

MEDICAL PHYSICS GAZETTE

NEWSLETTER OF ASSOCIATION OF MEDICAL PHYSICISTS OF INDIA (AMPI)

An affiliate of India National Science Academy and
International Organisation for Medical Physics

Volume 3, No. 2

July 2019

OFFICE BEARERS, AMPI

President

Dr. Sunil Dutt Sharma
Mumbai

Vice President

Dr. Pratik Kumar
Delhi

Secretary

Dr. Shobha Jayaprakash
Mumbai

Treasurer

Mr. Sridhar Sahoo
Mumbai

Joint Secretary

Dr. Anuj Kumar tyagi
Agra

Editor, Medical Physics Gazette

Dr. Pratik Kumar
AIIMS, New Delhi

EXECUTIVE MEMBERS

Dr. K.J. Maria Das

Lucknow

Dr. Ghanshyam Sahani

Mumbai

Dr. Varadharajan Ekambaramz

Chennai

Dr. Muthuvelu Kulandaivel

Chennai

Mr. Rajesh Thiagarajan

Delhi

Mr. Suresh Chaudhari

Pune

Dr. Godson Henry Finlay

Vellore

Dr. Vinod Kumar Dangwal

Patiala

Mr. Vinod Pandey

Haldwani

Prof. Srinivas Challapalli

Mangalore

Editorial

NATIONAL DIGITAL HEALTH BLUEPRINT

The Ministry of Health, Government of India has put National Digital Health Blueprint (NDHB) in the public domain and has asked for the inputs from the stakeholders. This proposal aims at to accomplish the mammoth goals of universal health and well-being as envisaged in the National Health Policy 2017 by the ambitious use of the digital technologies for ramping up the reach, effectiveness, efficiency and performance of the healthcare system. Our country has various health related schemes and sub-systems at state and central levels. This blueprint proposes a holistic comprehensive health system encompassing all existing sub-systems by bringing all under digital architecture. NDHB has the objective to establish and manage the health data in digital form for its seamless exchange. All personal health record will be digital and may be exchanged and available for research and analysis after proper consent and anonymization. For this NDHB identifies 23 building blocks like unique identification of the person, identification of the health facility, disease and devices, confidentiality and security of the data, access to the data by web and mobile app etc. Confidentiality will be maintained by anonymizing the data and by managing the consents for the collection and use of the data. NDHB proposes to register all healthcare professionals, healthcare workers, paramedics and also all the clinical establishments, be it government or private. All health records will be electronic as per international standard. All these data shall be used for clinical decision support to the health policy, health education, screening for the diseases, early detection etc. The digital network will identify key actors such as each patient, family members, doctors, nurses, technicians, ASHA workers, hospitals, diagnostic centers, insurers, researchers (research body), statisticians, manufacturers of the drug and devices and the regulators. NDHB proposes to use the public network but with secured connectivity so that tele-health and tele-radiology data may be safe. It may use Health Cloud developed by Ministry of Electronics and Information Technology (MeitY). A person or patient will be identified by Personal Health Record (PHR) across all the players. Health care provider would update PHR periodically. There will be directory for health facilities (hospitals, clinics, diagnostic centers, pharmacies), doctors, nurses and paramedics, health workers (ASHA), allied professionals (hospital administrators, health IT, disease coders, arogya mitr etc.), disease registry (e.g., national cancer registry) and donors (blood and organs). NDHB aims at to evaluate the quality of infrastructure, quality of treatment, need for screening, preventive intervention, endemic areas, frauds and policies.

It is evident that NDHB is going to affect the whole health sector at all levels. What is the probable implication for us? Such vision will necessitate all hospital data in digital form and data management is going to be a new avenue in a hospital set-up. If Medical Physics personnel are formally trained in IT and digital data management, their contribution to radiation departments and the hospital administration may take a jump. Again, the radiological images and radiation doses delivered to a patient (especially during radiological imaging) may be traced across the hospitals if such field is incorporated in the patient file and may avoid repetitions of the radiological imaging. It may help us in our regional and national reference dose level. Such data may raise the awareness of the public and health administrator about the optimisation of radiation doses. Radiotherapy planning may also be discussed across the platforms and this will bring focus to the quality and uniformity in medical physics work.

The whole NDHB document may be downloaded from https://mohfw.gov.in/sites/default/files/National_Digital_Health_Blueprint_Report_comments_invited.pdf

Pratik Kumar

Editorial Office :

Medical Physics Unit,
Dr. B.R.A. IRCH,
AIIMS, New Delhi-110029
(M) 9810197511
(R) 26589983, (O) 26594448
E-mail: drpratikkumar@gmail.com

CARE PATH: A PATHWAY WHICH HELPS TO KEEP BETTER TRACKING OF EACH PATIENT IN RADIOTHERAPY

Priyanka Agarwal¹, Richa Sharma¹ and Dr Satyajit Pradhan²,
Departments of Medical Physics¹ and Radiation Oncology²,
Homi Bhabha Cancer Hospital, Varanasi.
pr.agarwal27@gmail.com

Radiotherapy is team work of Radiation Oncologist (RO), Medical Physicist (MP) & Radiotherapy Technologist (RTT). These days, in almost every hospital, maintaining of hard copy of records is routine procedure. In RT set-ups with huge patient load, when any patient's treatment gets delayed due to some reason *e.g.* other patients with higher priority or if a patient misses his/her appointment and comes after a gap then, except concerned oncologist or physicist remaining RT team doesn't know at which step patient work has got stuck. In this era, where everything is getting online, keeping of hard copies (various registers) for next one or two decades is again a bit tough since RT team members may change with time and information about old records may not be properly conveyed to new team members. Moreover, if every prescription, remarks (planning, set-up notes) etc. is done online, then misunderstanding due to poor handwriting will no more remain an issue.

To get rid of all these issues, Varian has provided Care Path. Although, it is available since ARIA 8.0, still many of Varian users are unaware of its usage. Care Path helps to maintain systematic workflow without missing a single patient. Different steps of RT workflow can be fed into Care Path as per institutional working protocol.

In Care Path each step of RT workflow is described as an *activity*, which is further segregated as *appointment* (where patient needs to be present physically) and *task* (where patient's physical presence is not required). Reason for segregation being that if an *appointment* is getting delayed it might be due to patient but if a *task* is getting delayed whole responsibility is on concerned RT team member. Each *activity* is assigned to particular team member(s) with *default duration* (time allotted for an activity) and *lag time* (extra time allowed), which has to be completed within *total lag time* (time between two activities, *default duration* + *lag time*) and marked as completed. On completion of an *activity*, next *activity* is highlighted to next concerned team member automatically on home screen. Unless an *activity* is marked as completed by a team member, it will not be highlighted to next concerned team member. There is also provision of creating an *escalation group* (higher authority

team members), so that if an *activity* remains pending even after *total lag time* is over, it will be highlighted to *escalation group*. This group can reschedule or reassign an *activity* to another team member after getting explanation from concerned team member. Since complete treatment duration (standard, hypo or hyper-fractionation) and time required between simulation and treatment varies as per individual case therefore, in Care Path there is also provision for creating different templates for different kind of patients, for example, template for palliative treatment, 3DCRT, IMRT, SRS, brachytherapy etc. Template for weekly chart check, review after particular number of fractions etc. may be created as well. Inclusion of department working hours and holidays helps Care Path to schedule patients automatically as per selected treatment template. Example of such a template is given below, If a patient's treatment (IMRT/Rapid Arc) is to be started within six days of simulation.

Table 1: Activities for RT team members along with default duration and lag time

Activity	RT Team Member(s)	Default Duration	Lag time	Appointment (A)/Task (T)
Patient simulation	RO & RTT	2 hours	1 hour	A
MRI/PET-CT, if required	RO & RTT	6 hours	1 hour	A
DICOM export to ARIA	RTT	30 min	15 min	T
DICOM import in ARIA	MP	2 hours	30 min	T
Imaging registration, if required	RO & MP	1 hour	15 min	T
Target delineation and OARs contouring	RO	7 hours	1 hour	T
Contour review	RO	3 hours	30 min	T
Target prescription, OARs dose constraints & decision of treatment modality	RO	1 hour	15 min	T
Treatment planning as per prescription & modality	MP	7 hours	2 hours	T
Plan finalization	RO	2 hours	15 min	T
Plan parameters verification	MP	2 hours	15 min	T
Verification plan creation	MP	15 min	15 min	T
Plan approval	MP	30 min	5 min	T
Patient specific QA Execution on treatment unit	MP	30 min	15 min	T
Treatment approval and scheduling	RTT	45 min	15 min	T
Patient set-up	RO, MP & RTT	1 hour	30 min	A
Treatment execution	RTT	30 min	15 min	A

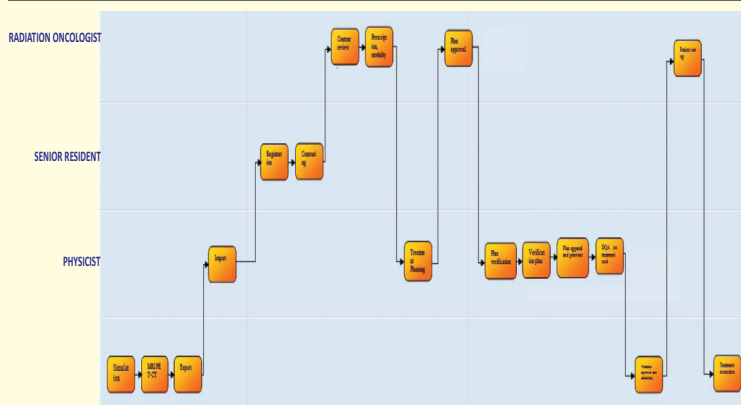


Figure 1: The Standard Care Path workflow as per table1 in ARIA.

We recommend Care Path, in particular for Government set-ups with (needless to say) huge patient load, to maintain a smooth workflow as per institutional protocol. When a patient's treatment is done through Care Path, then from entry to exit of patient (after completion of treatment) complete treatment data is stored systematically at one place. So, this is a good (and quite old) initiation from Varian for better archiving of patient records without the need of numerous registers and should be implemented.

References

1. Creating a Care Path template. ARIA11-QT-11, myvarian.com
2. Creating and attaching a startup Care Path template. ARIA11-QT-7, myvarian.com
3. ARIA Care Path auto scheduling activities. AI13.6-QTS-07-A, myvarian.com
4. The Impact of Transitioning to Prospective Contouring and Planning Rounds as Peer Review. Murat Surucu, Amishi Bajaj, John C. Roeske, Alec M. Block, Jennifer Price, William Small Jr, Abhishek A. Solanki, *Advances in Radiation Oncology* (2019) 4, 532-540

IOMP ACCREDITATION FOR IMPROVING MEDICAL PHYSICS EDUCATION PROGRAMS

Prof. Arun Chougule, Chair ETC and Chair IOMP accreditation Board. arunchougule11@gmail.com

Medical Physics is one of the most challenging and rewarding application of physics to human health care programme. Medical physics is mainly concerned with use of ionizing radiation in diagnosis, therapy and research in health care. Medical physicists are health professionals recognized by International Labour Organization (ILO) and therefore medical physicists working in clinical environment should have required competency and therefore undergo structured training program residency under experienced medical physicist in recognized institution. Though use of ionizing radiation in health care has started in India as early as 1904, no specialized training for medical physics was available until 1950 and today more than 20 Universities/Institutes are providing medical physics education, however the quality and standards of education/training needs to be evaluated. IOMP is dedicated to improve medical physics worldwide by disseminating systemized knowledge through education and training of medical physicists, to advance the practice of physics in medicine by fostering the education, training and professional development of medical physicists. For harmonization of medical physics education program as per

the IOMP Policy Statement No. 2 which provides general guidelines for member organizations in defining the basic requirements for education and training of medical physicists. It aims to serve as a reference for medical physics organizations, education institutions and health care providers and authorities in planning and development of their national infrastructures for education, training and certification of medical physicists and for maintenance of standards of practice. To accomplish the goals, IOMP Accreditation Board (<https://www.iomp.org/accreditation/>) has been set up to evaluate and accredit Medical Physics education and training events. An important part of the accreditation process is the site visit to verify the written information provided by the applicant and assess parameters that cannot be described adequately in written form (assess labs and other key facilities, meet faculty members, students and administrative officials, review dissertations etc). Applicants must meet certain standards to be accredited. For IOMP Accreditation Board standards include: (1) IAEA Publication, Training Course Series No. 56 (endorsed by the IOMP) http://wwwpub.iaea.org/MTCD/Publications/PDF/IAEA-TCS-56_web.pdf. (2) IOMP Policy Statement No. 2 'Basic requirements for education and training of medical physicists'

In general, specialized accreditation attests to the quality of an educational program that prepares for entry into a recognized profession. For the public, accreditation promotes the health, safety and welfare of society by assuring competent public health professionals. Accreditation is important because it helps determine if an institution meets or exceeds minimum standards of quality. Helps students determine acceptable institutions for enrollment. Employers often require evidence that applicants have received a degree from an accredited school or program. Accreditation is a voluntary, non-governmental process of peer review, the purpose of which is to ensure that a program or institution meets defined standards. Accreditation serves as recognition that a program provides a quality service or education. IOMP accreditation board [AB] operates under the guidance of the IOMP ETC and consists of its Chair, the Vice-Chair and 7 members. The IOMP AB is responsible for Carrying out accreditation processes, Maintaining a database of all applications and supporting documents, Financial control including the setting of fees. Appointing a committee to investigate appeals and deciding the outcome of these

appeals, and Maintaining a register of all accredited centers and associated records. Accreditation is the means by which IOMP assesses the quality of medical physics postgraduate degree programs, medical physics residency program, CPD courses and keeps the medical physics community informed. The IOMP Accreditation Board has been set up to ensure that accredited medical physics programs satisfy the highest standards established by IOMP in collaboration with other international organizations. The IOMP Accreditation Board accredits medical physics degree/postgraduate programs, medical physics education and training institutions/centers, medical physics residency program and education and training events.

Benefits of IOMP accreditation

For the public, accreditation promotes the health, safety and welfare of society by assuring competent public health professionals. For prospective students and their parents, accreditation serves a consumer protection purpose. It provides assurance that the school or program has been evaluated and has met accepted standards established by and with the profession. For prospective employers, it provides assurance that the curriculum covers essential skills and knowledge needed for today's jobs. Reputation of accredited programs and courses will result in more demand for these education and training activities. Provision of an international dimension to an education event will attract participants from other countries. It provides the evidence of highest teaching standards and best preparation of medical physicists for the work environment. It publishes the accredited programs and courses on the IOMP website. The first IOMP accreditation of medical physics education program was awarded to Master of Advanced Studies in Medical Physics, International Centre for Theoretical Physics, Trieste, Italy in 2017. Recently it granted accreditation to medical physics postgraduate courses at Catholic University Seoul and Yonsei University, Wonju and radiation therapy physics postgraduate course at KAIST University, Korea. IOMP accreditation board is in process of accrediting more medical physics education program so as to raise the standards of medical physics and harmonize the medical education program in IOMP member countries. India also needs to participate in this accreditation process so as to create more visibility and acceptability of the medical physics education program and the providers.

A RECENT MISHAP IN A TELECOBALT CANCER THERAPY MACHINE - NEED FOR ALERTNESS AND SURVEILLANCE BY INVOLVED PERSONNEL

R. Ravichandran, Cachar Cancer Hospital and Research Centre, Silchar-788015, Assam

In Russia, last month, at Voronezh Regional Clinical Oncology Centre, Voronezh Regional Health Department registered a Mishap of female patient's death during treatment in a Tele-Cobalt machine. This has brought great concern among the radiation oncology staff globally, because such occurrence is un-heard of in the history of treatments with external beam therapy machines, except for some un-toward dose delivery related to treatment plans and executions. The news clipping is reproduced as "A woman (51 Years) suffering from breast cancer was agonisingly crushed to death during a treatment session by a malfunctioning radiation machine -suffered fatal blows to her chest and abdomen as the medical apparatus squashed her- She sustained body injuries that caused her death on the spot. Under description of the incident by the department the report claimed that the patient was 'screaming in agony' when the 'table' - part of the apparatus - on which she was lying suddenly moved upwards and wedged her against a moving part of the machine".

Remedial measures described that 'When he heard his wife screaming, the husband rushed inside and tried to save her from under the heavy machine but failed. Also the medical staff tried to free the woman were unable to do so. The report further continued that the Czech-made gamma-therapeutic 'Teragam' radiation machine was being operated by a technician not a doctor; the machine was 2006 make, has an emergency 'Stop' button but sources said either this did not work, or was not pressed. The cause of the incident is highlighted in press as - 'The cover of the table on which the patient was located went abruptly upwards and pressed her against the collimator - the part of the device where the gamma radiation comes from. 'Unfortunately, death came literally on the table. 'It happened in seconds.

Many designs of telecobalt machines are globally in use, and in India about 180 cobalt machines are either of Theratronix models (from Canada) or Indian Manufactured Bhabhatron models. During commissioning report, it is usually ensured that the design specifications are within acceptable limits. One of the important specification is 'vertical motion of the table' will stop 'table top' at just 2 cm above isocentre; also there is no, automatic

hoist motions of the 'table top' by any soft-ware programs. Local Regulatory authority enforces strict QA measures on the mechanical operations of the moving parts of treatment machines. Therefore, risk of similar mishap occurring is insignificant. From radiation technologist's point of view, patient will be under constant monitoring during treatment. Any deviations observed, will initiate an 'emergency off' at the control console itself. From medical physicist's point of view, there may be a possibility that as per design of the Czech-machine(table mechanical design not available for scrutiny), the Table Top may be mounted on a screw driven mechanical collapsing type hoist Patient Support System, in which accidentally a lock pin would have given way, leading to throwing of the Table Top to great height. If it was a mechanical spring break down, throwing the table top upwards, it is an helpless situation, which is beyond the control of treating technologist or any other staff to foresee and prevent it. This is rather unfortunate. The objective of this communication is to request 'radiation oncology staff' not to be complacent, more vigilant and alert to take all precautions during treatment executions.

References

www.dailymail.co.uk/news/article-7066289

NABL ACCREDITATION PROGRAM FOR QA AGENCIES AND CALIBRATION LABORATORIES: OPPORTUNITIES FOR THE MEDICAL PHYSICISTS

Pratik Kumar, Professor, Medical Physics Unit, IRCH, AIIMS, New Delhi

X-ray equipment is used in hospitals for diagnostic and therapeutic interventions in hospitals. Now-a-days many departments other than radiology are also using radiological imaging equipment like C-arm, CT (mobile and fixed), O-arm and radiography units. The departments may be Gastroenterology, Urology, Orthopaedics, Neurosurgery, Nephrology, Pulmonary Medicine, Plastic-Surgery, Forensic Medicine. X-ray is hazardous and hence all X-ray equipment must be maintained to function optimally. AERB has listed a series of Quality Assurance (QA) tests for these imaging machines and has recognized QA agencies to carry out these tests. Lately, it has been felt that this quality management system should comply with international standard ISO/IEC 17025:2017 which will bring the uniformity, reliability and accuracy to this activity.

National Accreditation Board for Testing and Calibration Laboratories (NABL), a constituent of Quality Council of India, has started an accreditation program for QA agencies

for diagnostic radiology in line with ISO/IEC 17025:2017. NABL carries out third party assessment of QA agencies, calibration laboratories, medical laboratories, proficiency testing providers and reference material producers. NABL is seeking Medical Physicists who may be trained by them to become Technical Assessors in this area. The demand for accreditation is increasing due to increase in calibration laboratories, QA agencies and hospitals.

NABL conducts a 5 day residential Assessor Training Course which are based on Asia Pacific Accreditation Cooperation (APAC) CBC-002 Guidelines on Training Course for Assessors, International Laboratory Accreditation Cooperation (ILAC) G3 Guidelines for Assessors for Lab Accreditation and ISO 19011: 2018 Guidelines for Auditing Management Systems. The trainees who pass the exit examination are empanelled as NABL Assessors. The eligibility criteria for selection for this training course are age range 35-55 and minimum ten years experience in the relevant field. NABL screens and selects the candidates for the training programme by applying its own discretion. At present, the course fee is Rs. 20,000/- plus GST which takes care of boarding and lodging. After empanelment, the assessors are assigned the assessment of the laboratories, agencies and other relevant entities as and when required and they are compensated for their work as well. Medical Physicists working in Government and Private sectors may become NABL Assessors after due procedures.

To become NABL Technical Assessors is a prestige which brings the recognition and the satisfaction of serving the society beyond the boundaries of the respective organization. Medical Physicists may look forward to join hands with NABL in the silently brewing revolution of quality management in the vast but still less-attended area of Indian medical imaging scene. Further details may be inquired by writing a mail to training@nabl.qcin.org

EGO IS THE ENEMY

S. Devaraju, Medical Physicist cum RSO, Homi Bhabha Cancer Hospital & Research Centre, Visakhapatnam.
devaraju.sr@gmail.com

I read some important personality development books. With the help of those books I shall give some explanation about ego. Ego is lack of self-respect. In any situation, if we react aggressively or get hurt it is our ego, and if we remain stable and have faith in ourselves it is self-respect. The moment you recognize that you don't know, you become innocent, you become available...the ego disappears. True

intelligence is not controlled by ego. We must be able to change our mind when presented with information that contradicts our beliefs. If your ego is hurt you may become angry. Understand that ego itself is a disease. Dissolve your ego as far as possible. If you have inferiority complex, or have a very deficient ego you will lose your temper very easily. When you allow your ego to control your thoughts, everything you believe becomes an illusion. For example, we decided that some 'ABC' book is the best book. The moment when we come to conclusion like “this is the best book” we will not allow ourselves to read other authors' books. We will say everything is there in 'ABC' book. This is our ego. It means we attach to our definition of righteousness. Listen to everyone and learn from everyone. Because nobody knows everything but everyone knows something. Ego is attachment to a wrong image of myself. My body, My name, My family, My degree everything that was MINE. We called it I and we forgot the real I. People don't insult us. They give their opinion based on their sansakars, not ours. We take their words and make them our identity and then use that identity to create hurt. Ego is just like dust in the eyes. Without clearing the dust, we can't see anything clearly. So clear the ego and see the world. Ego is the enemy - of ambition, of success, of resilience. When it comes to ego we must fight to destroy it, before it destroys us. People share feedback for our wellbeing; trust their intentions even if it is conveyed with criticism or anger. Without absorbing their negativity, pause and introspect on their opinion. Don't justify your mistakes, accept them and work on self-transformation. Our thoughts, our ways of speaking, our behaviour, our ways of working is a reflection of our personality. Sometimes we do our best. We say what we feel is right. But people around us may not perceive it as right, because it doesn't match their definition of right. They will have a feedback for us. Sometimes the feedback could be a critical opinion. Sometimes they may even get angry with what we have done. They will check us. They will correct us. They will ask us to change.

It is a moment to pause, because we are attached to our perspective of being right. Sometimes, we may know we have made a mistake. Another time, we don't believe it is a mistake, because we did what we felt was right, even though it may not agree with the other person's perception of right. The other person could be a family member, colleague or senior at work. Let's detach from our perspective of right. Take a moment. Don't react. Reaction is ego. And ego means, I am attached to my definition of right. And I am not ready to listen to anyone else's perspective. It is not the moment to react. It is the moment to reflect. Those who are

giving us an opinion or a feedback, they care for us. They have right intentions for us. Opinions may be different but intentions are right. They are our family or our seniors at work. They know what is right for us. Let me take that moment. Trust their intension. Trust their feedback and then listen to what they have to say. Check it for yourself. Is this a better perspective? Is this for my betterment? Is this what was right for that situation? Give yourself the time to check. If we react, we lose that time. We neither understand them. We neither understand their intentions and we justify that we have done. When we justify what we have done, we don't give ourselves the scope to change to improve; to do it better another time; to learn another perspective. We lose it all just because we reacted at that moment. Justifying a mistake reaffirms it and we repeat it the same way every single time. Because we justified that it was right. Accept the feedback. Check for yourself. Contemplate. Spend time on it and when you feel that it could have been done another way, accept. That, I did the best to my capacity. But now I understand that it could be done another way. Respect what you did earlier and respect the other person for giving you a suggestion which will create a better version of you. No justifying. No criticizing. Accepting, Introspecting, and then implementing that in our life. It is a journey of transformation. People around us are saying what they are saying for our betterment. They care for us. Trust their intentions and use their opinions for self-transformation. Appreciation gives you strength to be better and do better. It accelerates your progress towards inner and outer goals. Self-appreciation is self-respect. Waiting for others to appreciate and getting disturbed when they don't is ego. Appreciate yourself every morning and throughout the day, for performing well, being punctual, or being kind.

References

B.K.Shivani from app: thinkright.me, Osho, Sadguru, Ryan holiday etc.

HELLO FOLKS

REQUEST TO PARTICIPATE IN THE INCOME SURVEY

Dear Members of AMPI,

I am collecting responses to a survey which aims to find out what is the monthly salary of various professionals in Radiation Oncology. As you are all aware in India, salaries are not standardized and there is not only the variation across practice settings and regions but also in the same hospital. Radiation Oncology is an institutional practice and therefore salaries are possibly the most important component of the compensation we receive even if there are

performance-linked incentives and bonuses that are provided. Interestingly there is a dearth of published data on the salary that different groups of professionals receive. There is, of course, a bigger motive behind the survey. As a part of the health economics project, I need to know the average monthly salary of different categories of professionals. Of course, there is no such data in the public domain (with the exception of Governmental salaries, of course). The survey is available at the following URL: <https://forms.gle/RfYU96aLQiiQTWwy9> . Alternatively, you may take a look at the website <https://income-survey.netlify.com> where the results of the survey are updated every night. The site and the data will remain available in the public domain and if I have sufficient participation, I will also attempt to get it published in a journal. I am looking at 500 responses to consider a publication. So your help would be greatly appreciated.

Santam Chakraborty
Senior Consultant, Radiation Oncology, Tata Medical Center, Kolkata.

WHO'S WHERE?

Mr. Rajesh Thiagarajan has joined Apollo Proton Cancer Center, Chennai in 2018 as Senior Medical Physicist. Earlier he served as Senior Medical Physicist, Medanta The Medicity, Gurgaon.

Mr. Shankar Reddy has joined BLK Super Specialty Hospital, New Delhi as Sr. Medical Physicist in July 2019. Earlier he served at Bansal Super Speciality Hospital, Bhopal.

Mrs. Gunjan Sharma has joined as Medical Physicist, Deptt. of Radiotherapy, Govt. Medical College, Amritsar, Punjab in April 2019.

Mr. Tapan Kumar Rajguru joined Swami Vivekanand Cancer Asptal, Darbhanga, Bihar as Consultant Medical Physicist in January 2019. Earlier he retired from B.S. Medical College & Hospital, Bankura, W.B. in 2014 after 29 years of service.

Dr Om Prakash Gurjar has joined as Associate Professor (Medical Physics) at M.G.M. Medical College, Indore (Govt. of MP) in June, 2019. Earlier he worked at AIIMS, Bhopal.

Ms. Richa Sharma has joined BLK Super Specialty Hospital, New Delhi in September 2019. Before this, she worked at Homi Bhabha Cancer Hospital, Varanasi.

THREE CHEERS

Dr Sukhvir Singh, Scientist D, Institute of Nuclear Medicine and Allied sciences, DRDO, Delhi has been awarded Ph.D. degree by Bharathiar University, Coimbatore in July 2019. The title of his thesis was “**Monte Carlo simulations and Radiation dosimetry in radiotherapy**”. Earlier in Feb 2019 he was awarded “**Technology Group Award-2018**” by INMAS for development of technologies for combat injury management and in Nov 2018 **Best Oral Paper Award** at AMPICON, Chennai. Congrats !!

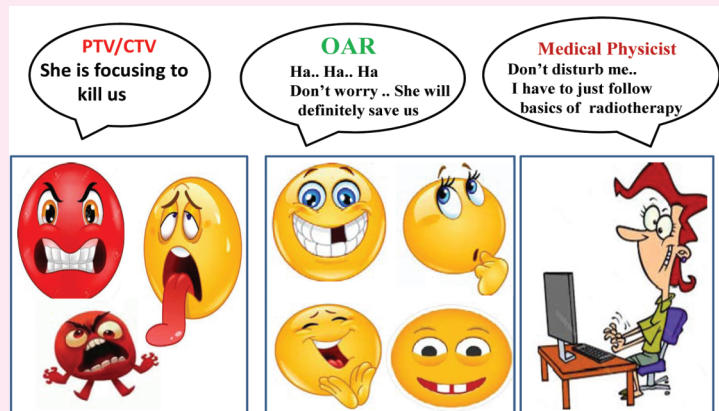
Dr Arvind Shukla has been promoted as Associate Professor, Radiological Physics, Ravindra Nath Tagore Medical College, Udaipur, Rajasthan. Congrats !!

Dr V. Subramani has joined as Assistant Professor of Radiotherapy (Medical Physics), AIIMS, New Delhi in September 2019. Congrats !!

Dr N. Gopishankar has joined as Assistant Professor of Radiotherapy (Medical Physics), AIIMS, New Delhi in September 2019. Congrats !!

Dr Dhanabalan Rajasekaran has joined as Assistant Professor of Radiotherapy (Medical Physics), AIIMS, New Delhi in October 2019. Congrats !!

MEDICAL PHYSICS FUN TIME



Ranjna Agarwal, Surat

Everything in the phenomenal universe is straight line and circle. The horizon, our heads, arms, electrons, the oceans, planets and stars. Their principle function is to radiate. The task of the human being is also to radiate.

Alonzo King

BERGEN
...the difference is we care

**MEDICAL EQUIPMENTS &
MANUFACTURING
TECHNOLOGIES
FOR ELECTRONICS
& PHOTOVOLTAIC**

Since 1983, Bergen Group has set up a benchmark every year in setting up high standards & cost-effective solutions for the Indian Electronics, Automotive, Education and Solar industry and serving to Hospitals & Healthcare Industry with the plant, machinery, equipment and customized solutions designed, produced & offered by our overseas Principals. To the healthcare, hospital & medical trade we could offer turnkey solutions for Diagnostic Medical X-Ray Quality Assurance & measurement tools, Radiation surveillance systems, Central Sterilization & Disinfection systems & individual equipment, patient simulators, Electro Surgery & Cryosurgery equipment etc.

Our range of test & Measurement solutions and radiation safety & surveillance products produced by our overseas Principals include the following;



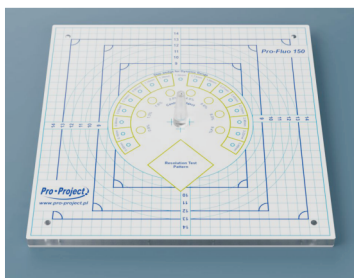
PIRANHA Multifunction X-Ray Meter

**Measurement
Devices for
Diagnostic
X-Rays from
RTI Group,
Sweden,**

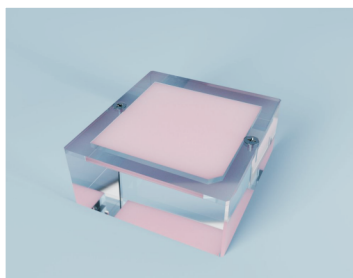


COBIA simple to use X-Ray Meter

Phantoms & Test Patterns For Quality Assurance Of Medical Imaging & Radiotherapy Devices From Pro-project, Poland



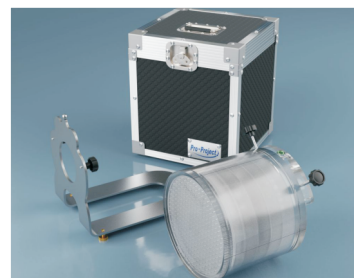
Pro-Fluo 150



Pro-MAM Accreditation



Pro-Dent CT MINI



Pro-CT mk II



Radiation Survey Meter



**Radiation Monitoring System
for Nuclear Medicine Centres**



Personal Dosimeters



Bergen Healthcare Pvt. Ltd.

Head Office: 305-306, Magnum House I, Karampura Commercial Complex, New Delhi -110015 Tel: +91 11 2592 0283~6 Fax: +91 11 2592 0289
Branch office 1: SCO 272, 2nd Floor, Sector 32-D, Chandigarh 160030 Phone: 0172 - 2609901, 2608719, Telefax: 0172 - 5009930
Branch office 2: 3668, First Floor, 8th cross, 13th D Main, HAL 2nd Stage, Indiranagar, Bangalore- 560008, Karnataka,
Telephone : +91 80 42152861, Fax : +91 80 25211862]
Corporate office: CBIP (Center of Excellence) Building, 2nd floor, plot 21, Institutional Area, Sector-32, Gurgaon-122001, Haryana, India
Phone: +91-(0124) 4986400 - 416, Fax: +91 (0124) 4986405

E mail: r.chaudhry@bergengroupindia.com; info@bergengroupindia.com; **Website:** www.bergengroupindia.com