Kidwai Memorial Institute of Oncology (KMIO), Bangalore

Regional Cancer Centre (RCC)

Vision Statement (2015-2025)

Introduction

Kidwai Memorial Institute of Oncology, Bangalore is a Regional Cancer Centre (RCC). KMIO is a recognized exclusive tertiary cancer care centre cum academic and research institute, delivering modern health care by groups of trained professionals and paraprofessionals coming together as interdisciplinary teams and is facilitating for advanced medical investigation and treatment. KMIO was accorded RCC status on 1st Nov 1980 by Government of India and is a member of UICC and recognized by WHO. KMIO is State Government run Autonomous Institute. The Indian Council of Medical Research has recognized this referral Institution as a research organization.

Kidwai Memorial Institute of Oncology commemorates the memory of one of the most distinguished sons of India. Shri Rafi Ahmed Kidwai, who played a great role in the freedom struggle and later worked shoulder to shoulder with other national leaders in strengthening the roots of democracy and secularism in our country. The then Governor of Bombay donated 20 acres of the Campus land and Rs.1.00 lakh for the Radiotherapy machine.

KMIO was conceived by the City Fathers as far back as 1957 as a private venture. It was the taking over of the project by the Government of Karnataka in 1971 that finally set the ball rolling to the inauguration of the institute on 26th June 1973. The Government of Karnataka by an order on 27th December 1979, converted the institute into an autonomous Institution, to enable it not only to mobilize resources and expertise from other national and international agencies but also, consequent thereof, to develop and grow further into a pioneer and model in the field of Oncology in Karnataka. The Institute was registered on 8th January 1980 as an independent body. The first Director of the Institute---Dr. M. Krishna Bhargava took charge as Director of the autonomous institute on 23rd January 1980. Monday the 21st April 1980 was a momentous day for the Institute, Shri B. Shankaranand, Union Minister for Health and Family Welfare, Government of India, formally inaugurated the autonomous Kidwai Memorial Institute of Oncology.

The Kidwai Memorial Institute of Oncology has, with its autonomous status, finally evolved into a Tertiary Cancer Institute providing modern multidisciplinary total patient care, conducting medical/clinical research, promoting cancer education programs both at the institute and in the community and initiating planned epidemiological studies in this part of the country. The autonomy of the centre confers maximum centralized administrative and management authority over planning and execution, budgets, allocations, staff appointments and procedures ensuring

thereby the most important attribute of such a centre—the excellence in quality of all work rendered.

The Institute stands poised today on the threshold of a future with an endless potential and promise in the service of cancer patients in particular and in cancer control in general in the State of Karnataka. The quality of care, in all of its manifestations, is recognized as the focus of our clinical efforts, to include recognition and measurement of quality indicators, and continuing clinical process improvement.

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About Cancer

In today's world, everyone will be touched by cancer - as a person living with cancer, a family member or a friend. Cancer is the generic term for a large group of diseases in which cells grow out of control and can spread to other parts of the body. In 2008, it is estimated that world over there were over 12.4 million new cases of cancer and about 7.6 million deaths from cancer and 25 million people living with cancer within five years of diagnosis worldwide. The majority of the global cancer burden has shifted from westernized, developed countries to medium- and low-income countries. More than half of cancer cases and 60% of deaths occur in the less-developed countries. The global burden of cancer doubled during the last 30 years of the last century. It is estimated that in 2030 there will be 17 million deaths from cancer Worldwide. It is estimated that in 2030 there will be 26 million cases of cancer worldwide.

Almost 1/3 of all cancer incidences are preventable and nearly another 1/3 are treatable with early detection and proper resources. Because of the aging population and adoption of "western" lifestyles the greatest problems with cancer are found in the low- and middle-income countries. Less then 20% of the world's population is covered by cancer registration. In Asia only 8.5% of the population is covered by cancer registration . ***In India there are*** ~900,000 new cancer cases each year with 2,500,000 prevalent cases and 550,000 cancer deaths in a year. In our contry there is a relatively young cancer population as per the existent age pyramid. Tobacco-related cancers- is an important concern (40% in men & 25% in women for India). Cervix is still the leading cancer in women across the country. Breast cancer has overtaken cervix in urban metropolitan registries

Projections for future (2015-2020): Doubling of the cancer incidence in next 15 years. Ageing population with consequent increase in cancer incidence & prevalence and there is an expected Huge shortage of Oncology infrastructure (equipment and human resource) to meet the expected increase in cancer burden.

Kidwai Memorial Institute of Oncology, Bangalore (KMIO) mission is to cancer care for cure and more. KMIO being one of the country’s largest Regional Cancer Centres, has to take a lead in taking the Cancer burden. KMIO desires to take a lead in mobilizing its team of Doctors, researchers, Nurses and other Staff to tackle the ever increasing Cancer, its problems and to heal the sufferings of the Cancer patients.

Our Vision

We at KMIO wish to improve the environment for oncology, access to quality cancer care, breaking research and programs that make a tangible difference in the lives of people with cancer. We are committed to providing our cancer patients with comprehensive oncological care including conventional, innovative, and investigational modalities. KMIO is also ideally suited to promote and provide facility for lifelong learning for oncology professionals and those involved in cancer research.

Our Vision statement paints a picture of what our goals are for the future. It clearly defines the work we must do and connects to the behaviours we must demonstrate to achieve these goals within the next five to ten years.

- Be recognized for clinical excellence and innovation in cancer care, research and education
- Develop a highly coordinated patient experience
- Be distinguished by the quality of service for our patients

KMIO is committed to providing our patients with comprehensive oncological care including conventional, innovative, and investigational modalities. KMIO is dedicated to fostering sensitivity to cultural and spiritual diversity, interpersonal relationships and patient autonomy, in order to establish appropriate and realistic treatment goals for the patient. KMIO is also committed to promoting an environment where mutual respect and open communication amongst the patients, staff and the physicians are valued. In view of the increasing cancer burden KMIO is committed to promoting educational opportunities for its patients, its staff, and its community. All patients with cancer will have lifelong access to high-quality, effective, affordable and compassionate care. Information we learn from every patient will be used to accelerate progress against cancer. Resources will exist to attract the best clinicians and investigators to provide optimal patient care and to conduct translational research. KMIO will be recognized as the most trusted source of cancer care worldwide. We wish to incorporate a dedicated and sophisticated supporting and efficient management & information systems that enhance the quality care for our patients in a responsible manner.

The Vision for the next 10 years will focus on the following Areas. To promote a coordinated, translational research-oriented culture of scientific discovery applied to human cancers culminating in dissemination to patients and populations well-characterized,

high- impact advances in cancer prevention, detection, treatment, cure, and survivorship.

In this context, KMIO provides a unique forum and academic network for cancer researchers across our community to accomplish more than they may individually. KMIO embraces community oriented education and research to facilitate interventions that reduce the likelihood that our patient population will develop cancer and suffer from its consequences.

The vision is to be one of the leader Institutions in achieving freedom from cancer by extending and enhancing the lives of individuals regionally, nationally, and throughout the world. We will achieve this vision through creative collaborations, excellence in research, and research driven, multi-disciplinary cancer prevention and patient care programs. The creation and dissemination of our knowledge will be achieved through translational research (bench to bedside), technology development & Transfer, and novel programs in education and training. Our priority is to assure that all those at risk for and affected by cancer have access to the highest quality care.

Our Mission

- Objectives - to deliver high quality health care on par with the international standards To understand, to prevent and to cure cancer.
- To provide excellent, evidence-based care for each patient we serve, while advancing cancer care for tomorrow.
- KMIO is committed to conquering cancer through research, education, prevention and delivery of high-quality patient care.
- KMIO shall be a national leader recognized for clinical excellence, innovation, Cancer research and education. KMIO shall be preferred destination for a high quality patient care environment where, coordinated patient experience and distinguished by the quality of service, shall be the silver line.
- **On the whole the desire of KMIO is to create a self sustaining internationally competitive state of the art infrastructure capable of delivering cancer care in all its dimensions at literally zero charges to any cancer patient of our country.**
- **This above noble vision of Kidwai Memorial Institute of Oncology (KMIO) is feasible with the Government `s recognition of KMIO as a prospective centre to be developed as a Centre of national importance.**

Our Motto

Patient Above All - by treating those we serve with compassion, dignity and respect.

Excellence - by acting with integrity and striving for the highest quality care & service.

Results - by improving cure rates and exceeding the expectations of those we serve, we set high standards for ourselves.

"**Cancer Care for cure and more"**

Innovation

At KMIO we are improvising & innovating methods of rapid identification and deployment of strategies leveraging operating model and the science of care delivery to ensure an extraordinary patient experience, which is safe, efficient and effective

Medical excellence, provided by the best people, delivering the best care is the reputation we are striving to build in the minds of our patients, families and our communities through the actions and behaviours demonstrated through every interaction with our patient. We are driven to provide care that cures and comforts, research that informs the world, and education that enlightens and enables future generations. We proudly stand on our rich history and use it as a platform from which to embrace discovery and change.

Core Values

The principles that guide our practice are patient centred and shall encompass three spheres:

Patient Care –

- To provide compassionate, individualized care for our patients.
- To provide care that is comprehensive and coordinated close to our patients' home.
- To attract and nurture the best physicians.
- To recognize and support the central role of clinical research in advancing cancer care.

Culture –

- That engenders a collegial physician partnership.
- That respects individuals and the collective wisdom of the group.
- That embraces openness and fairness.

Professional management -

- Promotes convenient access at rural and urban sites.
- Provides leadership in efficient care delivery and improves all aspects of cancer care.
- Provides a financial structure to expand services to our patients.
- Is competitive in all aspects of our services

Values: Core values reflect what is most true and important to us as an organization. These are values that have shaped us and will continue to – they do not change given circumstances or time but rather are consistent throughout our mission areas. KMIO is a special place to work and the staff and faculty who live these values have made it so. These values will guide and power our personal and collective actions and enable future successes on behalf of individuals and the world.

Integrity: We are committed to making each decision, whether related to patient care, research, education or administration, based on standards that are thoughtful, informed, honest, transparent when appropriate and always respectful of privacy.

Teamwork: We value and encourage the viewpoints and constructive opinions of all people and disciplines and recognize that all contributions strengthen the results we achieve, the value we provide, the actions we take and the team we strive to be.

Commitment: We are devoted to achieving extraordinary progress on behalf of those we serve; patients and families who come to us during times of great need, scientists and clinicians who wish

to collaborate, students seeking education, the science of cancer that awaits our contributions, and the community that deserves strong stewardship and economic leadership.

Compassion and Respect: We are enriched by the diverse cultures, needs, and expectations of our co-workers and of the communities we serve. It is our privilege and responsibility to appreciate these differences as we establish research goals, develop care plans, and interact with one another.

Unlike other diseases Cancer care is generally complex and stressful for both the patients and their families, and care givers also. Cancer treatment consumes a minimum 2-3 months upto 6-12 months (sometimes) of patients time. The stress on patients and their families/care takers due to loss of wages of patients and their families and funding issues related to diagnostic investigations and long treatment and its toxicities are highly stressful.

Cancer infrastructure are generally very expensive, recent trends and advances in reduced treatment duration and considerably reduced toxicities have in recent years put many oncology facilities on a different stress zones

Focus & Thrust areas

1. Patient Care
    - For new cancer Patient :
        - Stream lining & simplification of patient registration process
        - Case history recording
        - streamline of patient workup including routine and special investigation (reduction of patient discomfort in terms of reduced paperwork, queues,)
    - System based Treatment
    - Protocol based treatment
    - Creation of patient care and workflow infrastructure:
        - Outpatient & Screening wing (includes all diagnostic, workup & staging facility)
        - Treatment facility (have to be upgraded to keep in pace with the increasing patient load and also address the issue of providing state of the art and modern treatment on par with the west)
        -

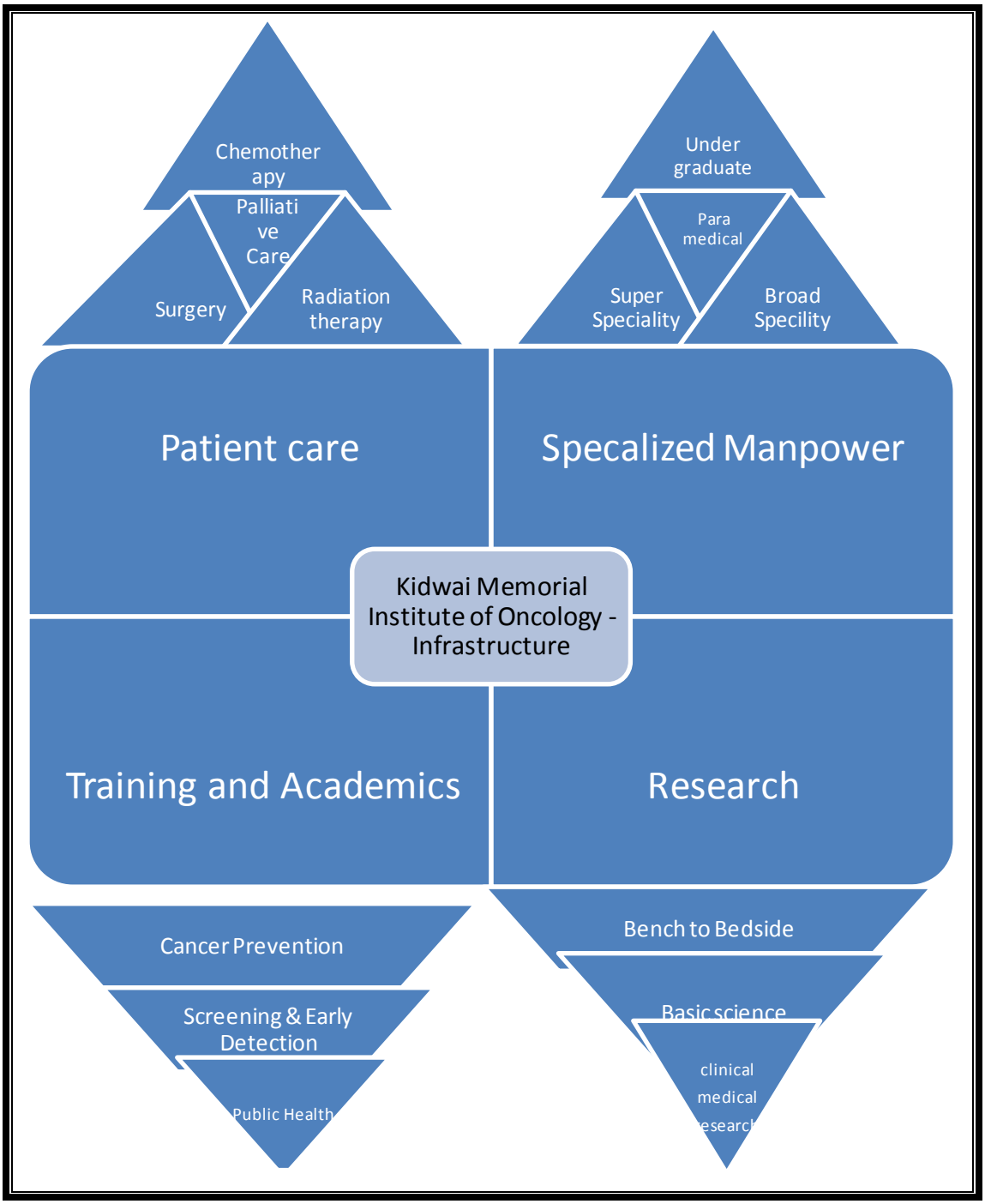
2. Academics:
    - Specialized manpower
        - Medical
            - Super Speciality courses
            - Speciality courses
        - Para Medical
        - Ancillary
        - Community Education

3. Research:
    - Basic Science
    - Translational Research
    - Clinical / Medical Research
    - Community

- Cancer prevention
- Advanced therapeutics research

4. Community oncology:
    - Cancer prevention
    - Cancer screening & early detection

Focus Areas of Development



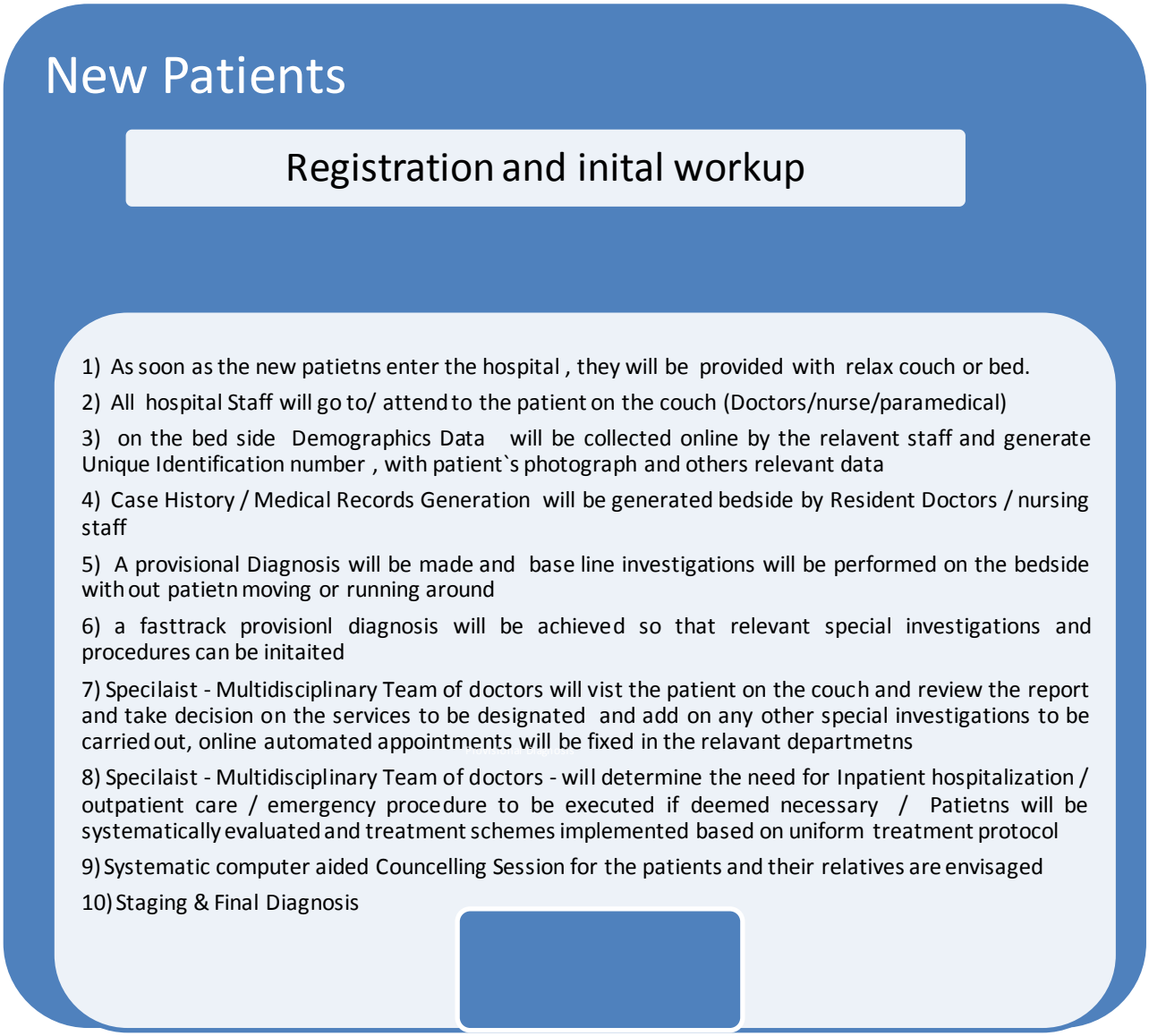
Patient care Pathway

Infrastructure

1. New Patients – work up & staging complex :
2. Integrated Treatment Zone Complex
    - Surgical
    - Radiation
    - Medical
    - Diagnostics
    - Nuclear medicine
    - Palliative care
    - Hospice Care (a new land with lot of greenery in the periphery of Bangalore to be allotted)
3. After treatment Follow-up Complex
4. Research Complex
5. Community Oncology

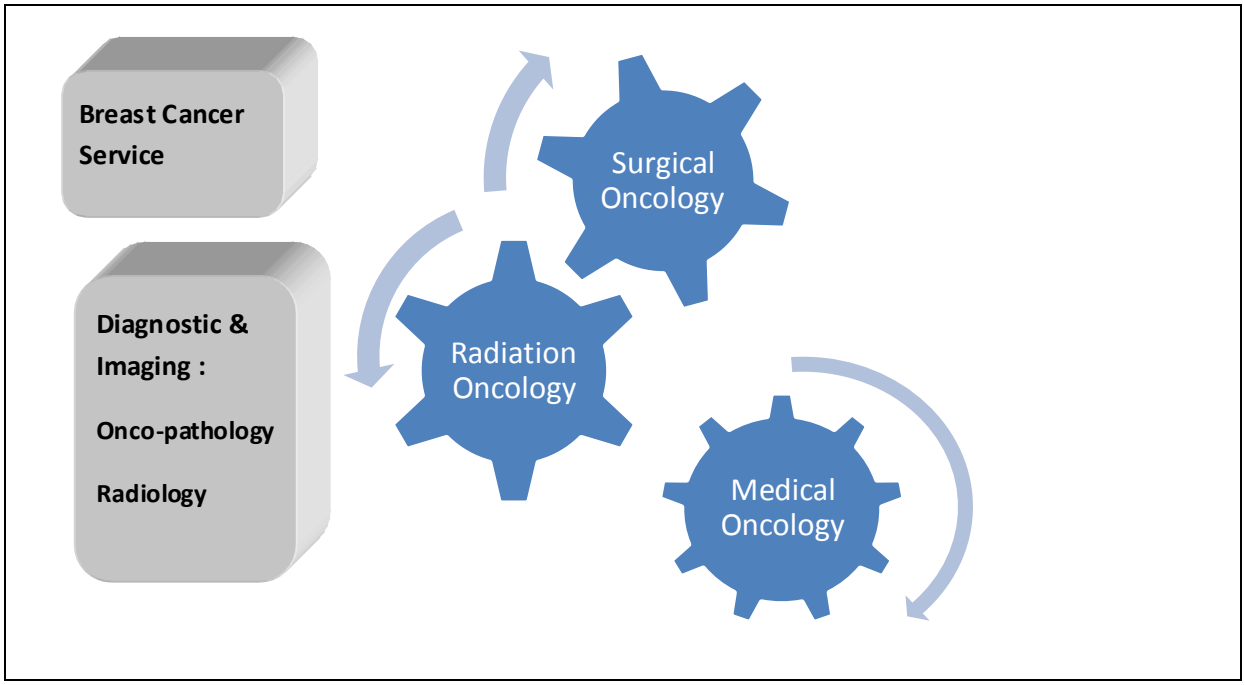
New Patients – work up & staging complex : An innovative patient centred scheme is being envisaged , in-order to grossly reduce the discomforts of conventionally practiced methods of patient care, where in patients & their relatives wait in front of the doctors consultation rooms. Here the doctors / nursing / technologist team is envisaged to go to patient on couch and deliver heath care in the OPD.

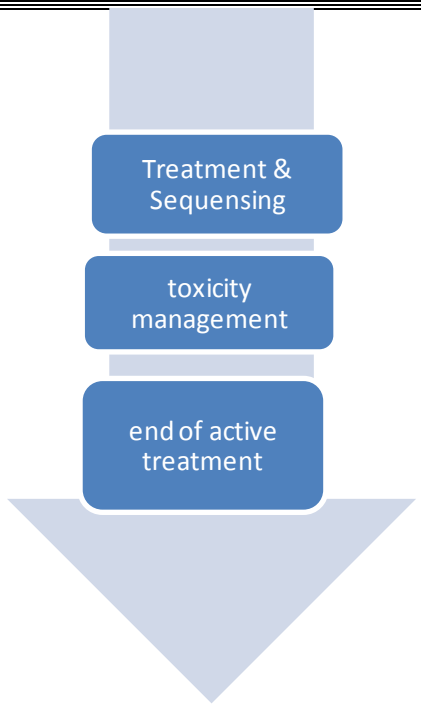
Note: The above is feasible only if adequate relevant manpower , infrastructure , machinery , Computerization and e-hospital facility is provided



Integrated Multidisciplinary Treatment Teams & Services : It is envisaged that once the Provisional / final Diagnosis is made the patients are transferred to the Body site wise Service Treatment Zone. The service zone – Team shall consist of Specialist Doctors from Surgical Oncology, Radiation Oncology, Medical Oncology / other + Nursing + Paramedical + Supportive Staff

Example of a Service : It shall be National Protocol based Management and sequencing

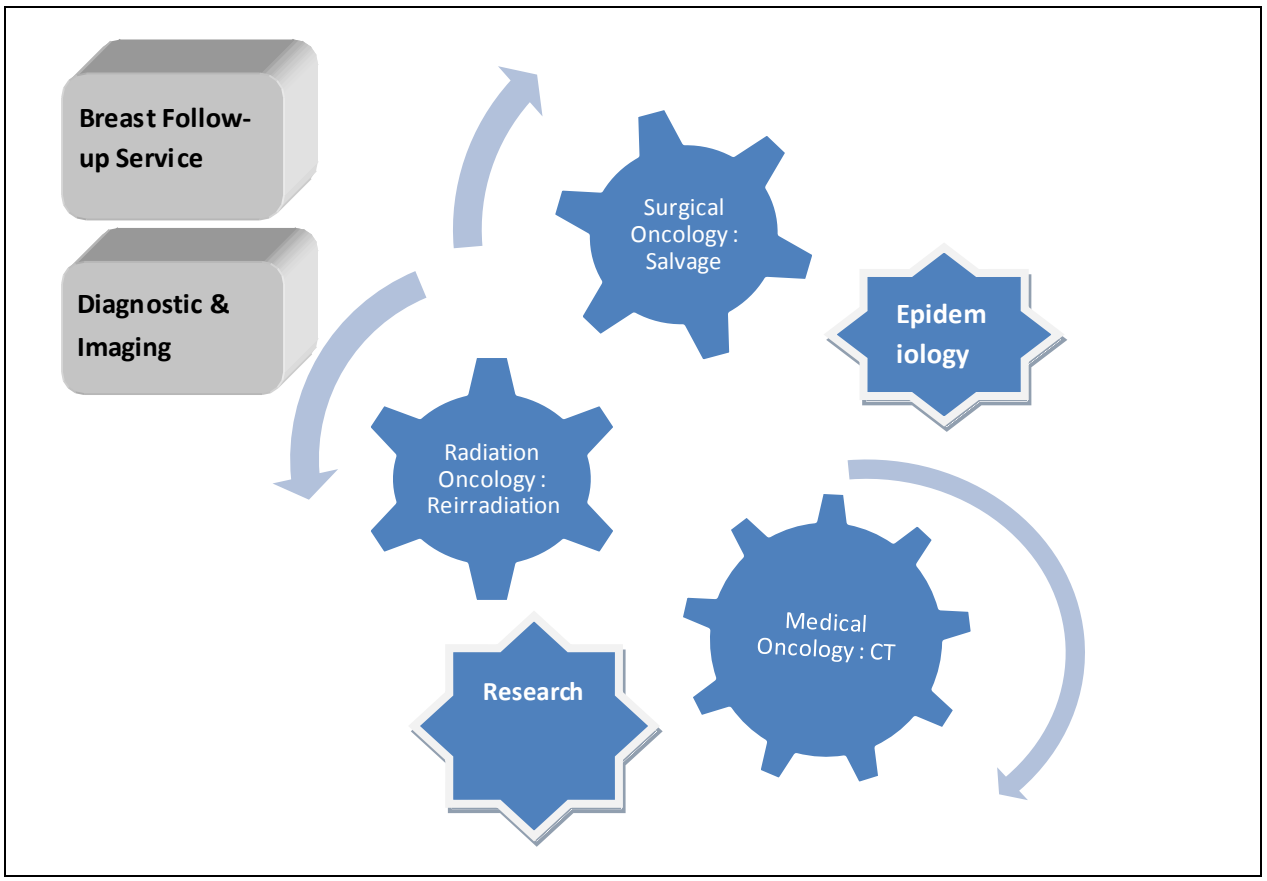




Followup Wing : Service wise Protocol based Followup wing shall be created , a computerized followup patient care & management scheme shall be adopted .

Note: The above is feasible only if adequate relevant manpower , infrastructure , machinery , Computerization and e-hospital facility is provided

Example of a followup Service : It shall be National Protocol based followup & recurrent disease management



Aims and objectives to be achieved in the next 10 years:

1. Strengthen multi-disciplinary, disease oriented, care teams and patient services
2. Increase access to underserved and/or minority populations
3. Promote interactions among basic science, translational and clinical researchers through
4. Continue development of a common informatics research platform, to include basic,
5. Continue development of common tissue repository
6. Develop a culture of mentorship
7. Expand Medical Oncology and Radiation Oncology training programs
8. Develop Surgical Oncology training program into organ based systems.
9. Broaden clinical and translational scope of Cancer Biology and Cancer Prevention training programs
10. With respect to Cancer patients (as the institutes purpose is to serve the cancer patient and to the poor population) – improve facilities for Outpatient clinics, Laboratory, inpatients and comforts for the suffering of the patient.
11. Focus on Cancer Prevention for the Regional Population and the Nation
12. Time to time Up gradation of the Infrastructure to Provide state of the art treatment
13. Computerization and Creation of a paperless Case file and Laboratory report and Hospital management system (Hard ware and soft ware)
14. Improve Management & welfare of the Doctors, Nurses and all other staff
15. Recruitment of necessary manpower especially doctors as the patient load increases
16. Improve Academic Teaching and Training programme
17. Improvement in facilities for Cancer research(Basic science, clinical etc) at KMIO and facilitate national and international collaborations
18. Integrated palliative care. Pain relief and rehabilitation services into the main stream.
19. Setting up Hospice Care with necessary, staff and infrastructure at KMIO for terminally ill and dying cancer patients.

KMIOs Scientific Program Priorities

Clinical Research

- Cancer Imaging
- Advanced Therapeutics and Economics

Population Research

- Primary Prevention and secondary prevention
- Education & Cancer Prevention

Basic Research

- Program: Cancer Genetics, Cell Death Regulation, Cancer Cell Signalling
- Breast, Brain, Head &Neck, Gyn/GI/ GU Malignancies, Hematopoietic Disorders Breast cancer research program in development
- Carciniogenisis
- Studies of gene transformation events in normal epithelium, metastasis and hormone responsiveness
- Cancer Genomics and Bioinformatics
- Aging and Cancer
- Pathogenesis and Treatment of Malignancies
- Developmental Therapeutics
- Establish an advanced Integrated Cancer Training Centre and Program for Under graduate and Postgraduate Courses, to bridge the huge gap and shortage of specially trained manpower for oncology
- Advocates for cancer research across institutions
- Supports outstanding programs in cancer research
- Supports grants, shared resource development, training programs, and recruitment
- Catalyzes multidisciplinary and trans-disciplinary cancer research intra and inter-institutions, emphasizing innovative discovery that impacts patients with cancer
- Develops clinical applications for recent discoveries
- Develops prevention and control initiatives to reduce cancer morbidity
- Cancer nanotechnology and imaging

- Molecularly informed cancer therapeutics trials - Biomarkers of cancer diagnosis, treatment and prognosis in clinical trials with novel designs and endpoints

  It is designed to catalyzes peer- Reviewed cancer research that begins with basic discoveries into mechanisms of Cancer initiation and progression and population risks; focuses these efforts on human cancers; identifies targets and biomarkers for prevention, detection, prognosis and treatment; develops novel therapeutics for these targets, tests new leads in clinical trials; and seeks to change the practice of medicine to reduce the impact of cancer on our patients and the population at large.

- To inculcate & integrate medical research into the routine methodology in academic programme, rather than as a project mode.

Requirement of Facilities for Upgradation of KMIO into an Advanced State of the Art Cancer Care and Research Facility:

Infrastructure required to be developed for better patient care

Additional Infrastructure Development:

Creation of Unique Exclusive sophisticated Outpatient Complex:

New patient Wing: Shall consist of a Multi-storied Complex with all Diagnostic and Research services including multi-storeyed car parking.

- Our motto is that any new cancer patient registering first time at KMIO will be provided with a bed or relaxing couch to relax as soon as they step into the cancer hospital.
- The health care professional registration, nursing, doctor's clinical examination, investigations (Blood tests, radiology, biopsy etc) will be performed bedside without the patients moving from one place to another in the hospital.
- An exclusive diagnostic and research wing will function simultaneously in this wing.
- Specialists doctors (Multidisciplinary team) will attend to the cancer patients bedside
- Counselling by councillors at bedside
- All the Case records are available online to the Doctors and nursing staff
- Patients requiring hospitalization will be admitted in the OPD wards and mobile & healthy patents requiring care from home or Dormitory will attend on scheduled appointments thereafter
- As soon as a final Diagnosis is made by the Specialists Doctor, the Patient is transferred to the Treatment Wing
- Research wing in this zone shall focus on Basic Science of oncology, Molecular biology of cancer, Advanced pathology, Advanced Imaging etc.
- A dedicated automated Tissue, blood and other cancer relevant material shall be catalogued and stored for future research.

Treatment Plan Wing: This Super specialty wing shall consist of a Multi-storeyed Building with multilevel car parking. Each Floor shall be dedicated of One type of Common Malignancy (Eg

Breast cancer floor, Oral cancer floor, Gynaecological cancer floor, Head and neck cancer floor, Thoracic cancer floor, Abdomen Cancer floor, GenitoUrinary cancer floor, Brain Tumor floor, Bone and soft tissue cancer floor etc). Each Floor Shall consist of an exclusive relevant Laboratory, Radiology, Radiation Oncology, Surgical Oncology & Medical Oncology and Research Services. Every Floor will have its own full fledged Operation theatres, Linear Accelerators, Chemotherapy wards, Intensive care units, Wards etc.

- Hear the multidisciplinary care team of doctors and paramedical staff super specializing intro specific malignancy shall receive the newly diagnosed patients and plan a State of the art Protocol of treatments
- The patients will undergo Outpatient treatment or Hospitalization based on set protocols.
- On Treatment wing: Here a Team of specially dedicated Doctors and paramedical staff shall monitor the patients on treatment at various phases as per set protocols. The team of specialist shall investigate and manage the complications of cancer treatment and introduce advanced and sophisticated methodologies to reduce the side effects of Onco-therapy.
- A Dedicated Research wing with all the necessary Laboratory and other facilities shall function simultaneously in each floor. Here the medical and basic science research shall focus on advanced treatments options with a main focus on increasing cure rates of Cancer through treatment and other relevant sections.
- At the End of active treatment the patient shall be transferred to the Next Team of Doctors for Followup and further management

Followup Wing : Shall Consist of a Multi-storeyed Building with Multilevel car parking. Each floor shall be dedicated for a single type of common cancer.

- Each floor shall be equipped with relevant Laboratory and diagnostic services. Here the team shall consist of Teams of specialist Doctors and paramedical staff.
- An Oncology centre needs to strictly follow-up and provide health care and rehabilitation to cancer patients after treatment for self evaluation.
- This zone shall focus on follow-up of treated cancer patient at regular interval and facilitate counselling and rehabilitation.
- If during the Course of follow-up patient is found to have a recurrence requiring retreatment , the patient shall be transferred back to Treatment wing.
- A research wing shall be associated with this zone, to address Research relevant to Molecular biology of cancer treatment failures, research in imaging of cancer treatment

failures and clinical trials related to phase I and II new research molecules against cancer etc.

- **Palliative and Hospice Care Centre**: This centre shall be located in the picturesque and pleasant zone. This infrastructure shall consist of Dormitory type dwelling with all possible comforts in terms of Medical, paramedical, Legal services. Here patients who are suffering from uncontrolled cancer and terminally ill shall receive care to improve their quality of life. The facility shall also consist of exclusive operation theatre, Chemotherapy ward and Radiation therapy services to address palliative treatment by relevant dedicated specialists. (approximately 10 acres of land is required)

- **Community Care Centre**: This infrastructure shall consist of a Multi story building with Car parking. Each floor shall be dedicated for Community health education, media and cancer prevention, Cancer Screening and early detection, Training Centre for Community education and cancer prevention. Centre for implementation of outreach community programmes and relief extension to newly detected cancer patients.

- **Cancer Education Centre**: this centre shall consist of Multi storey building catering to Education of Doctors as Specialists, Super specialist, Para Medical Staff relevant to Cancer care and research. The centre shall have dedicated lecture halls , Auditoriums, Laboratories, Libraries, Museum and Hostel facilities.

- **Centre for Advanced Cancer Research**: This Multi storey Facility with Car parking. Each Floor shall be dedicated of One type of Common Malignancy (Eg Breast cancer floor, Oral cancer floor, Gynaecological cancer floor, Head and neck cancer floor, Thoracic cancer floor, Abdomen Cancer floor, Genitourinary cancer floor, Brain Tumor floor, Bone and soft tissue cancer floor etc). Each Floor Shall consist of a exclusive relevant Advanced state of the art Laboratory. Every Floor will have its own full-fledged storage and archiving centre etc.

Advanced Equipments required	Number of Units required
1. Installation of advanced high energy Linear Accelerator with Stereotactic radio-surgery, IMRT, IGRT, Rotational Modulated arch, Filter free beam, with advanced Computer planning system with and additional Bunker construction	4
2. High Dose rate brachytherapy facility with advanced Computer planning system with and additional Bunker construction	2
3. Permanent Brachytherapy implant facility with special advanced imaging devices and Computerized Planning software	1
4. Advanced Deep Hyperthermia with Computerised planning system	1
5. Wide bore Radiation therapy Virtual Simulation CT Scanner	2
6. e-Hospital System with Advanced Data storage and Security system: To Make KMIO a paperless environment. For Hospital administration, Patient management, appointments, research, Patient registry for longitudinal monitoring etc.	1
Strengthening infrastructure - cancer cohort, tumor bank, cancer information translational research: from bench to bedside activating clinical trial: multi-institutional clinical trials. 7.. Advanced computerized Bio-repository system and review process : Enhanced collection, clinical annotation, and availability to promote human cancer based research, Cancer Genomics & informatics. establish a core facility for cancer bioinformatics within the expanded Biostatistics and Bioinformatics Shared Resource that leverages existing resources and provides support for expanded services to promote analysis of genomic, proteomic, and high output data	1

8. Construction of Research Wing: To develop both clinically applicable and research capabilities Infrastructure useful for investigators across disease types, leading to clinical decision making algorithms. Clinical trials / Medical research infrastructure enhancements to reduce time to review and activation, and to increase coordination between sites & departments during protocol development, review, budget , negotiations, audits and reporting. Stastical analysis and Publication of research reports and outcome.	1
9. Population research efforts in prevention, detection , Cancer Biology, BME/Imaging and Cancer Pharmacology	1
10. Internationally accredited and certified labs for cancer diagnostics, and development of new tests for clinical use.	1
11. Advanced Robotics Surgery Facility	2
12. **Health Promotion:** Up gradation of Cancer Prevention and education Unit and community engagement programs. Advanced and automated Mobile Health check unit	6
13. Establishment of College of Oncology: Training programs for Undergraduates and Post graduate programmes , pre- and post-docs are an important asset for a major research institution. We will increase efforts to recruit the best and brightest researchers.	1
14. Upgradation of Blood Bank with advanced computerized data, component storage and dispensing system.	1
15. PET CT Scanner for Oncology Imaging	1
16. Advanced Bone marrow transplant unit	1
17. Hospice-palliative Care Program: support palliative care units in hospital, provide home-based cancer patient management program through public health centre, provide education program to the health care providers publish cancer pain control guideline. Terminal Cancer Patient Management Plan	1

KMIO desires to promote links between basic science discovery and application towards human cancers through collaborative efforts between basic science and population studies and disease-oriented investigators as well as through early application in clinical investigation.

Apply genomics and target discovery of disease and prognostic and predictive markers towards preventive and therapeutic clinical trials to create a platform for molecularly informed clinical decision making. Analysis of informative gene sets and collating such information into prognostic and treatment directing decisions. This will encompass a paradigm shift that will alter clinical trials study design, require marker validation, and adjust treatment decisions from those based on diagnosis to those based on molecular markers.

promoting educational and scientific forums that foster trans-disciplinary efforts that bring together two or more disciplines. Promote trans-disciplinary research across the spectrum of cancer biology and genomics with therapeutics, imaging, computational and informatics biology and population sciences. Development of a strong cancer drug development, computational biology, bioinformatics, cancer imaging, nanotechnology and other bioengineering capabilities. By linking these efforts with cancer biologists it would be possible to break barriers, advance novel paradigms and develop strong prevention and early detection and curative treatment approaches. A focus will be clinical and bioinformatics database and IT systems that enable large database storage and sharing.

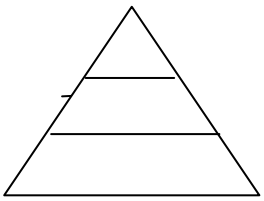
Our institutions propose to establish a number of emerging technologies that can be used for Cancer treatment, early detection as well as for cancer prevention through interventional efforts and screening.

To introduce new Administrative reforms : in the interest of patient care and improving efficiency

At our Institute we see approximately 18000 new patients every year and approximately 2.4 lakhs patients are seen under follow-up.

This upgradation formula which was incorporated previously has resulted in the elevation of members of the teaching faculty ease out a lot of heart burn among the staff of the Institute. On the otherhand the pyramidal system of unit as envisaged by MCI (Medical Council of India) will not be maintained by this. Actually stating, the pyramidal system which has broad base now turned out to be a "TOP" with Narrow Bottom.

Professor
Assoc Prof
Asst Prof



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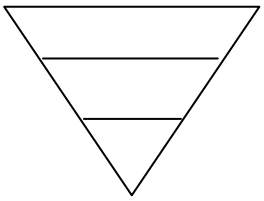


This upgradation has resulted in individuals getting benefit and thereby helping the Institute to retain them. On the contrary, the patient care which is the most important one in any hospital requires to be looked into deeply. If we continue to increase the number of units as it is normally done in the Medical College set-up, the patient who is seen on Monday will be seen only on the next Monday. This gap of more than 7 days will be detrimental for the cancer patients and also for initiation of the treatment, which will necessarily be delayed. To avoid this, the Tata Memorial Hospital Model will be a good model to follow, which is also followed in Regional Cancer Centre, Trivandrum. In this model teaching staff individually will get elevated as per MCI regulations thereby the staff members will get the designation and pay scale but the patient service is not oriented to the unit system. Instead it is by multi-disciplinary treatment group, wherein several cancer groups are designed based on organ systems such as breast cancer service, thoracic oncology services, gastro-intestinal oncology service etc., In each such multi-disciplinary treatment a group of minimum one Surgical Oncologist, one Medical Oncologist, one Radiation Oncologist, one Onco-Pathologist and one Imageologist will be assigned and each multi disciplinary treatment group will have a Chief of the system by rotation among the designated staff members.

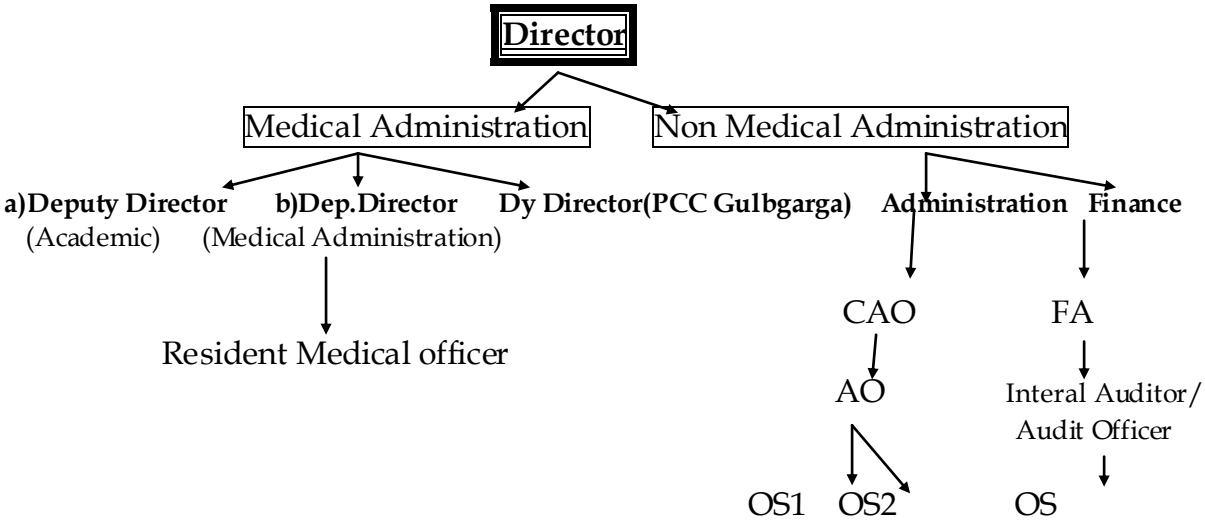
This model will enhance the treatment related activities for the patients which will be seen by all Specialists at a time as against the present system where the patient is i.e., seen by one Specialist and then sent for reference to other specialities, causing unnecessary delay in taking decisions and also creating a lot of ego clashes among the treating staff members.

With regard to the Specialist, designated/assigned in that group will be the chief for that speciality on his/her own merit. This model is a time tested one practised at Tata Memorial Hospital and also in Regional Cancer Centre, Trivandrum and both these centres are model cancer Institutes in our country and are designated Regional Cancer Centres. Hence the cancer centre Tata Memorial Hospital model is more suitable for KMIO than a Medical College Model.

In addition to the above, one needs to consider the views of Finance Department which had suggested that there should not be any increase in the total number of faculty members and there can only be a change in the matrix of the whole number. There will not be need in this said model to increase the number of staff members but we will be in reality increasing the number of multi disciplinary treatment groups thereby helping the patients to get the best and also doctors will feel that their independence is not hindered. Needless to say that this model of multi disciplinary Treatment Group will help to take combined decisions at the earliest. Hence, the delay in starting the treatment can be totally avoided. In addition to all the benefits noted and if the doctor/specialist wants to have a change that can also be done in this model by introducing a rotation system if need be.

Presently, the Director and the Medical Superintendent posts are tenure posts in the Institute. It is better the HOD's posts also be made the same way. In fact, in the Governing Council Meeting held on 12.5.2012 a resolution was passed by the Governing Council to rotate them once in 3 years as it is the routine followed in Nimhans. Secondly, we can propose to have a few more Medical Administrators posts such as 'Deputy Director'(Academic), Deputy Director (Medical Administration), Deputy Director (PCC Gulbarga) etc., wherein more and more faculty members will get involved in the administration and also may be used as a platform to get to the next level of administration i.e., to Director post.

To overhaul and upgrade Medical Administrative Component of the Institute and also for more participation from the medical faculty, the following proposal is made
The proposed hierarchial tree for administration will be :



As per the Directions of the Principal Secretary, a committee of HOD's have been formed and every month the said committee meets. In the same note an Administrative Officers Committee also has been formed and meets once in 15 days to take collective decisions on important matters and also for the speedy disposal of the office files.

All the Administrative reforms proposed do not require any additional budget and are only policy decisions and hence does not come under the perview of Finance Deparment. Governing Council is the only body to decide about the same.

In conclusion, I would suggest the proposal where it is patient friendly i.e., multi disciplinary treatment group rather than unit system of individual specialities in a comprehensive cancer centre such as our Institute. And the proposal of administration hierarchy may also be considered as the need of the hour.

ACADEMICS

College of Oncology: Academic – Training of specialized manpower

- **Super-speciality Post graduate Courses (Recognized by MCI)**

Name of the Course	Existing No. of Seats	Course Duration	Proposed increase in the next 10 yrs
M.Ch. Surgical Oncology	8	3 years	10
M.Ch. Gynaec Oncology	1	3 years	4
D.M. Medical Oncology	6	3 years	10

- **Postgraduate courses (Recognized by MCI)**

Name of the Course	No. of Seats	Course Duration	Proposed increase in the next 10 yrs
M.D. - Radiotherapy	4	3 years	10
D.M.R.T. - Radiotherapy	3	2 years	10

- **D.N.B courses (Accredited by National Board of Examinations, New Delhi), Proposed introduce MD Programmes under RGUHS/MCI**

Name of the Course	No. of Seats	Course Duration	Proposed increase in the next 10 yrs
Radiology	4	3 years	8
Pathology	4	3 years	8

Anesthesiology	4	3 years	8

Duration of the above courses :

3 years for Post MBBS (Primary)

2 years for Post Diploma (MBBS+Diploma) (Secondary)

- **Fellowship Programmes (Affiliated to Rajiv Gandhi University of Health Sciences)**

Name of the Course	**No. of Seats**	**Course Duration**	**Proposed increase in the next 10 yrs**
Gynaec Oncology	2	2 years	4
Head & Neck Oncology	2	18 months	4
Oral Oncology	2	2 years	4
Oncopathology	2	One year	4
Paediatric Oncology	2	2 years	4
Palliative Care	2	One year	4
Radiation oncology	-	One year	4

- **Nursing: (Recognized by INC & Affiliated to Rajiv Gandhi University of Health Sciences)**

Course	No. of Seats	Duration of the course	**Proposed increase in the next 10 yrs**
M.Sc (Nursing Medical surgical)	5 seats	2 years	10
Post Basic Diploma in Oncology Nursing	15 seats	11 months	20

Indian Nursing Council has given permission for 8 seats compared to the present 5 seats. Proposal for increase in seats from 5 to 8 for M.Sc. Nursing course to be submitted to RGUHS.

- **M.Sc in Radiation Physics (Affiliated to Rajiv Gandhi University of Health Sciences and Recognised by AERB)**

  Currently 5 Seats and Course duration is 2 years. Proposed increase to 10 seats in the next 10 years

- **Ph.D. Programme ((Affiliated to Rajiv Gandhi University of Health Sciences)**

  The department of Pathology, Microbiology, Biochemistry and Radiation Physics are recognized for Ph.D. Programmes under RGUHS. Proposed to include PhD Radiation Oncology.

- **B.Sc. (Allied Sciences) (Affiliated to Rajiv Gandhi University of Health Sciences)**

Name of the Course	**No. of Seats**	**Course Duration**	**Proposed Increase in seats**
Medical Lab. Technology	6	3 years	12
Imaging Technology	6	3 years	12
Radiotherapy Technology	6	3 years	12
Operation theater Technology	5	3 years	10
Anesthesia Technology	5	3 years	10

With the existing facilities, the Number of seats can be increased to 20 from the existing number of seats and hence a proposal for increase in seats will be submitted to RGUHS

Training/Observership/Honorary Residency for Specialised Training:

In addition, the Government of India has recognized this Institute as one of the Institute of National Excellence and has been deputing medical persons for WHO fellowships for higher education and training in cancer treatment and research. It has among its primary objectives, the promotion of a high standard patient care and aims to provide top notch integrated training programme in the oncological sciences. The institute has initiated a programme of professional education and expertise Technology transfer through short term education/training programmes for undergraduates, postgraduates students from medical colleges/institutions/nursing colleges from Karnataka as well as from other states of the country. Super-speciality Post graduate students from other Regional Cancer Centres will be posted to this Institute for training. In addition, the students perusing post graduate studies in various disciplines such as Nursing, Social work are posted for a short term orientation classes as observers to the respective departments. The doctors and Health workers of Government of Karnataka are also trained by the Institute with the main objective of imparting knowledge in prevention, diagnosis and treatment of cancer in early stage in their respective areas.

COURSES IN THE PIPELINE

M.Ch. (Head & Neck Oncology):

Application to start this course was made. Consent of Affiliation from RGUHS obtained. Essentiality certificate from Government of Karnataka Obtained. MCI rejected the proposal. Application Resubmitted for consideration to govt. of India/MCI for the Academic year 2015-16.

D.M. (Paediatric Oncology):

Application to start this course was made. Consent of Affiliation from RGUHS obtained. Essentiality certificate from Government of Karnataka Obtained. Application Submitted for consideration to Govt. of India/MCI for the Academic year 2015-16.

M.D. (Palliative Care):

The proposal to start this course along with the proposal to create the required Teaching staff was placed before Governing Council of KMIO and Approval obtained. Correspondence with the State Government is going on regarding permission for recruitment of Teaching Staff.

M.Sc. (Imaging Technology):

A proposal to start M.Sc (Imaging Technology) has been put up to RGUHS for consideration

DM (Paediatric Radiation Oncology) A proposal to start is initated

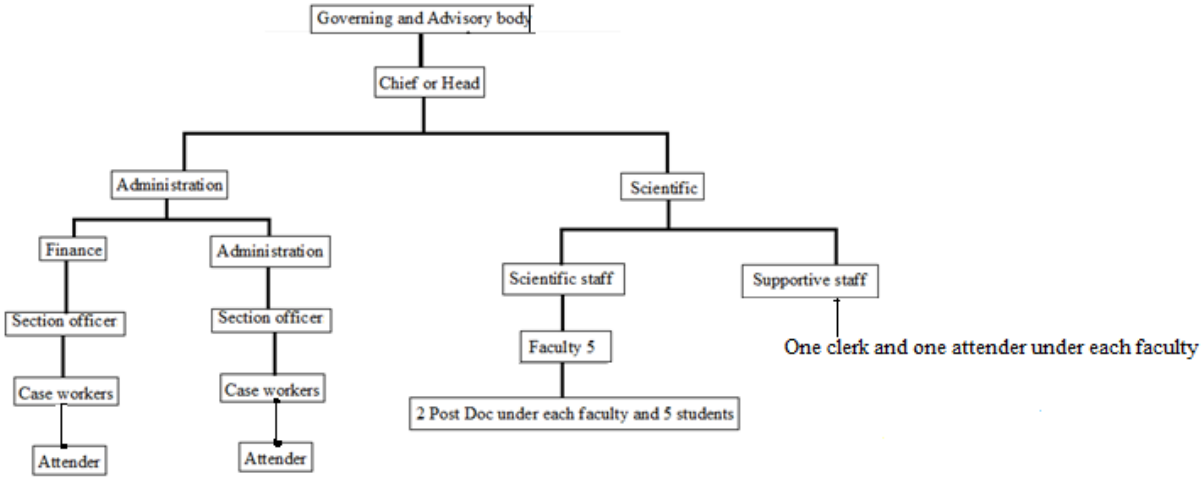
Cancer Research Wing

Basic, Translational and Clinical Research Center At KMIO

The first phase of the project envisages creating the basic infrastructure in terms of building, equipment and resources for facilitating research in the field of Oncology: basic, translational and clinical, with a provision for expansion in experimental tumor biology.

Over the last century, there have been enormous strides in the understanding of cancer biology. To translate this knowledge into patient benefit, bench to bedside, there is a need to set up a separate facility for research so that a concentrated effort can be directed towards various issues of cancer with a special focus on common cancers pertaining to the State of Karnataka. The goal is to set up a state of the art Research Centre for Basic, Translational and Clinical Research in the field of Oncology with a vision that, in the short and long terms, research on cancer biology will influence treatment decisions for cancer patients. The centre will also ensure that the resources would also be accessible to other cancer researchers in the State of Karnataka, outside of KMIO, in an optimal fashion.

The proposed Research wing shall be a hub for all research activities. The research facility shall be accessible to all the staff interested in research. Proper procedures shall be followed, The research wing shall be the linked to All the focus zones like New registration, Treatment zone, followup zone. All clinical , basic science and other research activities shall be co-ordinated through the Research wing (it shall be integrated linked with the institute Protocols). All kind of research activities (government funded, collaborative, private funded research shall be encouraged), Internationally acceptable scientific research norms & guidelines & standards shall be maintained. laboratory will also serve as an inspiration for young clinicians inclined towards research. Rotations/hospital immersions of basic science PhD students will expose them to clinical problems. Many clinicians today realize that knowledge of molecular biology and molecular methods at a practical level is mandatory, since targeted therapy is already in use and molecular medicine is poised to be the future of oncology.



Thrust Areas of the project, five broad areas could be considered as Research Areas:

- Tumor Biology
- Genomics
- Proteomics
- Cancer Immunology
- Cancer Stem cells

Physical facilities

1. A five storied building comprising of the 1st two floors of three units each (1 unit for Administration and 5 units for laboratories of 5 faculties)
2. one floor will have a meeting hall, a seminar hall and a central instrumentation room
3. A provision will be made for extending the facility to house an animal house and a tissue repository

S No	Research wing Items required	Qty
1	Flow Cytometer	1
2	Real TimePCR and	2
3	thermal Cyclers	5
3	Class IIB Biosafety Hoods	6
4	Automated Karyotyping Machine with microscope	1
5	Automated Tissue Microarrayer	1
6	High end Immunostainer	1
7	Nanodropspectro-photo meter	1
8	Carbondioxide Incubator	1
9	Hybridization Oven	2
10	Gel Documentation System	1
11	Rotary Microtome	1
12	Cryostat	1
13	AMC of equipment after 2nd year	
14	Other laboratory equipment like, -20 and -80 freezers, pipeteman, refirgrator etc..	1set for each zone
15	3-Color Confocal microscope	1
16	Generator for power back-up	1
17	Construction of Building	

No.	Equipment
1	Automated Karyotyping machine with microscope
2	Autostainer
3	Microwave tissue processor
4	Tissue embedding centre
5	Microtome
6	Grossing station cabinet

7	Tissue processor
8	Upgradation of Flowcytometer
9	Microscope binocular/trinocular with one image capture
10	Microbalances
11	Laminar Flow
12	Carbon dioxide incubator
13	Power Back System (Generator/UPS System)
14	Computerization & Networking of the Lab.
15	Slide Filing Cabinet
1	Autostainer – 1 No.
2	Teaching Microsope (2 & 3 Head) – 2 Nos.
3	Computer – 2 Nos.
4	LCD Projector 1 No.
5	Slide Projector 1 No.
6	Cytopathology library with internet access
7	Establishing Molecular Lab. (common use)
1.	Alfa – Hematology Analysier – 3 pars differential with 18 parameters and capillary moadel
2.	16 or 20 tube holding centrifuge – Make – Eppenderf or Remi
3.	Sysmex – 3 part differential Analyser with autoloader and bar-coding.
4.	Two Bionocular Microsope (Labmed or Leica)
5.	Electronic Balance

Screening & Prevention

At present, we are having a Department of Cancer Detection and Screening Unit which does both hospital based as well as field based cancer detection programmes. We have been conducting cancer detection camps for the last 25 years and the detection rate is 1.5% of proved cancers and 1.5% of suspected cancers. During the camps, apart from screening, cancer health education is also performed in the form of short documentary films, didactic lectures, interactive sessions, posters, etc. to create cancer awareness.

The future would be multi-pronged in the form of:

1. Direct approach to the individuals by continuing with what has been going on and by increasing the number of staff and mobile cancer detection units.
2. To set up a cancer detection unit at every medical college as a part of outreach programme in the State of Karnataka by involving the social and preventive medicine departments of every medical college & designate particular geographic area for each medical college so that the whole State of Karnataka can be covered.
3. To co-ordinate with National Cancer Control Programme and with District Cancer Control Programme units so that more effective measures can be taken in this regard and to avoid unnecessary duplication of work.
4. In fact, it has been already recommended to the Government of India, Government of Karnataka and the World Health Organization for the development of Oncology Wings in all the Medical Colleges all over the country way back in November 1993 by conducting a Workshop sponsored by WHO and Ministry of Health, Government of India.
5. The cancer detection unit presently available at KMIO should be expanded to have a full blown department consisting of both medical and paramedical personnel so that a proper co-ordination can be effected/achieved.
6. Mobile cancer units should increase from one unit at present to three units at the end of 5 years and ultimately to have five units at least at the end of 10 years.

Abstract

Imaging

At present the following facilities are available in the Departments of Imaging & Nuclear Medicine.

Conventional Radiology

b. Sonography

c. CT Scan

d. Nuclear Medicine – Bone Scan, Thyroid Scan, Brain Scan, Liver Scan, Muga Scan etc.

MRI Scan.

Future –

1. PET CT Scan
   2. PET MRI Scan

TREATMENT FACILITIES:

Surgery:

1. Surgical Oncology
2. Head & Neck Oncology
3. Oral Oncology
4. Gynaecologic Onocology

a. Surgical Oncology:

The Department has 3 units. It is intended to deliver the surgical treatment services in the form of Breast Services, Thoracic Services, GI Services, Genitourinary services, Thyroid services, Bone and soft tissue services.

OperationTheatres	**Past**	**Present**	**Future Next 5 Yrs.**	**Future Next 10 Yrs.**
Major O.T. Rooms	2 – 5	7	10	12
Minor O.T.	2	5	7	10
Endoscopy room	-	1	2 1-diagnostic 1-therapeutic	2
Laser Unit	-	1	2	2
Operating Microscope	-	1	2	2
Laparoscopy	-	Single chip-1 3 Chip - Nil	2	3

Intensive Care Unit:

Presently, the ICU has 10 beds with 2 mechanical ventilators functioning, which should be increased to 20 bedded surgical ICU and 10 bedded intermediate post operative care ward. The ventilator number should correspondingly go higher to a minimum of 5 – 6 by the end of the decade.

Gynaecologic Oncology:

It is a single unit department with 20 beds which need to be increased to 40 bedded 2 unit department. A separate laparascopic gynaecologic oncology section should be developed.

Head & Neck Oncology:

It has got a single unit which has to be developed to a 2 unit department with 40 beds. A separate microsurgery unit which will cater with microlaryngeal work by microvascular flap work. A skull base unit has to be developed in conjuncture with neurosurgeon of NIMHANS.

Oral Oncology:

It has got a single unit department which needs to be increased to 2 units with full staff working with fully equipped reconstruction unit consisting of a microvascular reconstructive surgery.

This department needs a separate laser equipment Implantationology in the post reconstructive mandible should be developed as a part of the rehabilitation process.

Future:

The future of whole of the Department of Surgery is in the advancement of technology and in organ and function preservation. In order to achieve the same robotic surgery and keyhole surgery need to be established.

A separate department of experimental surgery with animal lab. Facilities have to be developed.

Medical Oncology:

It has two divisions at present – Adult Medical Oncology and Paediatric Oncology. Adult Medical Oncology dept. has 2 units which are treating all solid organ malignancies, as well as lymphohemato malignancies. Provisions of stem cell transplant and bone marrow transplantation, both allogenic and autologous and are being currently made.

Future:

The future of Medical Oncology is in developmental molecular therapy and gene therapy For this one has to be establish a gene therapy department comprising of basic scientists and medical oncologists.

Radiation Oncology:

Treatment offered at present in Radiotherapy facility – 300 /350 patients per day and this is expected to increase to 600 per day.

Equipment	**Present**	**Next 5 Yrs.**	**Next 10 Yrs.**
Linear Accelerator	1 Unit	3 Units	6 Units

IMRT Facility	1 Unit	2 Units	4 Units
Simulator	2 Units	4 Units	6 Units
HDR Facility	1 Unit	2 Units	2 Units
IGRT	Nil	1 Units	2 Units
Spiral CT Scan for RT Planning	1 Unit	2 Units	3 Units

Pain & Palliative Care:

The department has a 20 bedded ward and a domiciliary service for oral morphine solution for terminally ill patients which is the first of its kind in India.

To cater to the increasing load, the department has to expand to a 40 bedded unit for pain and palliative care and another 30 bedded unit for terminally ill patients (Hospice).

The department at present has1 Professor and 1 Asst. Surgeon which needs to be increased to 2 Professors, 2 Associate Professors handling terminally ill patients and palliative care separately.

Rehabilitation Services:

Currently, the rehabilitation unit is taking care of post mastectomy rehabilitation, post laryngectomy rehabilitation, speech therapy, physiotherapy, occupational therapy, stoma therapy and psychological counseling.

This unit should be developed into a separate department which not only supports patients physically and psychologically but help them financially. Further it is proposed to provide post amputation prosthesis for all who under go amputations.

Other supportive departments to be developed:

This Institute being a comprehensive cancer center only patients afflicted with cancer are registered in this Institute. It is desired to have the support of the nephrology, cardiology, neurology etc.

Hence, a panel consisting of nephrologists, urologist, neurologist, cardiologist etc. has to be developed to support and augment the standard of care in the intermediate/ postoperative period.

Free Medication and Free Treatment:

The ultimate goal of a tertiary center treating cancer afflicted patients should be not to turn away the needy patients for want of financial support. On the contrary, the cost of cancer treatment is alarmingly raising. To overcome this imbalance, one can have the following measures:

By directly procuring the drugs from the companies thereby reducing the cost to the tune of 20% to 30% on M.R.P. (which we are already able to do through KCDF).By bringing regular donations to specified organ areas like childhood cancer alone, breast cancer alone etc.

By developing a corpus from which regular interest can be obtained for treating the needy patients.

Summary :

Kidwai Memorial Institute of Oncology (KMIO) desires to promote links between basic science research, new drug discovery and its clinical application towards human cancers through collaborative efforts between basic & clinical science. KMIO is keen on encouraging research on applied genomics and also target research on prognostic and predictive markers towards preventive and therapeutic aspect of cancer.

KMIO has a suitable environment for promoting educational and scientific forums that foster trans-disciplinary efforts that bring together more disciplines. Promote trans-disciplinary research across the spectrum of cancer biology and genomics with therapeutics, imaging, computational and informatics biology and population sciences. Development of a strong cancer drug development, computational biology, bioinformatics, cancer imaging, nanotechnology and other bioengineering capabilities. By linking these efforts with cancer biologists it would be possible to break barriers, advance novel paradigms and develop strong prevention and early detection and curative treatment approaches. Our focus will be clinical and bioinformatics database and IT systems that enable large database storage and sharing.

Our institution proposes to establish a number of emerging technologies that can be used for Cancer treatment, early detection as well as for cancer prevention through interventional efforts and screening. Overall our prime focus shall remain to be patient care. Our aspiration to make KMIO a paperless / computerized environment, shall help in improving efficiency and deliver quality cancer care .