMCH, only Rs. 16,000 is born by the Registry as a diagnosis expenses from the registry budget. In addition to all the other efforts undertaken in 2003, the zonal camps were also conducted mostly by Oncologists Thus, the human and financial resources being put into the Registry in 2003, perhaps, can not be improved upon. Analysis of 2003 data will reveal whether the number of cases registered is significantly higher or not, and if higher how much higher and at what cost.

NDMCH cannot offer free treatment to all Registry patients on a continuing basis. Next year, we propose to give free treatment to only proven cases of cancer unless we receive financial support from other sources. We fell cancer registration in rural areas is expensive. A better approach would be to have cancer control programmes along with the Registry.

Meetings

1. Dr. B.M. Nene Co-principal Investigator of the registry attended the meeting of the International Association of Cancer Registries at Tampere, Finland 25-27, 2002.
2. Dr. B.M. Nene Co-Principal Investigator was invited as a speaker for the meeting of Developments of Cancer Atlas held at Bangalore during 31 July -2 August 2002. Mr. M.K. Chauhan and Mr. A.M. Budukh have also participated in the meeting.
3. Dr. B.M. Nene Co-Principal Investigator and Mr. M.K. Chauhan, Mr. A.M. Budukh and Mr. N.S. Panse attended the XVIII Annual Review Meeting of the Cancer Registry during 20-21 November 2002 at Tata Memorial Centre, Mumbai.
4. Dr. Khan and Mr. Mathapati attended the Can Reg 4 Software training programme at Bangalore during 4-7 March 2003. The programme was organized by the Indian Council of Medical Research in collaboration with International Agency for Research on Cancer, Lyon, France.

Visitors

1. Dr. D.M. Parkin - Chief unit of Descriptive Epidemiology IARC/WHO, Lyon, France visited our registry on Feb 24, 2001.
2. Dr. R. Sankaranarayanan - Senior Scientist - Unit of Descriptive Epidemiology IARC/WHO, Lyon, France visited our registry on December 30, 2001.
3. Mr. D. N. Rao - Head Department of Hospital Cancer Registry - Tata Memorial Hospital, Mumbai visited our registry on October 19, 2002.
4. Ms N. Somdyala - Co-ordinator from Transkei Rural Cancer Registry -South Africa, UICC fellow, visited our registry as an Observer on 2-4 August 2003.
5. Mr. I. Kabba - Co-ordinator - Cancer Registry Conakry, Guinea, Africa visited our registry on 21st August 2003.

HOSPITAL CANCER REGISTRY, TRIVANDRUM
REGIONAL CANCER CENTRE, TRIVANDRUM-695 011.

Principal Investigator: ***Dr. M. Krishnan Nair, Director***
Officer-in-Charge: ***Dr. Aleyamma Mathew***

The Hospital Based Cancer Registry (HBCR), at the Regional Cancer Centre (RCC) Trivandrum has continued the data collection on cancer patients reporting to the RCC, Trivandrum. The registry records around 8000 new cancer cases annually. The most common cancer sites are oral cavity and lung among males and breast and cervix among females.

The HBCR has made significant achievements in data abstraction. The abstraction has been made online via RCC intranet with easy data management. This is the first paperless registry in the country. The demographic details in the HBCR core-proforma are entered into computer at the time of registration at RCC. The diagnostic and treatment details in the core-proforma are entered into computer after retrieving case-sheets from the medical records. To ensure whether valid data are entered, a series of range checks and to compare the values of certain variables against others, a series of consistency checks are done using an in-house software. After the necessary corrections, the data are sent to the coordinating unit of NCRP annual and reports are generated. The data generated by the HBCR serves for evaluating the performance of hospital administration and services.

The HBCR maintains a follow-up system for all cancer patients reported at RCC. Generally all follow-up visits are through prior appointments. An in-house software has been developed for appointment scheduling of patients. Date and disease status at each follow-up visit are entered into computer regularly. There are numerous problems in obtaining complete follow-up information of cancer patients. The follow-up loss is a serious setback for survival and end result reporting. Hence a computerized tracking system has been developed to identify the follow-up loss. Vital status of the lost patients are obtained by sending reply-paid letters with instructions written in Malayalam, as well as by telephone enquiry. These information are entered into computer and treatment results and survival of cancer patients are estimated routinely.

The HBCR supports a population-based cancer registry (PBCR) covering the areas of Trivandrum city (urban) and the three adjoining community development blocks (rural) to generate cancer incidence and mortality rates in Trivandrum. The bulk of the information (around 90%) for the PBCR is obtained from the HBCR, Trivandrum.

The registry has conducted several epidemiologic and clinical research programmes (list given below) and have published a number of scientific papers in peer-reviewed journals (list including abstracts given below) on epidemiology and survival of common and rare cancers.

ONGOING STUDIES: EPIDEMIOLOGY, CLINICAL RESEARCH & CANCER CONTROL.

A. Epidemiology

1. Case-control study of breast cancer in south Asia comparing rural and urban women.
   (Collaborators: International Agency for Research on Cancer, Lyon, France)
   Investigators at RCC: Principal Investigator (s): Dr.Aleyamma Mathew and Dr. B Rajan
   Co-investigator(s): Dr.Paul Sebastian and Dr.Anita Mathews

2. Case-control study on occupational exposure and cancer.
   (Collaborators: International Agency for Research on Cancer, Lyon, France)
   Investigators at RCC: Dr.Cherian Varghese, Dr.Aleyamma Mathew
3. Exposure to pesticides and risk of breast cancer.
   (Collaborators: National Cancer Institute, U.S.)
   Investigators at RCC: Dr.Cherian Varghese, Dr.Aleyamma Mathew
4. Cancer ATLAS in India.
   (A Project of National Cancer Registry Programme, Co-ordinating Unit, Bangalore supported by WHO).
   Investigators at RCC: Dr. M. Krishnan Nair, Dr. Aleyamma Mathew

B. Clinical Research

1. End Result and Survival after Cancer Treatment - Patients reported at Regional Cancer Centre, Trivandrum.
2. Pattern of Care and Survival of Breast, Cervix and Oral Cancers in RCC, Trivandrum.
   (National Cancer Registry, Indian Council of Medical Research, Co-ordinating Unit, Bangalore).

C. Cancer Control

1. Cervical Cancer Control Programme in Northern districts of Kerala
2. District Cancer control programme, Trivandrum.

Publications:- (Abstracts of Papers Published In Indexed Journals during July 2002-July 2003).

MALIGNANT TUMOURS OF THE MINOR SALIVARY GLANDS: A SURVIVAL ANALYSIS OF 17 YEARS FROM A TERTIARY REFERRAL CANCER CENTRE.

Pandey M, Thomas S, Mathew A, Nair MK.

***Background*:** Malignant tumours of the minor salivary glands are rare and constitute less than 0.5% of all malignant neoplasms. ***Aim*:** This study was carried out to evaluate the clinical presentation, site distribution, treatment, survival and predictors of survival in malignant minor salivary gland tumours. ***Setting*:** A tertiary care, superspeciality referral hospital. ***Design*:** Retrospective analysis. ***Patients And Method*:** Forty-two cases of minor salivary gland tumours

treated over a period of 17 years were reviewed for clinical presentation, histopathology, stage distribution, treatment and treatment outcome. ***Statistical Analysis*:** Survival rates by Kaplan Meier Method and the outcomes were compared using log-rank test. ***Results*:** The mean age of the patients was 46.9 years with a male to female ratio of 1.4:1. Majority of the patients presented with a painless progressive swelling, with 13 (31%) of them in T2 stage. About one-third of the patients had palpable lymph nodes at presentation, while none had distant metastasis. Palate was the commonest site and mucoepidermoid carcinoma was the commonest histopathological type. About 1/3 of the patients were treated with primary surgery and were followed up by adjuvant radiotherapy. Seven patients underwent palliative treatment alone. Over a mean follow-up of 30 months, 5 patients failed. The disease free survival was 72% at 5-year, none of the factors studied were found to significantly influence survival. ***Conclusions:*** Results of the present study suggest that minor salivary gland tumours should be treated with primary surgery irrespective of site and histological type to achieve best loco-regional control and survival.

Published in: J Postgrad Med., 49(1):25-8, Jan-Mar, 2003.

INDEPENDENT AND COMBINED EFFECTS OF TOBACCO SMOKING, CHEWING AND ALCOHOL DRINKING ON THE RISK OF ORAL, PHARYNGEAL AND ESOPHAGEAL CANCERS IN INDIAN MEN.

Znaor A, Brennan P, Gajalakshmi V, Mathew A, Shanta V, Varghese C, Boffetta P.

Oral, pharyngeal and esophageal cancers are 3 of the 5 most common cancer sites in Indian men. To assess the effect of different patterns of smoking, chewing and alcohol drinking in the development of the above 3 neoplasms and to determine the interaction among these habits, we conducted a case-control study in Chennai and Trivandrum, South India. The cases included 1,563 oral, 636 pharyngeal and 566 esophageal male cancer patients who were compared with 1,711 male disease controls from the 2 centers as well as 1,927 male healthy hospital visitors from Chennai. We observed a significant dose-response relationship for duration and amount of consumption of the 3 habits with the development of the 3 neoplasms. Tobacco chewing emerged as the strongest risk factor for oral cancer, with the highest odds ratio (OR) for chewing products containing tobacco of 5.05 [95% confidence internal (CI) 4.26-5.97]. The strongest risk factor for pharyngeal and esophageal cancers was tobacco smoking, with ORs of 4.00 (95% CI 3.07-5.22) and 2.83 (95% CI 2.18-3.66) in current smokers, respectively. An independent increase in risk was observed for each habit in the absence of the other 2. For example, the OR of oral cancers for alcohol drinking in never smokers and never chewers was 2.56 (95% CI 1.42-4.64) and that of esophageal cancers was 3.41 (95% CI 1.46-7.99). Furthermore, significant decreases in risks for all 3 cancer sites were observed in subjects who quit smoking even among those who had quit smoking 2-4 years before the interview. Copyright 2003 Wiley-Liss, Inc.

Published in: Int J Cancer,105(5):681-6, Jul 10, 2003.

SOFT TISSUE SARCOMA OF THE HEAD AND NECK REGION IN ADULTS.

Pandey M, Chandramohan K, Thomas G, Mathew A, Sebastian P, Somanathan T, Abraham EK, Rajan B, Krishnan Nair M.

Soft tissue sarcomas (STS) are rare solid tumours accounting for less than 1% of all malignancies and are very unusual in the head and neck region. Histopathologically diagnosed cases of STS

treated at Regional Cancer Centre (RCC). Trivandrum, India, between January 1989 and November 2000 were analyzed retrospectively. Survival analysis was carried out by Kaplan-Meier method and curves were compared using log rank test. A total of 22 cases were seen during the study period. The mean age of the patients was 36.4 years with male-to-female ratio of 2:1. The neck, lower jaw, tongue, cheek, scalp and maxilla were the commonest sites affected. None of the patients had palpable neck nodes or distant metastasis at presentation. All the patients were treated with primary surgical resection and this was followed by adjuvant treatment in 14 cases (63.6%). After a median follow-up of 14.5 months, two patients died, six developed local recurrence, four developed metastatic disease and another patient developed second primary sarcoma. The overall 5-year survival was 80% while the 5-year disease-free survival rate was 24.1%. The majority of the patients failed within first and second year. None of the parameters except grade of tumour (P=0.008) were found to have a significant effect on survival. The overall survival rate for patients with soft tissue sarcoma of the head and neck is good, however, disease-free survival is poor as the majority of these fail within 2 years of completing treatment.

Published in: Int J Oral Maxillofac Surg. 32(1):43-8, Feb, 2003.

ATTRIBUTING DEATH TO CANCER: CAUSE-SPECIFIC SURVIVAL ESTIMATION.

Mathew A, Pandey M.

Cancer survival estimation is an important part of assessing the overall strength of cancer care in a region. Generally, the death of a patient is taken as the end point in estimation of overall survival. When calculating the overall survival, the cause of death is not taken into account. With increasing demand for better survival of cancer patients it is important for clinicians and researchers to know about survival statistics due to disease of interest, i.e. net survival. It is also important to choose the best method for estimating net survival. Increase in the use of computer programmes has made it possible to carry out statistical analysis without guidance from a bio-statistician. This is of prime importance in third- world countries as there are a few trained bio-statisticians to guide clinicians and researchers. The present communication describes current methods used to estimate net survival such as cause-specific survival and relative survival. The limitation of estimation of cause-specific survival particularly in India and the usefulness of relative survival are discussed. The various sources for estimating cancer survival are also discussed. As survival-estimates are to be projected on to the population at large, it becomes important to measure the variation of the estimates, and thus confidence intervals are used. Rothman's confidence interval gives the most satisfactory result for survival estimate.

Published in: J Postgrad Med.48(4):322-6, Oct-Dec, 2002.

Other Publications

1. Mathew A and Murthy NS. Design of randomized clinical trials. Obs & Gynaec. Today, 2003: 8: 131-138.
2. Mathew A, Peters U, Chatterjee N, Rothman N, Sinha R. Fat, fiber, fruits, vegetables and risk of colorectal adenomas. Int J Cancer 2002 (in press).
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1. Mathew A, Rajan B. Cancer epidemiology and prevention in Indian ambience. March RD and Samuel J (eds). In Clinical oncology for medical students and practitioners, 2002.
2. Mathew A. Epidemiology of lung cancer in India, 3rd Dr. F Joseph memorial CME on lung cancer, 2002.
3. Mathew A. Cancer Epidemiology in Indian Ambience, (eds) Mathew B, Wesley RS, Handbook on Cancer control, Regional Cancer Centre, Trivandrum, 2002, pp 11-17.
4. Mathew A, Cancer registration –with emphasis on Indian Scenario. In. Mathew A (ed), Basic information for cancer registry documentation, Regional Cancer Centre, Thiruvananthapuram, 2002.
5. Mathew A and Asha NM, Classification and coding of neoplasms. In. Mathew A (ed), Basic information for cancer registry documentation, Regional Cancer Centre, Thiruvananthapuram, 2002.
6. Mathew A and Vijayaprasad B, Statistical methods for cancer registries. In. Mathew A (ed), Basic information for cancer registry documentation, Regional Cancer Centre, Thiruvananthapuram, 2002.
7. Mathew A, Follow-up and Surveillance, In. Mathew A (ed), Basic information for cancer registry documentation, Regional Cancer Centre, Thiruvananthapuram, 2002.
8. Nair MK and Mathew A. Cancer registries and National Cancer Control Programmes In. Mathew A (ed), Basic information for cancer registry documentation, Regional Cancer Centre, Thiruvananthapuram, 2002.
9. Mathew A, Cancer registries and cancer pattern in Kerala. In. Mathew A (ed), Basic information for cancer registry documentation, Regional Cancer Centre, Thiruvananthapuram , 2002.

Books/ Monographs

1. Mathew A (editor): Basic information for cancer registry documentation, Regional Cancer Centre, Trivandrum, 2002.
2. Mathew A and Vijayaprasad B (editors): Cancer incidence and mortality in Trivandrum (1998-1999), Population based cancer registry, Regional Cancer Centre, Trivandrum, Kerala, India, 2002.

Presentations in Conferences / Seminars

1. Fat, fiber, fruits and vegetables and the risk of colo-rectal adenoma, Indian Association of Cancer Research, Trivandrum, January 9-12, 2003.

Invited Lectures

Dr. Aleyamma Mathew

1. Epidemiology of Brain tumors. CME on Brain tumors, Trivandrum, July 2002.
2. Panelist, Workshop on gynecological cancer. Indian medical conference, July, Thiruvananthapuram.

3. Epidemiology of salivary gland neoplasms. CME on salivary gland neoplasms, Regional Cancer Centre, Thiruvananthapuram, August 2002.
4. An overview of epidemiology of cancer in India. WHO sponsored workshop for doctors on cancer control on oral, breast and cervical cancers, Regional Cancer Centre, Thiruvananthapuram, October 2002.
5. Epidemiology of lung cancer in India. Prof F Joseph Memorial CME, Regional Cancer Centre, Thiruvananthapuram, November 2002.
6. Cancer registration –with emphasis on Indian Scenario. WHO sponsored workshop on cancer registry training programme, Regional Cancer Centre, Thiruvananthapuram, January 2003.
7. Follow-up and Surveillance, WHO sponsored workshop on cancer registry training programme, Regional Cancer Centre, Thiruvananthapuram, January 2003.
8. Cancer registries and cancer pattern in Kerala. WHO sponsored workshop on cancer registry training programme, Regional Cancer Centre, Thiruvananthapuram, January 2003.

HUMAN RESOURCE DEVELOPMENT –

CANCER REGISTRY TRAINING PROGRAMME, REGIONAL CANCER CENTRE, TRIVANDRUM

6th–10th January 2003

The Hospital Cancer Registry, Trivandrum has conducted a WHO & DGHS sponsored Cancer Registry Training Programme at the Regional Cancer Centre, Trivandrum, from 6th –10th January 2003. Around 40 participants from other cancer registries/ cancer hospitals in the southern region of the country attended the programme. The training programme was formally inaugurated by Prof J Chandra, Worshipful Mayor of Trivandrum Corporation on 6th January.

A pre-training evaluation was conducted before the start of the training programme The contents of the programme highlighted the importance of cancer registry operations and its extreme usefulness for implementing the control activities. There were practical sessions and demonstrations regarding the registry operations. This was an excellent opportunity for the participants particularly to clear many of their doubts. A post-training evaluation was also done. The evaluation by the participants has revealed that the programme was well received by all of them. A handbook on some basic information on cancer registry methods as well as some necessary medical information for the registry staff was published.

Cancer Control Programmes

There are a number of programes on cancer control now ongoing in our country. It is important that the registry organizations are aware of them. There are inquisitive queries regarding these made to registry workers.

The International Agency for Research on Cancer (IARC), The Regional Cancer Centre, Trivandrum and the Tata Memorial Hospital, Mumbai have embarked on several such programs ongoing in India. We have some of these reports now.

Oral Cancer Screening Study: This is a study undertaken by IARC in collaboration with Regional Cancer Centre, Trivandrum.

Summary: A cluster randomized controlled oral cancer screening trial is on-going in the Trivandrum District, India, to evaluate the efficacy of screening in reducing oral cancer mortality. Subjects, aged 35 years and above, in 13 clusters in the Trivandrum district, India, were randomized to the intervention (screening) group (7 clusters, 78,969 subjects) to receive three rounds of screening by oral visual inspection by trained health workers at 3-year intervals or to a control group (6 clusters, 74,739 subjects). Two rounds of screening were completed between 1995 and 2002 during which 69,896 (88.5%) subjects were screened at least once, and 59.7% of the 4408 screen-positive subjects were further investigated. In the intervention group, 344,404 person-years were accrued and 329,326 person-years were in the control group. In the intervention group, 149 incident oral cancer cases and 65 deaths from oral cancer were observed, and 106 incident cases and 62 deaths; from oral cancer were observed in the control group. The programme sensitivity for detection of oral precancerous lesions and cancer was 81.5% and the programme specificity was 84.8%; the programme positive predictive value was 39.6%. In the intervention group 37.6% of the cases were in stages I – II, as opposed to 18.9% in the control group. The 3 year survival rate was 57.5% in the intervention and 38.8% in the control group ($p<0.05$). The age standardized oral cancer mortality rates were 21.2/100,000 person-years in the intervention and 21.3/10,000 in the control group. After completing two rounds of screening, oral cancer mortality rates were similar in both study groups.

Reference:

1. Early Findings from a Community Based Cluster Randomized Controlled Oral Cancer Screening Trial in Kerala India, Sankaranarayanan. R, Babu Mathew, Biju Jose Jacob, Gigi Thomas, Thara Somanathan, Poola Pisani, Manoj Pande, Ramdas. K, Najeeb. K, Elizabeth Abraham, Jl. Cancer - 88, No. 3, Pages 664 – 673, February 1, 2000.

2. Interim Results from a Cluster randomized controlled Oral Cancer Screening Trial in Kerala, India, Ramdas. K, Sankaranarayanan. R, Binu Jose Jacob, Gigi Thomas, Thara Somanathan, Cederic Mahe, Manoj Pande, Elizabeth Abraham, Najeeb. S, Babu Mathew, Parkin. D.M., Krishnan Nair. M., Jl. Oral Oncology – Elsevier, No. 39, Page 580-588, 2003.

Human Resource Development Programmes

Several meetings and workshops were held during the past 2 years, which gave opportunities for the registry workers to interact with each other. Registry Training Workshop was conducted by Chennai registry and Trivandrum registry. 8 other workshops were conducted in connection with Development of Atlas project in different parts of the country.

Further these workshops & meetings brought together a large number of Pathologists and Oncologists, many of whom were sensitized to cancer registry operations. Dr. A. Nandakumar informs that there have been very many requests for organizing cancer registries.

NCRP - ICMR Workshops on 'Development of An Atlas of Cancer in India', Project Supported by WHO.

Date	Place	Programme	Participant	Collaboration
May 11-12, 2001	Southern Regional Workshop Bangalore	Cancer Atlas	92	NCRP/WHO
June 8-9, 2001	Western Regional Workshop Mumbai	Cancer Atlas	77	NCRP/WHO
June 15-16, 2001	Eastern Regional Workshop Kolkatta	Cancer Atlas	92	NCRP/WHO
August 2, 2001	Cancer Registries Workshop Bangalore	Cancer Atlas	32	NCRP/WHO
September 14-15, 2001	Northern Regional Workshop Lucknow	Cancer Atlas	106	NCRP/WHO
March 26-27, 2002	Development of PBCR's Bangalore	PBCR	24	NCRP/WHO
May 11, 2002	North-Eastern Workshop Guwahati	Cancer Atlas	47	NCRP/WHO
July 31 August 1-2 2002	All India Workshop Bangalore	Cancer Atlas	152	NCRP/WHO
January 6-10 2003	Tumour Registry Workshop Trivandrum	Tumour Registry	40	WHO/RCC
February 4-7 2003	Can Reg 4 Bangalore	Computer Software	50	NCRP/IARC
March 17-21 2003	Tumour Registry Workshop (Northern RCC) Chennai	Tumour Registry	10	WHO/CANCER INST. (WIA)
September 1-12 , 2003	International Workshop Bangalore	Epidemiology	52	IARC/RCC

Statistics on Radiotherapy facilities in India (till Dec-2002)

Information By Kind Courtesy Dr. K.S. Parthasarathy, Secretary, AERB.

No. of Centres	State	Population 2016 in '000	Co-60 Units	Cs-137 Units	LA	Est. Cancer in 2016	LDR	HDR	Intracavitary Brachy Facilities	Interstitial Brachy Facilities	No. of Brachy Centres
22	A.P	89,041	24	0	2	71,233	2	3	12	5	15
6	Assam	32,649	8	0	1	26,119	2	0	0	0	2
5	Bihar	1,33,082	6	0	0	1,06,466	1	2	0	0	3
12	Delhi	21,084	17	1	9	168,67	2	4	2	2	7
2	Goa	2,081	2	0	0	1,664	0	0	1	0	1
7	Gujarat	59,567	11	1	5	47,654	1	4	2	2	4
3	Haryana	25,297	6	0	2	20,238	1	2	2	1	2
1	H.P.	7,934	2	0	0	6,347	1	0	1	0	1
3	J.K.	11,415	5	0	1	9,132	1	0	0	0	1
15	Karanataka	63,007	21	1	3	50,406	1	3	10	6	11
6	Kerala	36,972	13	1	1	29,578	2	1	4	1	4
11	M.P.	1,05,756	15	0	0	84,605	1	2	1	1	4
27	Maharashtra	1,08,199	33	0	7	86,559	8	11	14	2	23
1	Mizoram	1,270	1	0	0	1,016	0	0	0	0	-
3	Orissa	41,137	5	0	0	32,910	1	1	1	0	2
1	Pondicherry	1,472	2	0	0	1,178	0	1	1	0	1
5	Punjab	28,146	5	0	1	22,517	1	0	1	1	2
7	Rajasthan	71,849	10	0	0	57,479	1	3	2	1	5
22	T.N.	70,037	30	0	10	56,030	5	4	16	5	19
13	U.P.	2,44,690	19	0	1	1,95,752	5	3	3	0	6
9	W.B.	96,619	11	5	1	77,296	1	2	3	1	3
181	Total		246	9	44		37	46	76	28	116

LA – Linear Accelerators.

Population 2016 – Available Estimated Population for 2016 (in thousands) Ref: Population Projections for India and States 1996-2016 Registrar General of India, Ministry of Home Affairs, Govt. of India, New Delhi August 1996.

Est. Cancer in 2016 – Estimated Annual Number of new cancer cases in 2016 in each state. Calculated assuming the incidence rate as 80/100,000 population. Current incidence rates of cancer in India: Rural: range 55–90/100,000. Urban: range 70–90/100,000.

Human Resource Development-Chennai-Cancer Institute (WIA) Special Training for Masters Degree Students

Course Coordinator: Dr. R. Swaminathan
Division of Epidemiology & Cancer Registry
Cancer Institute (WIA), Chennai

'A two-week Observation Training Program' was conducted for the twelve first year Master of Application Sciences students of 'School of Medical Education, Department of Medical Documentation, Mahatma Gandhi University, Gandhinagar, Kerala' at the Division of Epidemiology and Cancer Registry, Cancer Institute (WIA), Chennai during October 13-25, 2003. The curriculum included lectures on Cancer Registration, Coding and Bio-Statistics. There were guest lectures on 'Medical Record: An indispensable tool in medical research' and 'Cancer Awareness' from eminent persons in the respective fields. There were hands on training in hospital registration system using computers and in the areas of follow up, coding and other forms of documentation of medical details.

THE LYMPHOMAS

Kind Courtesy: April Fritz, Ms. Sharon Whelan
Text Presentation: Thara Somanathan.
Regional Cancer Centre, Trivandrum.

Coding Lymphoma cases is many a time problematic for the registry workers. Several sub-classification systems and changes in terminology and added to this, the problem of discriminating nodal and extra nodal, bilateral etc persists. Ms. Sharon Whelan recently gave a lecture on lymphoma during the Can Reg 4 training programme in Bangalore. She was kind enough to pass a hard copy of slide material to the participants and CRAB approached Sharon for presenting it in 'CRAB', so that the information can be shared with other registry workers. The material was put to a text form by Dr. Thara Somanathan M.D., Assistant Professor in Pathology, Regional Cancer Centre, Trivandurm.

Malignant Lymphomas is a disease predominantly of Lymphocytes which form one of the two main categories of blood cells. The blood cells are formed in a specialized form of connective tissue called haemopoitic tissue. There are two types of haemopoitic tissue-myeloid and lymphatic tissues. The tissue of bone marrow where RBC's, WBC's and Platelets are formed is termed myeloid tissue. The lymphatic tissue includes lymph nodes, thymus, spleen, tonsil, adenoids, lymphoid aggregate in the intestinal mucosa, lung, bone marrow etc. The blood cells-both lymphoid and myeloid are derived from a common ancestral precursor cell type called Colony Forming Unit (CFU) which is a free cell and is a Pleuripotent stem cell.

In ICD-O-3, the WHO classification (1999) of Lymphomas is used. This is parallel to the REAL classification i.e. - (Revised European-American Lymphomas) classification.

The anatomical Lymph node regions are shown in the diagram-1.

In ICD-O-3, 7 grouped lymph node regions have been identified for coding purposes, viz. Lymph nodes of head, face and neck (C77.0), Intra thoracic Lymph nodes (C77.1), Intra abdominal lymph nodes (C77.2). Lymph nodes of axilla or arm (C77.3), lymph nodes of inguinal region or leg (C77.4), pelvic lymph nodes (C77.5) and lymph nodes of multiple region (C77.8) and lymph nodes NOS (C77.9).

While coding the following may be recognized as Axial Lymph nodes – Not Bilateral.

They are

- Mediastinal
- Para-aortic
- Mesenteric
- Internal mammary

Each one of these counts as 1 lymph node region.

Bilateral Lymph nodes are the following.

- Cervical - Supraclavicular, occipital, preauricular
- Infraclavicular
- Axillary and intramammary
- Hilar
- Inguinal
- Femoral
- Pelvic
- Extremities

If both sides are involved, count as 2 lymph node regions.

Lymphatic Structures ICD-O Topography

C77._	Lymph nodes	C11.1	Pharyngeal tonsils (adenoids)
C42.2	Spleen	C17.2	Peyer's patches
C37.9	Thymus gland	C18.1	Lymphoid nodule of appendix
C02.4	Lingual Tonsils	C14.2	Waldeyer's ring
C09.9	Palatine Tonsils		

Common Extranodal Sites

Stomach	* Large Intestine
Small intestine	* Ovaries
Uterus	* Liver
Bone	* Salivary Gland
Brain	* Thyroid
Breast	*(Supplemented by Dr. Thara Somanathan)

Hodgkin's Disease Cell Types – This is largely derived from Greminal Centre. B Cells and H.D. is regarded as a distinctive form of B cell lymphoma (Page 13, ICD-O-3).

- Classic Hodgkin's
  - Lymphocyte rich (formerly lymphocyte predominant)
  - Nodular sclerosis
  - Mixed cellularity
  - Lymphocyte depletion.
- Nodular lymphocyte predominance.

WHO Classification of Lymphomas

Lymphoid neoplasms

- B-cell neoplasms
- Precursor B-cell
- Mature B-cell

T-cell and NK cell neoplasms

- Precursor T-cell
- Mature T-cell

Hodgkin's lymphoma

- Classic (4 types)
- Nodular lymphocyte predominance

ICD-O-3 Lymphoma Morphologic type coding

Code Groups

959	Malignant lymphoma
965-966	Hodgkin's lymphoma
967-972	Non-Hodgkin's lymphoma
967-969	Mature B-cells
970-971	Precursor cell lymphoblastic

Equivalent Terms

Follicular lymphoma = follicle center cell lymphoma, follicular
Mantle cell lymphoma = mantle zone lymphoma
Anaplastic large B-cell lymphoma = diffuse large B-cell lymphoma
Mature T-cell lymphoma, NOS = peripheral T-cell lymphoma.

Lymphoma Coding Guidelines

Primary Site.

a) Code site of origin, not site of biopsy.

b) If single Lymph node chain (Stage I), code that site.

c) If more than one nodal area (Stage II-IV), code C77.8, lymph nodes of multiple regions.

d) Extranodal site (with or without regional nodes): code primary to organ of origin, such as stomach.

e) If origin of extranodal lymphoma is unknown, code to C80.9, unknown primary, unless another site is suggested in ICD-O-3.

f) Bone Lesions.

Single : Probably bone primary.
Multiple: Probably metastatic.

Morphology.

g) WHO Classification terminology (Table 13 in ICD-O-3) is the preferred classification.

h) If two diagnoses are given, code the more specific term, which may not be the one with the higher code number.

i) Terms considered non-specific

9590/3 Malignant Lymphoma, NOS
9591/3 Non-Hodgkin Lymphoma,, NOS
9650/3 Hodgkin Lymphoma, NOS
9680/3 ML, diffuse large B-cell, NOS
9690/3 Follicular Lymphoma, NOS
9702/3 Mature T-cell Lymphoma, NOS
9727/3 Precursor cell Lymphoblastic Lymphoma, NOS

Grade

j) For Lymphomas, T-and B-cell information takes precedence over grading or differentiation.

6th Digit Phenotype Codes (ICD-O Morphology)

5 T-cell
6 B-cell
7 Null cell
8 NK cell
9 Not determined, not graded.

k) Code any statement of T-,NK- or B-cell involvement whether or not marker studies are documented, including the term phenotype.

l) If record does not indicate phenotype, DO NOT code from header in ICD-O-3.

m) Do not code the following in the 6th digit 'grade' field.

high grade
low grade
intermediate grade

n) Do not code grade 1, 2, or 3 for

Hodgkin's Lymphoma, nodular sclerosing Follicular Lymphoma

in the 6th digit grade field.

How Many Disease Processes?

IARC Rules:

Use ICD-O-3 Table 25

US Rules:

Use the hematopoietic primaries table to determine single vs. multiple primaries

How to Tell Extranodal Disease from Stage IV

Site of origin

Stomach, colon, brain, uterus - most likely extranodal
bone, lung - most likely Stage IV
liver, bone marrow - always Stage IV

Number of foci/lesions

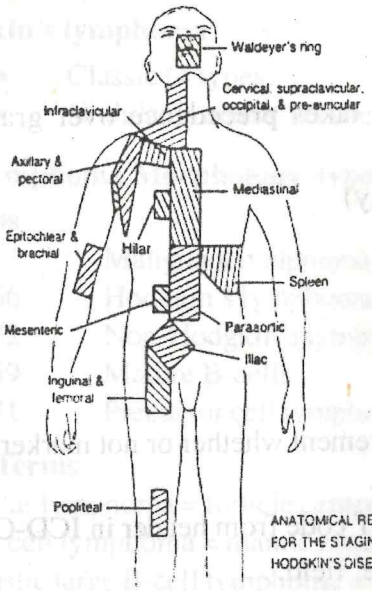
One - extranodal
many or diffuse - Stage IV.

How to Code a Lymphoma Diagnosed in Bone Marrow.

In the absence of more information.

Site : C77.9 LN, NOS
Histology : Lymphoma, NOS or more specific code.
Stage : IV (BM infiltrate)

REGIONAL LYMPH NODES



Anatomic staging: Anatomic definition of separate lymph node regions.

Source: Clinical Oncology: A Multidisiplinary Approach for Physicians and Students, 7th edition. Philip Rubin. W.B. Saunders Company, 1993.

LYMPH NODE CHAINS

Lymph nodes above the diaphragm

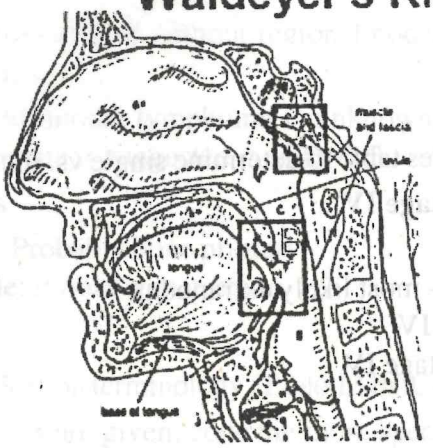
Waldeyer's ring
Tonsils, adenoids (nasopharynx), lingual tonsils
Cervical [neck] (occipital, preauricular, submental, submandibular, internal jugular)
Infraclavicular
Supraclavicular (scalene)
Axillary, pectoral
Mediastinal (peritracheal, thymic region)
Hilar
Epitrochlear, brachial

Lymph nodes below the diaphragm

Upper abdomen (splenic hilar, celiac, porta hepatis)
Lower abdomen (iliac, para-aortic, retroperitoneal, mesenteric, abdominal NOS)

Iliac **Inguinal**
Femoral **Popliteal**
Spleen

Waldeyer's Ring (C14.2)



A. Pharyngeal tonsil (adenoids)

B. Palatine tonsil

C. Lingual tonsil (base of tongue)

Graphic: The Anatomy Coloring Book

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