

# ASSOCIATION OF RADIATION ONCOLOGISTS OF INDIA

## Quarterly Newsletter

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JAWAHARLAL NEHRU CANCER HOSPITAL & RESEARCH CENTRE, BHOPAL

## Translational cancer research in India: Challenges and Promises

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India is ushering in to the next decade as a country with “cancer epidemic” with growing number of cancer cases. While the expected number of incident cancer cases in 2020 was approximately 14 lakhs, this is projected to double in next two decades and majority of the cancers (50-70%) are still among the preventable cancers. In the recent result from the PURE prospective cohort on variation in common disease, hospital admission and death in middle-aged countries it has been observed that death from cancer has surpassed the death from cardiovascular diseases in high income countries and some upper middle income countries [1]. Mortality from cancer will probably become the leading cause of death in the next 2-3 decades in India as well and we are sitting on a ticking “time bomb” to find a solution to this.

The problem of cancer care is multifaceted with challenges arising not only out of the cancer burden but also from several other issues. While the population of India is rapidly expanding, the access to health insurance and contribution of GDP towards cancer care has not grown proportionately.

**Translational research:** Translational research earlier considered to be the research taken from “bench to bedside” is essentially now understood to be a two way dynamic process of applying the outcomes obtained in the laboratory to clinical site and again coming back to the laboratory to find issues found in clinical site. This is often perceived as research only possible at highly equipped center with advanced laboratory facilities, but in true essence, a basic translational research could be performed in novice subjects also if the research focuses on key areas with prioritization of resources.

**Rationale and need for research:** Cancer research has helped developed countries in solving their public health problem to a greater extent. For example, preventive cancer research in carcinoma cervix coupled with effective vaccination has allowed the western countries to control the burden of carcinoma cervix to a large extent. In India, majority of patients (60-80%) present in late stages and majority of them are preventable cancers as well (60-70%). We need research solutions for improvement of the outcome and availability of cost-effective solutions. The cancer burden is also different quantitatively and qualitatively in our country with unique challenges.

**Current status of cancer research in India:** Outputs of cancer research in Indian have increased from about 300 research publications per year in 1990 to almost 1500 publications in 2010. The average 5-year citation score for cancer research papers from India has grown by 42% since 1990, but the number is still less than the world mean—14 cites for 2004–05 publications. New Delhi and Chandigarh have much more cancer research activity than their overall GDP would indicate because major research centers are based there. A big gap in cancer research activity clearly exists between the nine largest states active in cancer research and others.

Studies of cancer genetics and medical oncology (chemotherapy) are the dominant work in the Indian cancer research community and receive more than 30% of total research output. Research for surgical oncology, the main method of control and cure of cancer, makes up 9% of the total, and the proportion dedicated to radiotherapy research is even lower.

Improve palliative care services—promotion of clinical research and demonstration of the need for evidence-based service to palliative care physicians; linkage of existing palliative care services and creation of a joint research programme in which there can be sharing of common protocols, ideas, and resources; development of palliative care departments, with service and research activities, in more medical colleges and involvement of departments in initiatives from the ICMR; involvement of non-governmental organizations.

The most striking difference between the situation in India and most western European countries is that in India, the government has a dominant role and charities and commercial companies have a very minor one. International collaboration can be an important source of additional funding in India, and a potential way to guide what cancer research takes place. India must be able to review the successes of cancer control programmes in other countries and identify programmes to be evaluated. [1]

**Prioritizing cancer research:** Most of the research being conducted in the institutions in India are either replicative of the research being done in the western countries or an extension of the research work done in the past. Certain cancers are more common in India as compared to the western world like oral cavity cancers, carcinoma of cervix, gall bladder cancers, tobacco related cancers etc. A wider variation has also been observed in the various geographical regions of India for example higher incidence of carcinoma stomach, oesophagus and nasopharynx in the north eastern part of the country (Mizoram, Sikkim); Gallbladder cancers (northern part of the country and in the Gangetic belt).

Whether these regional differences in epidemiology are due to a difference in genomics and biology or due to differences in the prevalence of cancer risk factors or both are not yet known and would be an important area of research. Since, these are India-centric cancers, the onus to research in these cancers lies on us. These cancers which are having major burden of impact in our country needs research not only at the level of preventive aspect but also at the level of diagnosis, prognostic biomarkers, multimodality cancer care.

Since, most patients present in advanced stage of disease, prioritizing research protocols to develop cost-effective measures for palliative care, efforts to develop low cost oral metronomic and less toxic treatments would improve access to cancer care in the remotest of place.

Trained manpower is the key requirement: Often, large well-funded research programs fail to deliver in absence of properly trained and skilled manpower. Apart from being trained and skilled, it is also equally important to build up a pool of scientist and researchers who are interested in their domain and it is the duty of policymakers and research heads to allocate research projects to scientists in the respective areas of interest.

The current academic and training program of specialization and super-specialization gives limited exposure to research and hence innovative training programs like MD-PhD (being started at NCI-AIIMS, Jhajjar, Haryana) may in future create better opportunity in manpower training.

Little emphasis is laid down on paramedical and nursing staff training and often they are the ones delivering the end care to research participants, thus affecting the result and outcome of research projects. Hence, the training of manpower has to percolate through all the strata of researchers and staffs involved in the research. Flexible national and international collaboration with transfer of technology from leading institutes are important for human resource training and development of qualified and trained technical manpower in cancer research and capacity building

Collaborative research is the key: One of the problems with cancer research in India is lack of large co-operative clinical trialist groups like the western countries. Several large cooperative groups like RTOG, NRG, COG etc. have consistently strived for focused and committed research over several decades and produced results which has dramatically changed the treatment paradigms of several cancers.

There are several institutes in India with a good potential for basic research and then there are some with great clinical research facilities and the only thing needed is an active and committed collaboration between two or more of them. In this regard, NCI-AIIMS has also taken an initiative and signed memorandum of understanding with DBT, ICMR, NICPR, NCI-USA, La Fondation De l'Academie de Medecine, France for cooperation in cancer research, prevention, control and management. Another key area which needs attention is academia-industry collaboration. While these types of collaboration have yielded great projects and results in western world, in India most of the research funding comes from government sponsored schemes. Research should not be bounded by these limitations and an ethical and regulated collaboration between industry and academic institutions is quintessential for qualitative and focused research.

One exciting development in this regard has been the initiation of Indian Cancer Research Consortium under the Department of Health Research, GOI. This would help to facilitate the conduct of cancer research in India with cross communication between various researchers and organization and help in translating the evidence gathered in to development of appropriate cancer research modality.

Prospective Key research areas: Human resource development through continuous bilateral exchange program, development of bio-repositories, translational molecular genomics and genomic based clinical trials, advanced imaging, nanotechnology based diagnostics, augmentation of cancer prevention and awareness programs and resource-effective population based cancer studies are need of the hour.

Cancer research in India needs to be balanced among several competing public agendas. Public policy makers need to be involved in shared decision and agenda making for a rational, regulated and streamlined cancer research for overall improvement in cancer outcome and public health

Dagenais, Gilles R, Leong PD, Rangarajan S, et al. Variations in common diseases, hospital admissions, and deaths in middle-aged adults in 21 countries from five continents (PURE): a prospective cohort study. *The Lancet*, Volume 395, Issue 10226, 785 - 794

Sullivan R, Badwe RA, Rath GK, et al. Cancer research in India: national priorities, global results. *Lancet Oncol*. 2014 May;15(6):e213-22.

## MCQs IN MEDICAL PHYSICS

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Top three correct entries received before 30 April, 2021 will be acknowledged in the newsletter and awarded. Please email as a pdf document to [dr.gautamsharan@gmail.com](mailto:dr.gautamsharan@gmail.com)

1. Bragg peak is exhibited by
  - a. Neutrons
  - b. Electrons
  - c. Heavy charged particles
  - d. All of the above
  
2. You are treating a patient to a depth of 5 cm with an 80 cm SSD Cobalt machine. Collimators are 35 cm from the source. If the source diameter is 2.1 cm, what is the geometric penumbra width?
  - a. 2.3 cm
  - b. 1.1 cm
  - c. 2.7 cm
  - d. 3.0 cm
  
3. Select an option from (a-d) in which the following components (1-5) are arranged in the decreasing order of their distance from the patient:
  1. Monitor Chamber
  2. Target
  3. Primary Collimator
  4. Jaws and secondary collimator
  5. Flattening filter
  - a. 1,2,3,4,5
  - b. 1,5,2,3,4
  - c. 2,3,5,1,4
  - d. 2,1,5,3,4

4. Which of the following detectors is not correctly matched with its most appropriate use?
- a. Calorimeter: Calibration of secondary chambers
  - b. Radiochromic film: Brachytherapy Dosimetry
  - c. Silicon diodes: Instantaneous patient dose monitoring
  - d. Cutie Pie survey meter: Detection of missing brachytherapy source
5. A uniform dose is delivered to a volume of tissue. If the dose to 1 gm of tissue is 2 Gy, what is the dose to 5 gm of tissue?
- a. 0.4 Gy
  - b. 2 Gy
  - c. 1 Gy
  - d. 10 Gy
6. The threshold energy for a photon to interact by pair production is:
- a. 0.511 MeV
  - b. 1.022 MeV
  - c. 2.044 MeV
  - d. 4.088 MeV
7. The following table describes the measured beam intensity as a function of Aluminum filter thickness:

Filter thickness (mm)	Reading/ Unit time (nC)
0	100
1.0	67.0
2.0	54.9
3.0	48.0
5.0	40.1
10.0	31.0
15.0	26.5

What is the first HVL for this beam?

- a. 1.7 mm Cu
- b. 2.0 mm Al
- c. 2.7 mm Al
- d. 0.5 mm Al

8. The depth of maximum dose in a megavoltage beam:
- Increases with field size
  - Decreases with SSD
  - Increases with dose rate
  - Increases with beam energy
9. Select an arrangement in the increasing order of volume: (CTV- Clinical target volume, GTV- Gross tumor volume, ITV- Internal target volume, PTV- Planning target volume)
- CTV, GTV, ITV, PTV
  - ITV, GTV, CTV, PTV
  - GTV, CTV, PTV, ITV
  - GTV, CTV, ITV, PTV
10. In a wedge pair technique:
- Hot spots generally occur under the thin ends
  - The dose within the target volume is uniform within  $\pm 5\%$
  - Thin ends of the wedges must be placed adjacent
  - Wedge angle of each wedge must be half the hinge angle
11. Which of the following may not be a possible cause for loss of skin sparing in a megavoltage beam?
- Secondary electron contamination of the photon beam
  - MLCs instead of custom blocks
  - Larger field sizes
  - Solid materials in the beam positioned at less than 10 cm from the skin
12. The most suitable dosimeter for measuring surface dose in a phantom is:
- Farmer chamber
  - Plane- parallel chamber
  - Shielded diode
  - TLD capsule
13. If an electron field abuts a parallel photon field at the surface:
- A hot spot is expected in the photon field
  - A hot spot is expected in the electron field
  - A hot spot is expected in both the fields
  - A cold spot is expected in both the fields



14. Which of the following most significantly effects brachytherapy dose distributions?
- Inverse square law
  - Absorption within tissue
  - Scatter within tissue
  - Tissue heterogeneities
15. 3D volume information allows the use of noncoplanar beam geometries. What advantage might this treatment have over traditional axial coplanar beam geometry?
- Reduced treatment time
  - Reduced volume of normal tissue irradiated
  - Less CT scan data required for planning
  - More options to avoid critical structure irradiation
16. The Intensity modulated radiation therapy (IMRT) with photons is a technique having following parameters EXCEPT
- Photon energy is modulated to adjust beam penetration across the field
  - Photon fluence is modulated to obtain the desired dose distribution
  - Photon energy fluence is modulated to obtain the desired dose distribution
  - Dose rate in the patient is modulated to obtain the desired dose distribution
17. In Stereotactic Radiosurgery (SRS):
- All beams are coplanar
  - All beams are equally weighted
  - All beams are directed at the same point in the target volume
  - Geometric accuracy of isocenter localization of  $\pm 1\text{mm}$  is acceptable
18. According to ICRU, high dose rate (HDR) brachytherapy is classified as brachytherapy with a prescription dose rate of:
- 02 cGy/ min or higher
  - 10 cGy/ min or higher
  - 20 cGy/ min or higher
  - 40 cGy/ min or higher
19. Potential advantage of kilovoltage cone-beam CT (kVCBCT) over megavoltage conebeam CT (MVCBCT) include all EXCEPT :
- Better contrast and spatial resolution
  - Better soft tissue visibility
  - Less susceptibility to artefacts, such as metallic implants
  - Low imaging dose

20. Which of the following statements about electrons is false?
- Electrons, due to their negative charge and low mass, can be accelerated to high energies in the linear accelerators or Betatrons
  - Electrons can be produced during nuclear decay process, and are known as delta particles
  - The number of electrons in an atom is equal to the number of positively charged protons in a neutral atom
  - There is a limited range of electrons in contrast to X- or Gamma rays
21. Which of the following is NOT correctly related with bremsstrahlung x-rays and characteristic x-rays?
- Characteristic x-rays are mono-energetic
  - The probability of bremsstrahlung x-ray production increases with the square of target's atomic number
  - Both types of x-rays can be used in megavoltage radiotherapy
  - Both types of x-rays can be produced in x-ray tubes
22. Which of the following measures ionization?
- Farmer chamber
  - TLD
  - Calorimetry
  - Fricke dosimeter
23. Which of the following is NOT correct for the bolus?
- It is used for tissue compensation
  - It is put on the skin at a right angle to the beam axis
  - It increases the skin dose
  - The effect of scattered radiation reaching to the skin decrease with the use of bolus
24. Which of the following stereotactic frames is designed for fractionated SRT?
- Gill-Thomas-Cosman
  - Leksell
  - Richert-Munginger
  - Brown-Robert-Wells
25. There is no transfer of energy to the atoms in this event; thus, ionization does not occur. This type of photon-matter interaction is known as:
- Coherent scattering
  - Photodisintegration
  - Pair production
  - Photo-electric effect

26. Which of the following match-ups concerning radiation units is false?
- Radioactivity- Becquerel
  - Exposure- Sievert
  - Absorbed dose- Gray
  - None of the above
27. Which of the following is 80% isodose line for electrons?
- $E/2$
  - $E/3$
  - $E/4$
  - $E/6$
28. What is the block thickness for 6 MV photons?
- 1.5 cm
  - 4 cm
  - 5 cm
  - 6 cm
29. Which of the following is NOT correct for compensating filters?
- They are used for homogeneous dose distribution in the irradiated volume
  - They are made up of Aluminum-tin or Copper-tin mixture
  - They are put in the patient's skin
  - They are individually designed to compensate for tissue irregularities
30. What is the maximum allowable dose limit per year for radiation workers?
- 1 mSv
  - 5 mSv
  - 20 mSv
  - 50 mSv
31. Which of the following is an advantage with individualized blocks?
- Inexpensive
  - Time saving
  - Decreased work load in the department
  - Close fit
32. Which of the following parameters is associated with a decrease in the penumbra?
- Increase in SSD
  - Increase in source diameter
  - Decrease in field size
  - None of the above

33. Which of the following factors determines the dose profile?

1. Flatness
  2. Symmetry
  3. Penumbra
- a. 1 and 2
  - b. 2 and 3
  - c. 1 and 3
  - d. All three factors

34. Integral dose:

- a. Is measured in the units of Gy/ Kg
- b. Decreases with increase in beam energy for the same target dose delivered by equally weighted parallel opposed beams
- c. Should be maximized as much as possible to sterilize the tumor
- d. Should be maximized in treating the pediatric patients

35. Which of the following is FALSE regarding an isodose curve?

- a. Have a concavity
- b. Cross another curve of a different value
- c. Cover the entire patient
- d. Exceeds 100%

36. A point on the cumulative dose volume histogram (DVH) curve represents:

- a. The volume that receives the indicated dose
- b. The volume that receives the indicated dose or lower
- c. The volume that receives the indicated dose or higher
- d. The volume that receives the indicated dose on the average

37. Clinical proton generators consist of:

- a. Linacs
- b. Microtrons
- c. Betatrons
- d. Cyclotrons

38. The percentage depth dose depends on:

1. Radiation type
  2. Energy
  3. Source diameter
- a. Only 1
  - b. Both 1 and 2
  - c. Both 1 and 3
  - d. 1, 2, and 3

39. Find the incorrect statement regarding radionuclides and their half life:
- Iridium-192: 74 days
  - Caesium-137: 30 years
  - Iodine-125: 2.7 days
  - Strontium-90: 28.7 years
40. Which of the following statements regarding Paris system of implants is false?
- It was developed for use in determining the dose distribution around Iridium-192 wire implants
  - Separation of sources may vary between 5mm and 20 mm
  - Crossing sources at the end of implant are used
  - The central plane is defined as a plane perpendicular to the sources midway along the sources
41. What is the region between the skin and the depth at the dose maximum called?
- Build-up region
  - Entrance region
  - Pin depth
  - Dmax
42. Which of the following match-ups is NOT correct concerning the disadvantages of radiation used in external radiotherapy?
- Photon- high entrance dose
  - Electron- limited penetration
  - Proton- large penumbra
  - Proton- high exit dose
43. Which of the following statements about the photoelectric effect is INCORRECT?
- Incoming radiation actually hits the orbital electron on the innermost side and propels it outside of the atom
  - It is the basic interaction in the diagnostic radiology
  - Bone absorbs more radiation than soft tissue because of this interaction
  - Incoming photons lose part of their energy and continue to have further interactions with the other electrons
44. Which of the following is FALSE regarding the feature of isocentric treatment?
- Stable patient position
  - Reduced treatment time
  - Field matching is not reliable
  - Option for rotational therapy

45. Which of the following correctly represents the formula of equivalent square, where A and B are length and width of a rectangular field?
- $2AB / (A+B)$
  - $2AB / (A+B)$
  - $2(A+B) / (AB)$
  - $AB / 2(A+B)$
46. What advantage does Ir-192 have over both Co-60 and Cs-137 for HDR brachytherapy source material?
- Larger half life
  - Higher specific activity
  - Higher average energy
  - Higher HVL
47. The term Step-and-Shoot is sometimes used to describe which IMRT delivery technique?
- Helical tomotherapy
  - Intensity Modulated Arc Therapy
  - Segmented MLC- IMRT
  - Dynamic MLC- IMRT
48. Which of the following is a mismatched pair?
- ICRU 38- Brachytherapy recommendation in cancer cervix
  - ICRU 50- Prescribing, recording, and reporting photon beam therapy
  - ICRU 83- Prescribing, recording, and reporting photon beam intensity modulated radiation therapy
  - None of the above
49. Rotational x-ray beam therapy is acceptable in all of the following conditions EXCEPT:
- When the external contour of the patient is fairly cylindrical
  - When blocking is required to shield sensitive structures
  - When target volume is small
  - When target volume is centrally located
50. The Elekta Gamma Knife:
- Delivers a 6-MV photon beam
  - Uses a rotating source system to equally distribute the dose distribution
  - Is slightly less accurate than a linac based SRS system
  - Was the first SRS system used in the world

# Congratulations

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## The GEC ESTRO Handbook of Brachytherapy

SECOND EDITION

PART II: CLINICAL PRACTICE

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**Head and Neck - Oropharynx**

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**ESTRO**



## CORONA VACCINE FOR CANCER PATIENTS



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For newly diagnosed cancer patients  
when they should get vaccinated?



1. Ideally, it is best to vaccinate before start of treatment as the immune response to the vaccine may be impaired in patients receiving chemotherapy. The vaccine is optimally administered at least two weeks before chemotherapy starts.

I have undergone surgery for cancer,  
can I take the vaccine?



1. Since fever can occur in the first 24 to 48 hours after vaccination, it's best to avoid scheduling your vaccination within a few days of planned surgery as a fever may result in cancellation of the surgery.
2. For those undergoing splenectomy, you should receive the first vaccine dose at least two weeks or more before surgery if possible.

I am a cancer survivor not on  
treatment can I take the vaccine?



I have just completed cancer  
treatment, can I take the vaccine?



If you have received chemotherapy you have to wait till wbc count comes to normal

I am on radiotherapy treatment, can  
I take the vaccine?



1. For most patients receiving radiation treatment, it is recommended to proceed with vaccination and radiation treatment need not be interrupted.



I am a breast cancer patient, any precaution?



1. Patients who have had surgery to remove lymph nodes in the underarm area, including many patients with breast cancer, may receive their vaccine in the opposite arm. It's possible that lymph node enlargement resulting from the COVID-19 vaccination could exacerbate lymphedema, if shot taken in the same arm.

I am on chemotherapy treatment, can I take the vaccine?



1. Yes  
2. It's preferable to receive the vaccines at a time when your white blood counts are not expected to be low.

I am on steroid drug for cancer treatment, can I take the vaccine?



1. Corticosteroids may reduce the response to COVID-19 vaccination. If you require corticosteroids as a part of your cancer treatment, you should discuss the timing of vaccination with your healthcare provider.

For patients receiving rituximab, blinatumomab, anti-thymocyte globulin, alemtuzumab and other lymphocyte-depleting therapies



1. These treatments can affect the lymphocytes count, which is an important part of the immune response to the COVID-19 vaccines.  
2. Vaccination may be more effective if it is delayed for at least three months after completion of these therapies.  
3. However, if COVID-19 rates are high in your community, the benefit of partial protection from vaccination during or soon after treatment should be considered.

I am on hormonal therapy for cancer, can I take the vaccine?



1. Endocrine or hormonal treatments for cancer including tamoxifen, aromatase inhibitors, LHRH analogs and anti-androgens are not expected to alter the safety or effectiveness of the vaccines.

I am on immunotherapy for cancer, can I take the vaccine?



1. For most patients receiving immunotherapy for cancer, it's fine to proceed with vaccination and immunotherapy need not be interrupted.

I have undergone bone marrow transplantation, can I take the vaccine?



I am undergoing treatment for leukemia, can I take the vaccine?



I am undergoing chemo treatment for cancer and having low platelet count, can I take the vaccine?



There are two vaccines available, which one I should take?



1. As government is giving free and you do not have a chance to choose.
2. Do not worry take whichever is available
3. If there is an option then you can choose the one having better efficacy.



Any side effects will I get?



1. Few people may get fever and local pain at injection site.
2. You can use paracetamol tab as per your need.

How to get vaccine?



1. Go to COWIN portal and register and schedule your slot at near by hospital

<https://www.cowin.gov.in>

# Step-1- COWIN website



## Step-2- You can also register with Co-WIN app in your own mobile



## Step-3- Register yourself





## Step-4- Enter your mobile number and get OTP



## Step-5- Enter OTP



## Step-6- Enter details of individual . Better is Aadhaar card



## Step-7- schedule



## Step-8- chose the hospital



## Step-9- Choose your nearest place



## Step-10- DOWNLOAD YOUR DOCUMENT



## Step-11- Reach the vaccination center with your Aadhar card



## Step-12- Take the vaccine



You can reschedule if you want



For cancer treatment I am outside from native state can I get it where I am?



1. No problem

## KNOW THE VACCINATION PROCESS

### STEP 1

Candidate registers on CoWIN app  
Receives SMS with time and date

### STEP 2

Candidate reaches vaccination site  
Shows the SMS to vaccination officer

### STEP 3

Vaccination officer scans identification document

### STEP 4

Candidate's details on CoWIN app verified  
Verification using OTP received via SMS

### STEP 5

Candidate is vaccinated  
Vaccination officer updates data on CoWIN app

### STEP 6

Candidate gets another SMS and OTP  
Details of appointment for second dose

### STEP 7

Recipient has to wait for 30 minutes  
To be observed for any allergic reaction



I am a cancer patient and have received the vaccine, still I need to use mask?



S-SANITIZATION  
M-MASK  
S-SOCIAL DISTANCING



## OBITUARY: DR SUDHIR KUMAR BHARGAVA



### DEDICATED TO PROVIDING SAFE, EFFICIENT, AND PATIENT

Talented and accomplished Oncologist with experience in departmental protocol, policy and procedures, and **established standards of practice.**

With over **35 years** of experience in all modalities of **radiation oncology equipment using both conventional and digital** with outstanding technical background. Strong understanding of principles, methods and procedures for the delivery of **medical evaluation, diagnosis and treatment.** Skills cover in **leading medical facilities to new heights in revenues and patient satisfaction.**

**TOTAL CANCER PATIENTS TREATED IN OVER 3.2 DECADES Approximately 30,000**  
**ACADEMIC**

1986 **M.D. (RT)** from Rajasthan University

1981 **M.B.B.S.** from Rajasthan University

#### **SPECIALITY OF INTEREST**

<sup>3</sup> Stereotactic Radio Surgery (Brain) **Treated 500+ Patients** <sup>3</sup> Whole body Stereotactic RT

<sup>3</sup> Stereotactic Radio Therapy (Brain) **Treated 400+ Patients** <sup>3</sup> 3 – D Conformal Radiotherapy

<sup>3</sup> Intensity Modulated Radiotherapy (IMRT) <sup>3</sup> Coronary Brachytherapy

<sup>3</sup> Coronary Radioactive Stenting

#### **MEMBERSHIP**

<sup>3</sup> Life Member AROI <sup>3</sup> Life Member of AMPI

<sup>3</sup> Life Member of Hyperthermia Association <sup>3</sup> Life Member of Pain Association

<sup>3</sup> Member of IMA

<sup>3</sup> **Life Member of Neuro-oncology Society of India**

<sup>3</sup> Life Member of Bombay Oncology Society

#### **SERVICE AS A MEDIC TO SPECIALITY SOCIETY**

<sup>3</sup> **Bharat Seva Ashram:** providing medical facilities to 200 cancer patients

<sup>3</sup> Bhartiya Sanskriti Darshan's Integrated Cancer Treatment Centre

#### **ASSOCIATED WITH**

**Bombay Hospital, Mumbai**

**September, 2008 till 2019 HOD & Chief Radiation Oncologist**

Since Jul'00 Sr. Honorary Consultant Radiation Oncologist

Sep'95 – Jun'00 HEAD, Dept. of Radiation Oncology

#### **Honorary Consultant**

Apr'94 – Aug'95 Associate Honorary Consultant

May'89 – Mar'94 Assistant Honorary Consultant

Dec'86 – Mar'89 Clinical Assistant

**S.M.S. Medical College & Hospital, Jaipur**

Apr'85 – Nov'86 Sr. Registrar

Apr'84 – Mar'85 Registrar

Apr'83 – Mar'84 Resident

**PROCEDURES** <sup>3</sup> FNAC <sup>3</sup> Bone Marrow Biopsies <sup>3</sup> Cervix biopsies

**SPECIAL ACHIEVEMENT** Distinction of planning, installing and establishing new departments of Radiation Oncology at the Bombay Hospital.

**ACTIVITIES PERFORMED** Spearheading various functions in the 800 bedded hospital Counseling staff member as and when needed; participating periodic meetings with departmental heads for ≥ smooth functioning of the hospital. Coordinating with the emergency team to ensure prompt response to emergencies. Conducting clinical researches and writing scientific papers. ≥ Interacting with patients on regular basis for getting feedback and working proactively on their grievance. ≥ Dealing with stress on discipline, team work, motivation and quality care so as to achieve patient's loyalty and job satisfaction to employees. Organizing Medical Education programs for promoting healthcare issues such as prevention of disease, health promotion and participating in public health activities.

## 36th ICRO SUN PG TEACHING PROGRAMME- 2021 WEBINAR

Evaluating a Radiation Plan is an essential task for the radiation oncologist that is becoming more complex due to advances in radiation techniques. Multiple components are required to ascertain the quality and acceptability of a radiation therapy plan, which can be difficult to remember for the radiation oncologist in training. Hence we have proposed a systematic approach for plan evaluation to ensure all aspects are properly assessed prior to approval in this webinar.

The approach is commonly described by the acronym CB-CHOP, which stands for Contours, Beams, Coverage, Heterogeneity, Organs at risk and Prescription. Since plan approval is the critical step that transitions from cognitive processes to direct intervention with radiation therapy, CB-CHOP can provide a framework for a pre-intervention safety checklist, which has been shown to reduce errors and improve quality of care.

The 36th ICRO SUN PG Teaching Programme Webinar on Plan Evaluation was designed to help students to approach a treatment plan in a systematic way, and enhance their knowledge to apply them into daily clinical practice.

This Webinar covered the basic tools in Planning, Physics behind Planning, Overview of ICRU 50; 62 and 83 also the Brachytherapy Plan on Day1. The next day we dealt about various sites from Brain to Pelvis focussing on Clinical aspects of Common malignancies in those regions. On the final day we covered the Plan Evaluation of advanced techniques like SRS; SRT; SBRT and PROTONS and concluded the webinar with Cranio-Spinal RT Plan Evaluation in Paediatric population.

We chose the 6th, 7th and 8th of January 2021 for the program, three consecutive days and five lectures everyday and planned from 5.30pm to 8.00 pm. While there were many Webinars being done every other day in India, We had an astonishing 250+ paid registrations including 100+ students from FARO countries like Indonesia and Malaysia.

All the speakers did an excellent job and the participants were very happy and interactive and were firing questions for every lecture. The final day we organized the ICRO Quiz and selected the top three and they will be honoured in our next Annual National Conference of AROI apart from being sponsored completely to attend the Conference.

### Winners were:

First- Dr. Linkon Biswas, NRS Med College, Kokata

Second- Dr. Himanshu Pruthi, SGCCRI, Kolkata

Third- Dr. Ajinkya Gupte, Amrita Institute, Cochin.

The three day Webinar ended in a happy note with all the lectures completed on time and lots of appreciations from the students saying that they are looking forward to such programmes.

Last but not the least our sincere thanks go to Mr. Arvind Suri, SUN oncology who was a strong pillar of support in doing this Webinar and to Webstream World Communications.



## CANCER AWARENESS PROGRAMME: MAX HOSPITAL, BATHINDA

### विश्व कैंसर दिवस के अवसर पर मैक्स सुपर स्पेशलिटी अस्पताल, बठिंडा में कैंसर स्क्रीनिंग कैंप का किया आयोजन

बठिंडा, (नीरज कुमार): लॉयस इंटरनेशनल ऑपरेशन में विशेषज्ञ डॉ. रितु गर्ग, स्त्री रोग विशेषज्ञ के सहयोग से मैक्स सुपर स्पेशलिटी अस्पताल, बठिंडा में विश्व कैंसर दिवस के अवसर पर एक भव्य स्क्रीनिंग शिविर का आयोजन किया गया। यह शिविर 4 से 11 फरवरी 2021 तक जारी होगा। कैंप दौरान ओपीडी समय है सुबह 10 बजे से दोपहर 2 बजे तक और 30 बजे तक का होगा। कैंप में विशेषज्ञ डॉक्टरों की एक टीम जैसे डॉ. राजेश चरित, कैंसर विशेषज्ञ डॉ. मनिंदर सिंह, ऑन्कोलॉजिस्ट रमन सुंदर, कैंसर संचालन विशेषज्ञ, डॉ. दीपक बांसल, पेट और लिवर, फेफड़े पक्ष, छोटी आंत, बड़ी आंत और रीढ़ कैंसर और रोग विशेषज्ञ रोहित गोयल, नाक, कान और गले के

ऑपरेशन में विशेषज्ञ, डॉ. रितु गर्ग, स्त्री रोग विशेषज्ञ के अलावा मुफ्त चिकित्सा सलाह प्रदान की गई। मैमोग्राफी, पेट का अल्ट्रासाउंड सीबीसी पैप स्मीयर, चेस्ट एक्स-रे, यूरिन टेस्ट और पीएसए फेकल ओकल्ट बलड टेस्ट पर 5071 की विशेष छूट दी गई। इस अवसर पर मैक्स सुपर स्पेशलिटी अस्पताल के हरमन लुना के नेतृत्व में एक पोस्टर प्रदर्शनी प्रतियोगिता आयोजित की गई। जिसमें स्कूल-कॉलेज के छात्रों और मैक्स अस्पताल के कर्मचारियों ने भाग लिया। इस प्रतियोगिता में जसप्रीत कौर, मुरिंदर कौर, प्रभजोत कौर और अरंकार सिंह विजेता रहे। डॉक्टरों की टीम ने बताया



### मैक्स अस्पताल में विश्व कैंसर दिवस मौके स्क्रीनिंग कैंप 11 तक

बठिंडा (जगमार्ग न्यूज)। मैक्स सुपर स्पेशलिटी अस्पताल बठिंडा में लॉयस इंटरनेशनल क्लब के सहयोग से विश्व कैंसर दिवस मौके पर कैंसर स्क्रीनिंग कैंप लगाया गया यह कैंप 4 से 11 फरवरी तक जिसका ओपीडी समय सुबह 10 से 2.30 बजे तक किया गया है। जिसमें माहिर डाक्टरों की टीम जिसमें डॉ. रमेश चरित कैंसर के रोगों के माहिर डाक्टर मनिंदर सिंह कैंसर के रोगों के माहिर डा. श्याम सुंदर तरहीन कैंसर के आपरेशन के माहिर डॉ. दीपक बांसल पेट लिवर फूड छोटी बड़ी आंत और पैनक्रियास के कैंसर और रोगों के माहिर डा. रोहित गोयल नाक कान और गले के ऑपरेशनों के माहिर, डॉ. रितु गर्ग महिलाओं के रोगों के माहिर मुफ्त डाक्टरी सलाह देने। मैमोग्राफी पेट का अल्ट्रासाउंड सीबीसी पैप स्मीयर छाती एक्सरे पिशाच टेस्ट और पीएसए फेकल ओकल्ट बलड टेस्टों पर 50 प्रतिशत छूट दी जाएगी। इस मौके मैक्स सुपर स्पेशलिटी अस्पताल बठिंडा में डॉ. हरमन लुना के नेतृत्व में पोस्टर एग्जिबिशन कमीटीशन कराया गया जिसमें विभिन्न स्कूलों और कॉलेजों के छात्रों और मैक्स अस्पताल के स्टाफ ने हिस्सा लिया जिसके विजेता छात्रों के नाम जसप्रीत कौर मुरिंदर कौर प्रभजोत कौर और अरंकार सिंह थे। इस मौके डाक्टरों की टीम ने बताया कि कैंसर की जांच समय पर करवानी चाहिए जोकि समय रहते बीमारी का पता लग पाए इलाज समय पर करवा लेना चाहिए।

## CANCER AWARENESS PROGRAMME : AIIMS Rishikesh







## CANCER DAY CELEBRATION: News from Visakhapatnam

Dr Kanhu Charan Patro



On The Occasion of World Cancer Day, Mahatma Gandhi Cancer Hospital & Research Institute organized Awareness walk associating with various organizations total 800 members participated in the walk and on the same day organized Health Awareness Talks at Visakha Degree College for Women & to Self Help Group Members. Around 300 members participated in the event. we shared information about the Cancer Causes, Symptoms, Precautions to prevent cancer.





## CANCER AWARENESS PROGRAMME



# SUPER CARS FOR SUPER CAUSE

CONGRATULATIONS Dr Vijay Anand Reddy



**Super Car owners' donning T- shirts & cars sporting stickers of "I AM and I WILL" spread the message of early detection & prevention of Cancer**

**Hyderabad, February 7th, 2021:** On the occasion of World Cancer Day 2021, **Apollo Cancer Institutes**, Hyderabad, organized a **Cancer Awareness Super Car Rally**, to commemorate the World Cancer Day, today. Tollywood Diva **Malvika Sharma** flagged off the rally at Necklace Road. The celebrity owners of Hyderabad's twenty plus super cars took part in the drive for a noble cause and to sensitize the public on cancer prevention and detection. They highlighted this year's message on World Cancer day **"I AM and I WILL"** through the entire stretch of the race from Necklace road (IMAX circle) to Apollo Cancer Institutes, Jubilee Hills; via Banjara Hills Road No.1, LVPEI Marg and KBR park. Later,

On completion of the race, **Malvika Sharma** joined Tollywood heartthrob **Catherine Tresa**; **Dr Vijay Anand Reddy**, Director, Apollo Cancer Institutes, Hyderabad; **Dr Vijay Karan Reddy**, Consultant Oncologist, Apollo Cancer Institutes;

The Racers of the Cancer Awareness Super Car Rally, were appreciated for their support for the cause and were felicitated by Ms Catherine Tresa at Apollo Cancer Institutes, Jubilee Hills.

*"Cancer is preventable, detectable early and highly Curable! If you follow – 1). No Smoking or Chewing Tobacco, 2). Healthy Diet, 3) 40 min. of physical exercise you can prevent 70% of Cancers. Regular health check-ups annually can detect early Cancer. Do not ignore warning signs and symptoms of Cancer"* says **Dr Vijay Anand Reddy**, Director, Apollo Cancer Institutes, Hyderabad.

The drivers donning T- shirts and cars sporting stickers of **"I AM and I WILL"** emphasized on the fact that **'YOU'** could BE a student, teacher, engineer, doctor or any professional, but you need to take a pledge that **YOU WILL** join this fight against cancer. Your **"part"** in this battle can range from promising to eat healthy, stop smoking and help others do the same, exercising daily, to educate others about cancer etc. These little efforts from each individual can **help** overcome barriers of cancer prevention, screening, early detection and treatment.



## Activities at JNCHRC, Bhopal



### Congratulations



On the occasion of 26<sup>th</sup> foundation day of the hospital on 11<sup>th</sup> January, 2021, Jawaharlal Nehru Cancer Hospital & Research Centre, Bhopal has started a Cloth Bank to help the underprivileged and needy cancer patients. On the same day various arts and sports activities were organized for staff, their family members and patients to motivate them in this difficult COVID times. JNCH has the facility of free tuition and coaching for the pediatric cancer patients. It provides hope, sympathy and respect to all and help them in building a better tomorrow.

National Achievers' Recognition Forum in New Delhi has awarded the CEO of JNCHRC Mrs Divya Parashar in Social Work category for the year 2020-2021. Dr. N. Ganesh, Consultant Oncogenetics and Sr. Scientist of the hospital has also been awarded with National Achievers' award for Cancer Awareness.

## INTERNATIONAL CHILDHOOD CANCER DAY CELEBRATION

15th of February is International Childhood Cancer Day (ICCD), a global collaborative campaign to raise awareness about childhood cancer and to express support for children and adolescents with cancer, the survivors and their families. Every year, more than 400,000 children and adolescents below 20, are diagnosed with cancer. Early diagnosis and improved access to care saves more lives. We gathered all our Childhood Cancer patients organised painting, dancing competitions for them and on that we moved a step ahead in launching "Patient support group", "Patient Survivorship program" for the parents, to the parents, by the parents. "Better Survival" is achievable #ThroughOurHands



## International Childhood Cancer Day Celebrations @ Mahatma Gandhi Cancer Hospital & Research Institute





Nomination Paper for Election of  
*Fellowship*  
**Indian College of Radiation Oncology**

The undersigned Fellows of the Indian College of Radiation Oncology respectively propose and second the herein-named candidate for election as a Fellow of the College.

Name of the Candidate _____ <div style="text-align: right;">(In Block Letters)</div>							
Designation & Address _____ _____							
_____ City _____ PIN	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						

Space for statement

--

Proposer: \_\_\_\_\_  
(Name in Block letters)

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Seconder: \_\_\_\_\_  
(Name in Block letters)

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature: \_\_\_\_\_  
with date

Signature: \_\_\_\_\_  
with date

(To be filled in the office of the Secretary)

Sl. No. of the Proposal \_\_\_\_\_

Date of receipt of the Proposal \_\_\_\_\_

**Secretary**  
**Indian College of Radiation Oncology**



# INDIAN COLLEGE OF RADIATION ONCOLOGY

## Particulars and Details of Nominee

1. Name in Full:

2. Date and Place of birth:

3. Address:

(a)Present:

(b)Permanent:

4. Nationality:

5. Citizenship:

6. Are you a person of Indian Origin:

7. Field of Specialization:

8. Present Designation:

9. Qualifications:

Degree/Diploma	Year of Acquiring	University/Board

10. (a). Professional Experience & Peer Recognition:

(Details of employment and service record after post-graduation)

	Positions held	Duration	Years	Institution
A.				
B.				

### Additional training received

From	To	Name of organization and nature of training

### Memberships of Scientific Bodies:

#### 11. Publication & Research

a. <u>Journals</u>		Submitted
-	List of Publications in journals included in Medical Databases, Medical Literature analysis & Retrieval System (Medlar) etc.	Yes / No
-	List of Publications in journals, not included in medical Database, but published in Journal of National Societies /Professional Associations	Yes / No
-	Six best published papers	Yes / No
-	Citation index of six best published papers	Yes / No
-	Average impact Factor of the Journals in which the 6 best papers have been published (Impact factor of the Journal in the year of Publication of the concerned article)	Yes / No
b. <u>Authorship / Editorship of</u>		
-	Text Book(s)	Yes / No
-	Monographs	Yes / No
-	Chapters in standard text books/Volume of Proceedings of Major national and Inter-National Conferences of recognized Professional Societies/ Associations	Yes / No
c. <u>Patent (The Patent applied for or obtained by the nominee may be considered by the Credentials Committee)</u>		Yes / No
(i)	Year the patent is applied for;	
(ii)	The agency which granted the patent	
(iii)	If final decision is pending	

#### 12. Special Service to the Profession/Community

a.	Special service in Rural areas/Field work/Community work (especially if outside the domain of assigned responsibility and undertaken as a part of social commitment)	Yes / No
a.	Community based health education:	Yes / No

	b.	Yes / No
	c.	Yes / No
	*Community based health systems research (Disease specific, operational research etc.)	Yes / No
	Delivery of health care to people living in underserved rural, tribal or urban slum population	Yes / No
	Extraordinary Community based service:	Yes / No
	b. Organisation ability for Professional Conferences, Symposia, meetings-Both National and International/promotion of Medical Education and CME/attainment of excellence in quality of patient care (a) <b>Organizational ability for Professional Conferences</b> (b) <b>Promotion of Medical Education and CME</b>	Yes / No

\* As verified by State authority/Public Health or Operational Research publications

### 13. Awards and Grants

<b><u>Research Grants from recognized National and International Agencies (with demonstrable evidence of timely utilisation)</u></b>	
1	
2	
3	

<b><u>Awards by National Societies and Bodies</u></b>		
Sl. No	Name	Year of Award

## Guidelines and Instructions for nomination of candidates

An individual elected as a **Fellow of the Indian College of Radiation Oncology** is expected to:

- (a) Stand out among peers in the profession as a person of distinction at the national/ international level.
- (b) Have distinguished himself/herself in the profession:
  - (i) as a physician in his / her specialty; and/or
  - (ii) in service to Medicine in patient care, teaching, public health work and/or health administration.

The **Eligibility Criteria** for the **Fellowship of Indian College of Radiation Oncology**:

**1. Founder Members of the ICRO**

**OR**

**2. Membership of the ICRO for at least 5 years and possessing more than 15 years of experience after post-graduation.**

A. Founder members are automatically eligible for award of the Fellowship, subject to submission of Application and the payment of the Admission Fees for the Fellowship. (Fellowship Fees-6500/- INR.)

B. For other than Founder Members, Application needs to be submitted and after Election as a Fellow, a communication will be sent to the Elected Fellows for depositing the Admission Fees for the Fellowship, by the due date as per the communication.

**C. Fellowships will be awarded after the receipt of the Admission Fees.**

Format of the **Application Form** and the **Instructions** can be downloaded from the **AROI Website**. A **soft copy** of the application is to reach **Dr. V Srinivasan, Secretary ICRO** through *e.mail* ([secretaryicro@gmail.com](mailto:secretaryicro@gmail.com)) so as to reach him not later than **12 midnight of 31<sup>st</sup> July, 2021**. A **hard copy** of the application along with all supporting documents is to reach the **Secretary, ICRO** (Address given in the application form) at the earliest but not later than **10<sup>th</sup> August, 2021**. The applications will be valid for a period of 2 years (The current year, if received by deadline, and for the subsequent year).

**Late applications will be considered only for the Election of Fellows for the subsequent year.**

**Admission Fees for ICRO Fellows:**

**Rs 6500/- (Rupees Six thousand and Five hundred only)** through DD/ Online Bank Transfer to "AROI-ICRO".

Name of A/C:	AROI-ICRO
Bank:	State Bank of India
Bank Address:	Millerganj, Ludhiana, Punjab-141001
Account No:	30619770736
IFSC:	SBIN0000731
Type of Account:	Savings

The Nominees are to be **Proposed and Seconded by Members of AROI of GOOD STANDING of FIFTEEN YEARS** duration. The **PROPOSERS AND SECONDRS MUST BE ICRO MEMBERS.**

Soft copy of the Application must reach the **Secretary, ICRO** by **midnight of 31<sup>st</sup> July of the year of Election**, with a copy to the **Chairman, ICRO**. Documentary evidence of all Statements/Experience/Awards must be attached to the **HARD COPY** of the Application and is to be sent to the **Secretary, ICRO** so as reach him/her **on or before 10<sup>th</sup> August of the year of Election**.

The attention of the Proposer and Seconder making the nomination is invited to the Guidelines and Instructions laid down for the purpose.

1. The Proposer and Seconder nominating the candidate should certify from personal knowledge the professional and scientific standing/achievements of the candidate
2. Every candidate shall be proposed and seconded by a statement in writing signed by at least two **Life Members of AROI of GOOD STANDING of FIFTEEN YEARS** duration. The **PROPOSERS AND SECONDRS MUST BE ICRO MEMBERS.**



## **INSTRUCTIONS**

1. **Five copies** each and a CD/DVD of the following documents must accompany the application for nomination.
  - (i) A precise statement limited to 120 words on nominee's professional and scientific standing/achievements which form the basis for nomination signed by proposer/seconded.
  - (ii) Information as per format prescribed, duly completed. Follow the same section numbers in their submission as in the nomination form avoiding reference to enclosed appendices.
  - (iii) **List of publications:**
    - (a) Two separate lists of publications i.e. one in Journals included in Medical Databases, Medical Literature analysis and retrieval system (Medlar) etc. and other one in Journals, not included in medical database but published in Journals of National Societies/Professional Associations.
    - (b) Be written in chronological order and should include (1) Names and initials of all authors, (2) Title of article, (3) Title of publication abbreviated, (4) Volume number, (5) First and last page number, (6) Years of publication.  
Reference to books should include: (1) City of publication (2) Name of Publisher (3) Year of Publications.
2. **Five copies** each of six published papers considered to be best by the proposer. The Citation Index of six best published papers of the nominee and Average Impact Factor of the Journals in which the six best papers have been published may also be provided along with nomination for Fellowship. (**Impact factor of the Journal in the year of publication of the concerned article**).

The under-mentioned guidelines may also please be noted in this connection:

1. Only **Life Members of AROI of GOOD STANDING of FIFTEEN YEARS duration and who are ICRO Members** can **Propose** or **Second** the Nominee.
2. A Member may not propose more than three names for Fellowship in a year. He/ She may, however, second any number of proposals.
3. The candidate shall be Indian citizen. Exceptionally a foreign national who may have done outstanding work in India or for India in his/her own country may be considered.

**Note: Nominations which are either incomplete or not according to the prescribed format will not be processed.**

**AROJ WISHES YOU ALL A  
VERY HAPPY BAISAKHI**

