



VOICE OF BMPs

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*Marie Skłodowska-Curie
(7 November 1867 – 4 July 1934)*

International Organization for Medical Physics

OMP

IDMP 2024

INTERNATIONAL DAY OF MEDICAL PHYSICS (IDMP) 2024

Inspiring the next generation of Medical Physicists

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EDITORIAL MESSAGE



Dear Colleagues,

Greetings from the Bangladesh Medical Physics Society (BMPS)!

BMPS publishes its electronic newsletter **“Voice of BMPS”** annually on the occasion of International Day of Medical Physics (IDMP), which celebrates on 7th November by the medical physicist community across the world. This year's theme, **“Inspiring the Next Generation of Medical Physicists”**. This theme serves as a reminder that the future of medical physics relies on the inspiration and empowerment of the next generation. By investing in young talents today, we ensure continued innovation, excellence, and impact in the field of medical physics for years to come.

This issue of “Voice of BMPS” is dedicated to celebrating our milestones, and highlighting the stories of our members who have gone above and beyond in their professional endeavors. It is through their dedication and expertise that we continue to advance the field and make a significant difference in the lives of patients.

As we look to the future, we are excited about the opportunities that lie ahead. The rapid advancements in technology and the increasing importance of precision medicine present us with new challenges and avenues for growth. It is imperative that we continue to foster a culture of innovation, collaboration, and lifelong learning within our community.

To our members, partners, and supporters, we extend our deepest gratitude for your continued support and dedication. Your efforts are the cornerstone of our society's success and the driving force behind our achievements.

We hope you find this issue of Voice of BMPS informative and inspiring. Let us continue to work together to advance the field of medical physics and make a sustainable impact on healthcare.

Let's celebrate this IDMP 2024—the significantly important day for medical physicists.

“Happy International Medical Physics Day”.

Editors

Voice of BMPS

Message from President, IOMP



Dear Colleagues in Bangladesh,

On this year's International Day of Medical Physics, with the theme "Inspiring the Next Generation of Medical Physicists", it is my pleasure to send warm greetings and appreciation to the medical physics community in Bangladesh. This day is a celebration of our collective dedication to improving healthcare outcomes through the application of physics in medicine. In Bangladesh, where healthcare needs are rapidly evolving, your commitment to medical physics is invaluable. I commend each of you for your dedication to excellence, your efforts to raise awareness about the impact of medical physics, and your work to mentor and support upcoming physicists. Through your dedication and expertise, you are paving the way for a stronger healthcare system that embodies the ideals of safety, quality, and accessibility.



Let us continue working together to inspire the next generation of medical physicists, equipping them with the knowledge and skills needed to transform healthcare.

Warm regards and best wishes for continued success.

Prof. John Damilakis

IOMP President

Message from President, AFOMP



Dear members of the Bangladesh Medical Physics Society

Dear friends and colleagues,

On this International Day of Medical Physics, I am honoured to join you in celebrating the role medical physicists play in improving healthcare outcomes and advancing medical science. This day provides a moment to reflect on the values that are fundamental to our work and to our community—among them, the principles of diversity, equity, and inclusion (DEI).

As I mentioned in my opening talk of AOCMP 2024, diversity, equity, and inclusion are essential to fostering an innovative environment in all areas of science, including medical physics. Diversity represents a spectrum of identities—social, ethnic, gender, religious, cultural, and more—each offering unique perspectives that enrich our field. Inclusion, meanwhile, ensures that this diversity is not only welcomed but actively embraced, allowing each individual to contribute fully and authentically to our scientific community. Equity is crucial, as it addresses the systemic barriers that may limit opportunities for some, ultimately fostering fair outcomes for all.

Research and industry data repeatedly demonstrate that diverse teams are more creative, resilient, and adept at problem-solving than homogeneous groups. While teams of similar backgrounds and perspectives might feel easier to manage, they may not yield the best results. In science, and particularly in medical physics, where innovation can translate into life-saving technologies, embracing diversity is not just beneficial—it is essential. The varied viewpoints and experiences that diverse teams bring lead to faster advancements, novel insights, and more comprehensive approaches to research and patient care.

Inclusive practices strengthen team dynamics and are linked to organizational success and market growth. A diverse and inclusive team also fosters happiness and fulfillment, as it allows individuals to express their unique identities while finding common purpose in the values that unite us. In medical physics, these values encompass a commitment to our communities, our patients, and their families. As we move forward, let us celebrate the diversity within our field and ensure that each voice in the BMPS and across the global medical physics community is heard, valued, and empowered. May we continue to build workplaces that not only tolerate difference but celebrate it—cultivating a shared sense of ownership, pride, and purpose. Together, united by our values and guided by our diversity, we are better equipped to serve and innovate for the future of medical physics.

Happy International Day of Medical Physics to everyone and thank you for your contributions and dedication.

Happy IDMP 2024!

Eva Bezak

President, Asia-Oceania Federation of Organizations for Medical Physics (AFOMP)

Message from IDMP Coordinator



Dear Medical Physicists Colleagues across the Globe,

As we come together to celebrate the International Day of Medical Physics (IDMP) 2024, I am filled with immense pride and excitement.



This year's theme, **"Inspiring the Next Generation of Medical Physicists"** resonates deeply with our collective mission to advance the field of medical physics and ensure its future growth and innovation.

Medical physics is a field that thrives on curiosity, dedication, and a relentless pursuit of excellence. It is our responsibility to pass on these values to the next generation. We must inspire, mentor, and support young and aspiring medical physicists, showing them the transformative impact they can have on healthcare and patient outcomes.

Here are a few ways we can collectively inspire and support the future leaders of our field:

- 1. Mentorship and Guidance:** Take the time to mentor young professionals and students. Share your knowledge, experiences, and insights to help them navigate their career paths and overcome challenges.
- 2. Educational Opportunities:** Promote and participate in educational programs, workshops, and conferences. Encourage young physicists to engage in continuous learning and professional development.
- 3. Research and Innovation:** Foster an environment that encourages research and innovation. Support young researchers in their pursuits and provide them with the resources they need to succeed.
- 4. Community and Collaboration:** Build a strong community of medical physicists that values collaboration and inclusivity. Encourage young professionals to connect with their peers and build networks that will support them throughout their careers.
- 5. Recognition and Celebration:** Acknowledge and celebrate the achievements of young medical physicists. Highlight their contributions and successes to motivate them and others in the field.

As we celebrate IDMP 2024, let us all commit to being beacons of inspiration for the next generation. Together, we can ensure that the future of medical physics is bright, dynamic, and filled with boundless possibilities.

Thank you for your dedication and passion. Let's continue to inspire and lead with purpose.

Warm regards,

Ibrahim Duhaini, PhD, MHA, FIOMP, DIMPCB
IOMP Treasurer
IDMP Coordinator

Message from President, BMPS



Dear Colleagues and Friends

Greetings from Bangladesh Medical Physics Society (BMPS).



It is with immense pleasure that we welcome you to the latest edition of the Voice of BMPS—the official e-Newsletter of Bangladesh Medical Physics Society (BMPS). In each issue, we aim to bring you the most insightful updates, and community highlights in the field of medical physics. As we continue to grow and evolve, our commitment to enhancing the quality and impact of medical physics remains steadfast.

This newsletter is a testament to the collective efforts and dedication of our esteemed members. We are proud to showcase the advancements, collaborations, and educational initiatives that are driving the future of medical physics in Bangladesh and beyond.

Publication of the Voice of BMPS on 7th November each year is also a part of the celebration of International Day of Medical Physics (IDMP). This year, the theme of IDMP is “Inspiring the Next Generation of Medical Physics”. As we gather to celebrate the advancements in our field, we also recognize the importance of nurturing and inspiring the future leaders of medical physics.

We encourage you to actively participate, share your insights, and engage with the community through this platform. Your contributions are invaluable to our ongoing mission to foster innovation, excellence, and knowledge dissemination in medical physics.

Thank you for your continued support and enthusiasm. Together, we can achieve remarkable milestones and make significant contributions to healthcare.

Warm regards,
Md Akhtaruzzaman, PhD
President, BMPS

Message from General Secretary, BMPS



Dear Esteemed Colleagues,

Warm greetings from the Bangladesh Medical Physics Society (BMPS)!

It gives me great pleasure to announce the celebration of the International Day of Medical Physics (IDMP) 2024. This significant day, marked on November 7th, not only commemorates the birth of the pioneering Marie Skłodowska-Curie but also serves as a beacon for the future of our profession. This year's theme, "Inspiring the Next Generation of Medical Physicists," perfectly encapsulates our responsibility to nurture and guide the future leaders of our field. As we stand at the intersection of physics and healthcare, our role extends beyond our daily clinical duties – we must become mentors, inspirations, and catalysts for the next wave of innovation in medical physics.

BMPS has consistently demonstrated its commitment to professional development and knowledge sharing through our annual IDMP celebrations. This year, we are proud to present the 12th issue of our E-newsletter, "**Voice of BMPS**," which showcases our dedication to fostering growth and excellence in medical physics. The newsletter features inspiring stories, educational content, and updates on our society's activities, all aimed at supporting both seasoned professionals and emerging talents in our field.

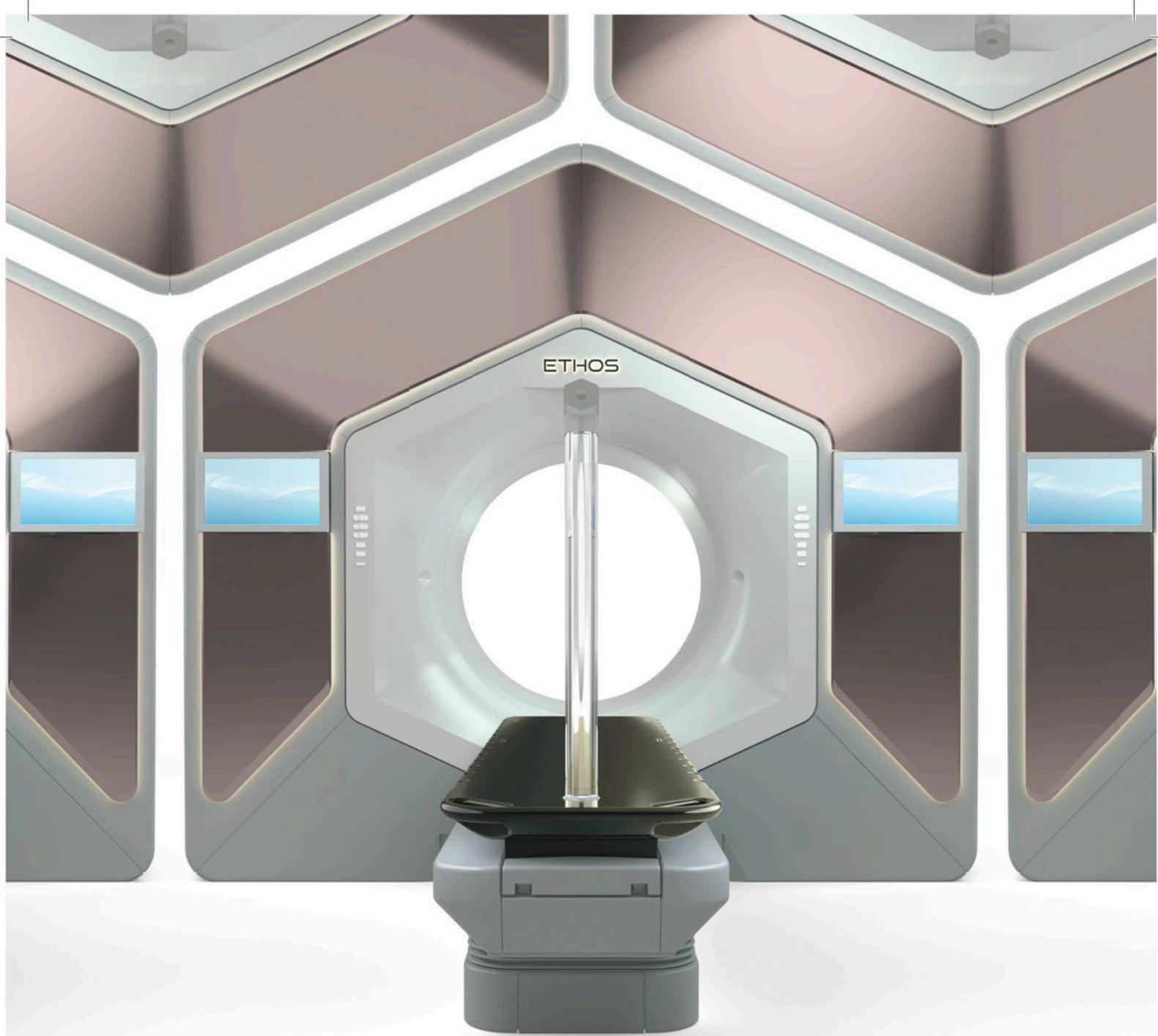
As we look to the future, BMPS is implementing several initiatives to support young medical physicists. We are enhancing our mentorship programs to connect experienced professionals with early-career physicists, expanding educational workshops and training opportunities, creating research collaboration platforms for young investigators, organizing networking events to build strong professional relationships, and developing recognition programs for outstanding contributions by emerging talents.

The future of medical physics lies in our ability to inspire and nurture the next generation of professionals. I encourage all members to actively participate in these initiatives and contribute to building a robust foundation for those who will follow in our footsteps. Whether through sharing your expertise, participating in educational programs, or simply offering guidance to a younger colleague, every action counts in shaping the future of our field.

Let us celebrate this IDMP by renewing our commitment to excellence and inspiration. I invite you to join our planned activities, including seminars, workshops, and interactive sessions, all designed to spark enthusiasm and innovation in medical physics. Together, we can ensure that the torch of knowledge and innovation burns bright for generations to come.

On this special day, I extend my heartfelt wishes to all my colleagues worldwide. Thank you for your unwavering dedication to advancing medical physics.

Warm regards,
Md. Jobairul Islam
General Secretary
Bangladesh Medical Physics Society (BMPS)



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GENERAL ARTICLES

CB-CHOP: A Novel Systematic Framework for Comprehensive Radiation Treatment Plan Evaluation in Modern Radiotherapy - A Review

Md Jobairul Islam

Medical Physicist and Radiation Control Officer (RCO)

Department of Radiation Oncology, Labaid Cancer Hospital and Super Speciality Centre

CB-CHOP is a systematic approach for evaluating radiation treatment plans in radiotherapy, consisting of six key components: Contours, Beams, Coverage, Heterogeneity, Organs at Risk, and Prescription. This acronym provides a structured method for radiation oncologists to assess various aspects of a treatment plan, ensuring its quality and acceptability before approval and initiation of radiation therapy. Here are notes on CB-CHOP and its importance in radiotherapy treatment evaluation:

1. Contours:

- Emphasizes the review of delineated target volumes and organs at risk (OAR).
- Ensures accurate contouring of all relevant structures, avoiding omissions or mistakes.
- Checks for appropriate expansions and modifications in target volumes.

2. Beams/Fields:

- Emphasizes the review of delineated target volumes and organs at risk (OAR).
- Ensures accurate contouring of all relevant structures, avoiding omissions or mistakes.
- Checks for appropriate expansions and modifications in target volumes.

3. Coverage:

- Emphasizes the review of delineated target volumes and organs at risk (OAR).
- Ensures accurate contouring of all relevant structures, avoiding omissions or mistakes.
- Checks for appropriate expansions and modifications in target volumes.

4. Heterogeneity/Hot Spots:

- Examines dose distribution variability within the plan.
- Assesses minimum PTV dose (cold spot) and maximum doses both inside and outside the PTV.
- Defines acceptable heterogeneity parameters based on the treatment modality.

5. Organs at Risk:

- Reviews OAR objectives, prioritizing critical structures with defined dose thresholds.
- Utilizes DVH and 3D graphic plan for comprehensive evaluation.
- Checks spatial distribution of dose and ensures OAR constraints are met.
- Refers to established sources like QUANTEC data for dose constraints.

6. Prescription:

- Finalizes and confirms the prescription details.
- Verifies total dose, dose per fraction, radiation type, energy, delivery method, and schedule.
- Specifies image guidance or setup verification imaging in the prescription.
- Considers appropriate PTV margins based on the chosen image guidance technique.



- **Contours:** Review target volumes and OARS
- **Beam Arrangements/Fields:** Appropriate and reasonable
- **Coverage:** Evaluate on graphic plan and DVH
- **Heterogeneity/Hot Spots:** Value and location
- **Organs at Risk:** Review specified constraints, corresponding isodose lines on plan, and DVH
- **Prescription:** Total dose, dose per fraction, and image guidance

Importance of CB-CHOP in Radiotherapy Treatment Evaluation:

- Comprehensive Evaluation: Ensures a thorough assessment of all critical aspects of a radiation treatment plan.
- Systematic Approach: Provides a structured and memorable method for radiation oncologists to follow during plan evaluation.
- Quality Assurance: Helps identify potential issues related to contours, beams, coverage, heterogeneity, OARs, and prescription, ensuring high-quality treatment plans.
- Patient Safety: Reduces the risk of treatment errors by systematically reviewing key components.
- Adaptability: Applicable to a range of radiation techniques, from conventional 3D plans to advanced IMRT and VMAT plans.
- Efficiency: Facilitates a more efficient evaluation process by breaking down the assessment into distinct components.

In summary, CB-CHOP serves as a valuable tool in the radiotherapy treatment planning process, aiding radiation oncologists in systematically evaluating and ensuring the quality and safety of treatment plans.

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SCIENTIFIC ARTICLES

The Role of Neuroradiology in Diagnosing Neurological, Neurosurgical, and Spinal Diseases at the National Institute of Neurosciences and Hospital, Dhaka

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The field of neuroscience has progressed rapidly in Bangladesh, with institutions like the National Institute of Neurosciences and Hospital (NINS) in Dhaka playing a pivotal role. Established in 2012, NINS is the premier institute for neurological and neurosurgical care in Bangladesh, providing a wide range of specialised services to patients suffering from complex brain and spinal conditions. One of the most transformative aspects of modern neurosciences is the use of radiology, which relies on the physics of radiation to create detailed images of the brain and spinal cord. Techniques like Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) enable non-invasive visualisation of tissues, allowing physicians to diagnose and treat diseases with unprecedented precision.

The physics behind these technologies involves various types of radiation and electromagnetic waves. For example, MRI uses strong magnetic fields and radio waves to generate images without exposing the patient to ionising radiation, while CT scans utilise X-rays to produce cross-sectional images of the body. The ability to manipulate these physical principles for medical purposes has revolutionised the diagnosis and treatment of neurological and spinal diseases, making it possible to detect tumours, vascular anomalies, infections, and degenerative conditions at earlier stages.

NINS, with its advanced neuroradiology department, is at the forefront of these technological advancements in Bangladesh. The hospital is a referral center for neurological and spinal conditions from all over the country and has become a leader in the field of neurosciences. This article highlights the neurological, neurosurgical, and spinal diseases diagnosed at NINS and the role of its state-of-the-art neuroradiology department in advancing patient care in Bangladesh.

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Neuroradiology at NINS: Advanced Diagnostic Techniques

The neuroradiology department at NINS is equipped with sophisticated imaging technologies, including **MRI, CT, and CTA** which are used for non-invasive diagnosis of both neurological and spinal diseases. These technologies enable precise identification of brain and spinal conditions, facilitating prompt and accurate treatment.



1. Neurological and Neurosurgical Diseases

Primary Brain Tumours

Tumours like gliomas, meningiomas, and pituitary adenomas are commonly diagnosed using **MRI** at NINS. For instance, gliomas are distinguished based on their grade, with low-grade gliomas appearing less aggressive on MRI compared to high-grade tumors such as glioblastoma multiforme (GBM). Contrast-enhanced MRI plays a key role in differentiating between benign and malignant tumors ([JNCCN](#)). Other imaging techniques such as **Perfusion MRI** and **Diffusion-Weighted Imaging (DWI)** are also used to assess tumor vascularity and the extent of cellularity, which help in treatment planning.

Secondary Brain Tumours

Metastatic brain tumours are typically identified via **MRI with contrast**, revealing multiple enhancing lesions with surrounding edema. **CT** is employed when there is a suspicion of hemorrhagic metastases, as it can detect bleeding more efficiently ([MDPI](#)). MRI's high resolution is essential for formulating surgical or radiotherapy plans.

Infections and Inflammatory Conditions

Brain infections, including abscesses, tuberculomas, and encephalitis, are diagnosed using **MRI**. DWI helps distinguish abscesses from tumours by detecting restricted diffusion, which is characteristic of pus-filled lesions ([MDPI](#)). In cases of endemic infections like tuberculomas, MRI with contrast shows ring-enhancing lesions, while **CT** better visualizes calcifications ([JNCCN](#)).

Inflammatory diseases like **ADEM** and **Neurosarcoidosis** are diagnosed with **MRI**, where white matter abnormalities and leptomeningeal enhancement are commonly observed.

Vascular Anomalies and Stroke

Vascular conditions such as aneurysms, arteriovenous malformations (AVMs), and strokes are diagnosed using CTA and MRA. CTA and MRA provide non-invasive views of the cerebral vasculature, aiding in the identification of aneurysms or AVMs before they rupture ([MDPI](#)). CT remains the first-line imaging for detecting hemorrhagic strokes, while MRI with DWI is preferred for identifying ischemic strokes ([JNCCN](#)).

Trauma

Trauma cases, such as brain contusions, subdural hematomas, and epidural hematomas, are primarily evaluated using CT, which is excellent for detecting fractures and bleeding. MRI is often used later to assess more subtle injuries, including diffuse axonal injuries ([JNCCN](#)).

Spinal Diseases Diagnosed at NINS

In addition to brain-related conditions, the neuroradiology department at NINS plays a crucial role in diagnosing various spinal diseases. These include tumors, congenital anomalies, infections, and trauma-related spinal injuries.

1. Spinal Tumours

Spinal tumours, whether **intramedullary** (e.g., astrocytoma, ependymoma), **dural** (e.g., meningioma, neurofibroma), or **extradural** (e.g., herniated disc, epidural abscess), are effectively diagnosed using MRI ([MDPI](#)). MRI provides detailed images of both soft tissues and the spinal cord, making it ideal for detecting spinal cord involvement and evaluating tumour spread. CT can complement MRI by detecting bone involvement, especially in **vertebral tumors** such as chordoma and osteoma ([JNCCN](#)).

2. Demyelinating and Neurodegenerative Diseases

Conditions such as **Multiple Sclerosis (MS)** and **Transverse Myelitis (TM)** are diagnosed using MRI. In MS, MRI reveals characteristic lesions in both the brain and spinal cord, while in TM, it identifies inflammation within the spinal cord ([JNCCN](#)). Neurodegenerative conditions like **Motor Neuron Disease (MND)** are also assessed through neuroimaging techniques, providing insight into the progression of spinal cord degeneration.

3. Congenital Spinal Disorders

Congenital disorders like **spina bifida**, **Chiari malformation**, and **scoliosis** are diagnosed primarily using **MRI**, which offers high-resolution images of the spinal cord and surrounding structures ([MDPI](#)). In cases like **myelomeningocele** and **sacral agenesis**, MRI is vital in understanding the extent of the malformation. **CT** is used to assess bone abnormalities such as **butterfly vertebrae** and **hemivertebrae**, which contribute to scoliosis ([JNCCN](#)).

4. Spinal Infections

Infectious conditions such as **Pott's disease** and **spondylodiscitis** are diagnosed using **MRI**, which detects inflammatory changes in the vertebrae and intervertebral discs ([MDPI](#)). **CT** is often used to evaluate bony destruction caused by infections, providing a comprehensive picture of the disease process.

5. Trauma and Craniocervical Junction Disorders

Spinal trauma, including fractures, cord edema, and **anterolisthesis**, is assessed using **CT** and **MRI**. **CT** excels in detecting fractures, while **MRI** is superior in visualizing spinal cord injury and edema (**JNCCN**). Conditions affecting the **craniocervical junction**, such as **atlanto-axial subluxation** and **basilar invagination**, are diagnosed using both **CT** and **MRI**. These modalities provide detailed images necessary for surgical planning in severe cases.

Advancements in Neuroradiology at NINS

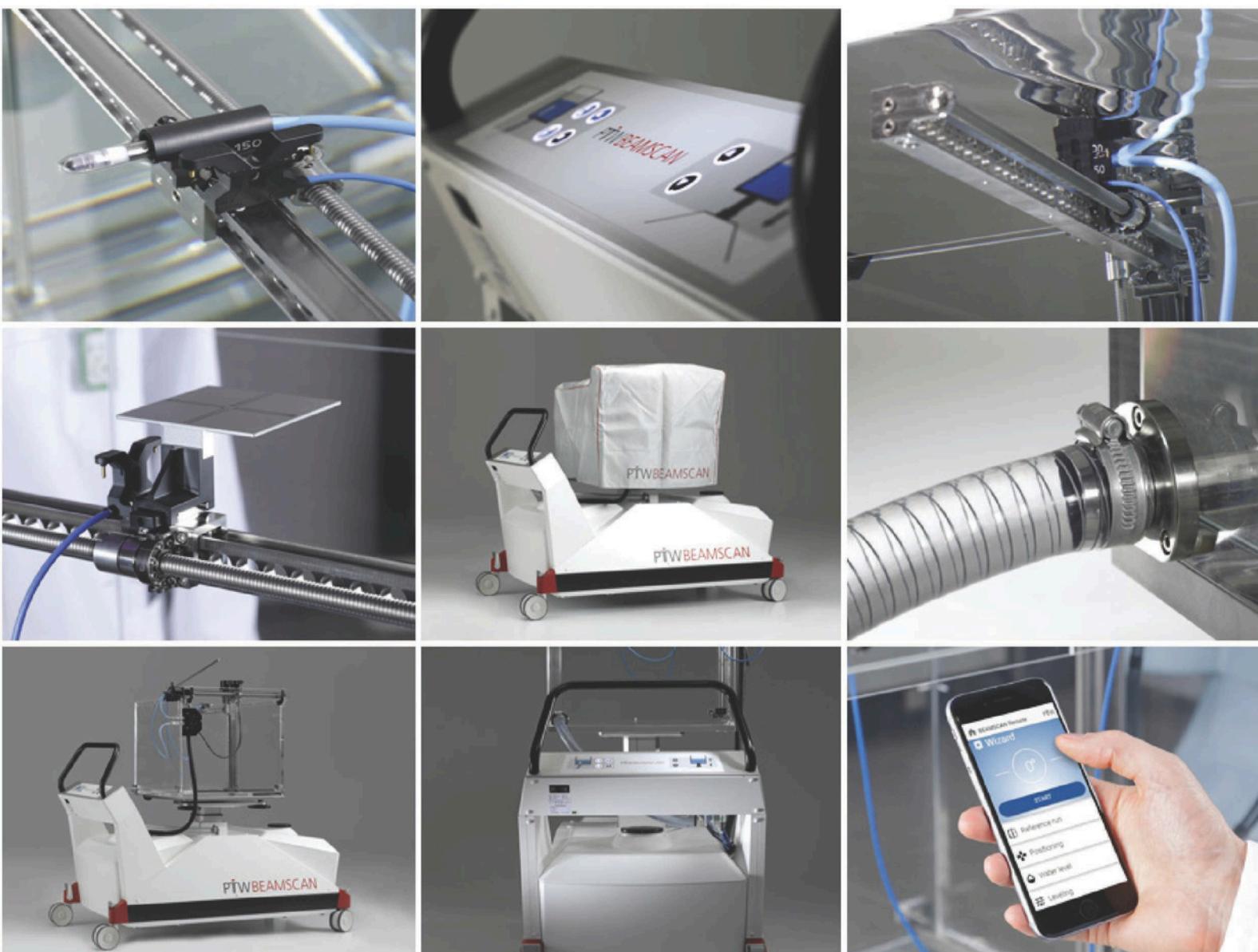
The neuroradiology department at NINS exemplifies the advancements in Bangladesh's neurosciences field. Through the integration of cutting-edge technologies like **MRI and CT**, NINS has dramatically improved its diagnostic capabilities. This has resulted in more accurate diagnoses and better treatment outcomes for patients with complex neurological and spinal diseases. As the demand for specialized neuro-medical care continues to grow, NINS remains at the forefront, setting new standards for medical excellence in Bangladesh.

In conclusion, NINS's neuroradiology department plays a critical role in diagnosing a wide range of neurological, neurosurgical, and spinal diseases. By utilizing advanced imaging techniques, the hospital has made significant strides in the neurosciences field. These technological advancements have not only improved diagnostic accuracy but also facilitated better treatment planning, ultimately enhancing patient care in Bangladesh.

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Continuous Professional Development (CPD)

Enhancing Competence in Radiation Therapy and Protection: A Commitment to Continuous Professional Development

Md. Jobairul Islam

Medical Physicist and RCO, Labaid Cancer Hospital and Super Speciality Center, Dhaka, Bangladesh

Secretary, Bangladesh Medical Physics Society (BMPS)

Science Committee Member, Asia-Oceania Federation of Organizations for Medical Physics (AFOMP)

Mr. Md. Jobairul Islam, a dedicated Medical Physicist and Radiation Control Officer (RCO) at Labaid Cancer Hospital and Super Speciality Centre in Dhaka, Bangladesh, has actively pursued professional development through a series of advanced training programs and workshops. His recent engagements underscore his commitment to advancing his expertise in radiation oncology and radiation protection. Below is an overview of his CPD activities for 2024, illustrating his contributions to high-quality cancer care.

February 1 - May 30, 2024: Advanced Course on Radiotherapy (GU Module), Oncology Club, Bangladesh

Mr. Jobairul Islam completed the "Advanced Course on Radiotherapy-GU Module," a hands-on, module-based training program organized by the Oncology Club, Bangladesh. This program, designed in collaboration with the University of Bologna as the academic partner, aimed to strengthen the skills of radiation professionals in treating genitourinary (GU) cancers. Prof. Dr. Alessio G. Morganti, Professor and Chair of the Radiotherapy Department at Bologna University, served as the Course Director, while Dr. A.F.M. Kamal Uddin was the Course Coordinator. International faculty members, including Prof. Savino Cilla from Italy, Dr. Mostafa Aziz Sumon from Bangladesh, and Dr. Karthick Raj Mani from Australia, provided valuable insights and training. With Varian Medical System as the scientific partner, Mr. Jobairul gained advanced skills in GU radiation therapy planning and quality assurance, equipping him with knowledge that contributes to improved patient care in GU cancer treatment.



February 7-10, 2024: Varian Advanced Imaging Clinical School on IGRT & Motion Management, Tata Medical Center, India

This advanced imaging course offered by Varian Medical System provided Mr. Jobairul with focused training in Image-Guided Radiation Therapy (IGRT) and motion management. Held at Tata Medical Center in West Bengal, India, this program covered critical skills for managing patient movement and ensuring precise targeting of tumors during treatment. The knowledge gained from this course is essential for improving treatment accuracy and reducing radiation exposure to surrounding healthy tissues, enhancing Mr. Jobairul's role in implementing precise and safe cancer treatment protocols.

April 24, 2024: Workshop on Radiation Therapy of Breast Cancer, Oncology Club, Dhaka, Bangladesh

Mr. Jobairul participated in a one-day workshop dedicated to the intricacies of breast cancer radiation therapy. The workshop, organized by the Oncology Club, Bangladesh, provided a comprehensive review of contouring guidelines, treatment planning for both conventional and hypo-fractionated protocols, and the latest techniques in breast cancer radiotherapy. Topics included different planning techniques (3D Conformal Radiation Therapy, IMRT, and Volumetric Modulated Arc Therapy) and the use of the Deep Inspiration Breath Hold (DIBH) technique to protect organs at risk. This workshop enriched Mr. Jobairul's expertise in breast cancer treatment planning, allowing him to apply updated techniques to improve treatment outcomes and patient safety.

May 5-9, 2024: IAEA Training Course on IMRT for Head, Neck, and Lung Cancers, Dhaka Medical College Hospital, Bangladesh

Mr. Jobairul attended this specialized course on Intensity-Modulated Radiation Therapy (IMRT) for head, neck, and lung cancers. Organized by the International Atomic Energy Agency (IAEA) in collaboration with the Bangladesh Atomic Energy Commission (BAEC) and the Bangladesh Society of Radiation Oncologists (BSRO), the training focused on IMRT techniques that maximize dose precision in complex anatomical areas. This knowledge is crucial in avoiding exposure to sensitive structures like the brainstem, spinal cord, and lungs. Through this training, Mr. Jobairul strengthened his proficiency in using advanced radiation techniques for challenging cases, enhancing his capacity to deliver high-quality, patient-centered care.



June 26-27, 2024: Training Course on Radiation Protection for Radiation Control Officers, Bangladesh Atomic Energy Regulatory Authority (BAERA)

To ensure rigorous compliance with radiation safety standards, Mr. Jobairul attended this BAERA-led training designed for Radiation Control Officers overseeing diagnostic X-ray installations. The course covered the fundamentals of radiation protection, regulatory requirements, and safety protocols necessary to maintain a safe environment in diagnostic radiology. His participation in this program has further enhanced his capabilities in radiation safety management, a critical component of his responsibilities in medical physics, ensuring optimal protection for patients and healthcare personnel alike.

Conclusion

Through these comprehensive CPD activities, Mr. Md. Jobairul Islam has continuously expanded his knowledge and practical skills in both radiation oncology and radiation safety. His commitment to professional development enables him to contribute meaningfully to his field, applying advanced techniques and up-to-date practices in radiotherapy and radiation protection. Mr. Jobairul's dedication to his profession enhances the quality and safety of cancer care at Labaid Cancer Hospital and reflects his significant role in elevating medical physics standards in Bangladesh.

BANGLADESH MEDICAL PHYSICS SOCIETY (BMPS)

CELEBRATING INTERNATIONAL DAY OF MEDICAL PHYSICS (IDMP) 2024

"INSPIRING THE NEXT GENERATIONS OF MEDICAL PHYSICISTS"

Topic: "Radiation Dose-Volume Effects for Liver SBRT"

7 November 2024
4:00 PM (GMT)

PLATFORM:
ZOOM (LINK WILL BE SHARED UPON REGISTRATION)

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SPEAKER

PROF. MOYED MIFTEN, PhD, DABR, FASTRO, FAAPM

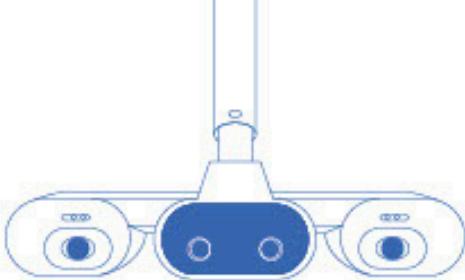
Professor and Director, Medical Physics Division, Dept of Radiation Oncology, University of Colorado School of Medicine Aurora, Colorado, USA

MODERATOR

MD. AKHTARUZZAMAN, PhD

Chief Medical Physicist, Evercare Hospital Chattogram
President, Bangladesh Medical Physics Society (BMPS)

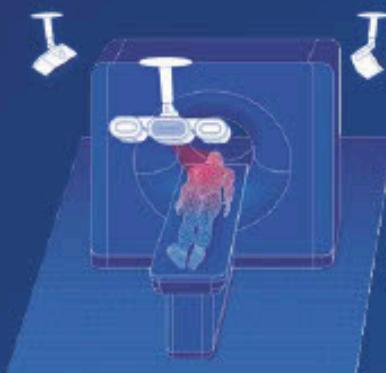
Email: jobairul55@gmail.com | Phone: +880 1672-737453 | Website: <https://bmps.org.bd/>



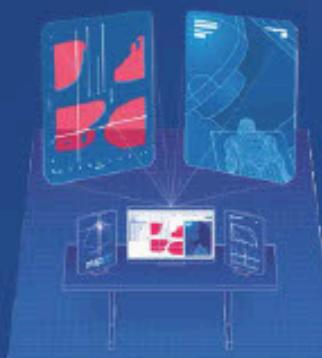
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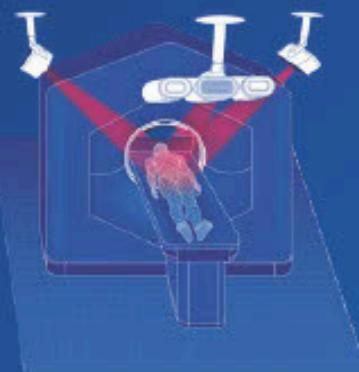
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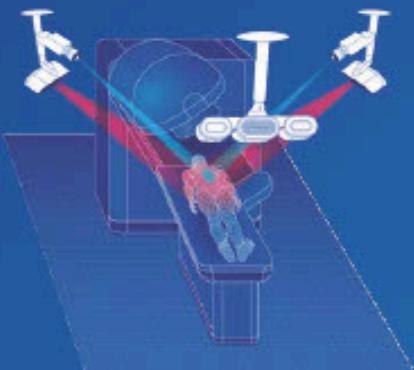
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NEWS AND EVENTS

BMPS Members Present Research and Lead Sessions at AOCMP-SEACOMP 2024

The Bangladesh Medical Physics Society (BMPS) made a notable presence at the 24th Asia-Oceania Congress of Medical Physics (AOCMP) and 22nd Southeast Asia Congress of Medical Physics (SEACOMP), held from October 10-13, 2024, in Penang, Malaysia. The prestigious event, hosted at The Wembley - A St Giles Hotel, centered around the theme "Revolutionizing Patient Care through Medical Physics."

Seven members of BMPS actively participated in this international congress, showcasing Bangladesh's growing contributions to the field of medical physics. Among the participants, Mr. Md. Jobairul Islam (BMPS Secretary), Mr. Md. Mokhlesur Rahman (Joint Secretary), and Ms. Sadia Afrin Sarah (Ex-Treasurer) delivered proffered paper presentations. Additionally, Mr. Md. Rustam Ali, Ms. Tanny Bepari, and Mr. Md. Jobairul Islam presented their research through poster presentations.



Adding to BMPS's distinguished representation, Prof. Dr. Hasin Anupama Azhari, Founder BMPS President and current Vice President of AFOMP, chaired several sessions during the congress. Her leadership role highlighted Bangladesh's growing influence in the regional medical physics community.

The congress provided an excellent platform for our members to share their research, network with international colleagues, and stay updated with the latest developments in medical physics, including advances in radiology, radiation oncology, nuclear medicine, and artificial intelligence applications in healthcare.

This strong participation by BMPS members at AOCMP-SEACOMP 2024 reflects our society's commitment to professional development and international collaboration in the field of medical physics.

BMPS Participation at AFOMP Council Meeting 2024

The AFOMP Council Meeting 2024 was held on October 12 in a hybrid format at The Wembley - A St Giles Hotel, Penang, Malaysia. Prof. Eva Bezak, AFOMP President, opened the meeting with welcoming remarks. Agenda highlights included reports from the President, Vice-President, Secretary-General, and Treasurer, along with updates from the Education and Training, Professional Relations, Science, Awards, and Funding Committees. Key motions were passed to create an Early Career Medical Physicist (ECMP) Sub-committee and to amend the AFOMP Constitution.



The meeting also concluded the bidding process to host the AOCMP 2026, with the Korean Society of Medical Physics (KSMP) winning over the Philippine Society of Medical Physics (SMPRP) to host the congress.

Mr. Md. Jobairul Islam, BMPS Secretary and member of the AFOMP Science Committee, and Mr. Md. Mokhlesur Rahman, Joint Secretary, participated in person, actively representing BMPS and engaging in discussions aimed at advancing medical physics across the Asia-Oceania region.

Bangladesh Medical Physicist Delivers Key Presentation at 28th FARO International Webinar

The Federation of Asian Organizations for Radiation Oncology (FARO) hosted its 28th webinar on May 22, 2024, featuring a significant presentation on breast cancer radiation therapy techniques. Md. Jobairul Islam, a leading Medical Physicist and Radiation Control Officer at Labaid Cancer Hospital and Super Speciality Centre in Dhaka, Bangladesh, and Secretary-General of the Bangladesh Medical Physics Society (BMPS), was the main speaker at this prestigious event.

Mr. Islam's presentation, "*Free-Breathing VMAT versus Deep Inspiration Breath-Hold 3D Conformal Radiation Therapy for Left-Breast Cancer: A Single-Institution Retrospective Dosimetric Analysis*," provided a comparative dosimetric analysis of two prominent techniques in left-breast cancer treatment. His insights offered valuable guidance for radiation oncology professionals across Asia.

THE 28TH FARO WEBINAR
FREE-BREATHING VMAT VERSUS
DEEP INSPIRATION BREATH-HOLD 3D-CRT
BREAST CANCER:
A Single-Institution Retrospective Dosimetric Analysis

Organized by
BSRO | IROS | IRORA

FARO WEBINAR SERIES

WELCOME GREETINGS

Dr. dr. Angela Giselvania,
Sp.Onc.RadiK
Treasurer of The Federation
of Asian Organizations for
Radiation Oncology (FARO)

Dr. Qazi Mushtaq Hussain
President of
Bangladesh Society of
Radiation Oncologists (BSRO)

SPEAKER

Dr. Md. Jobairul Islam
Medical Physicist and Radiation Control Officer (RCO)
Department of Radiation Oncology,
Labsid Cancer Hospital and Super Speciality Centre,
Dhaka, Bangladesh

PANELISTS

Dr. Biswajit Bhattacharjee
Senior Consultant
Radiation & Clinical Oncology
Evercare Hospital,
Dhaka, Bangladesh

Ms Ong Saw Huey
Senior Medical Physicist,
Cancer & Nuclear Medicine Centre,
Sunway Medical Centre,
Malaysia

Dr. Kimiko Hirata
Radiation Oncologist,
Department of Radiation Therapy,
Osaka Red Cross Hospital,
Osaka, Japan

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16.00 (BANGLADESH, GMT +6)

REGISTRATION LINK : <https://bit.ly/IROSROOM66>
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CONTACT:
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Pakistan 15.00 (PKT) China 18.00 (CST)
India 15.30 (IST) Kuala Lumpur 18.00 (MYT)
Sri Lanka 15.30 (SLT) Singapore 18.00 (SGT)
Maldives 15.30 (MMT) Mongolia 18.00 (ULAT)
Myanmar 16.30 (MMT) Singapore 18.00 (SGT)
Bangkok 17.00 (ICT) Seoul 19.00 (KST)
Jakarta 17.00 (WIB) Tokyo 19.00 (JST)




Free-Breathing VMAT versus Deep Inspiration
Breath-Hold 3D-CRT for Left-Breast Cancer:
A Single-Institution Retrospective Dosimetric
Analysis

Md. Jobairul Islam, M.Sc
Medical Physicist & RCO, Department of Radiation Oncology
Labsid Cancer Hospital and Super Speciality Centre
&
General Secretary, Bangladesh Medical Physics Society (BMPS)
Member of Science Committee, Asia-Oceania Federation of Organizations for Medical Physics
(AFOMP)



The event, jointly organized by the Bangladesh Society of Radiation Oncologists (BSRO), Indonesian Radiation Oncology Society (IROS), and Indonesian Radiation Oncology Resident Association (IRORA), featured welcoming remarks by FARO Treasurer Angela Giselvania and BSRO President Dr. Qazi Mushtaq Hussain. Expert panelists included Dr. Biswajit Bhattacharjee (Evercare Hospital Dhaka), Ms. Ong Saw Huey (Sunway Medical Centre, Malaysia), and Dr. Kimiko Hirata (Osaka Red Cross Hospital, Japan), who enriched the discussion with their perspectives.

This webinar highlighted ongoing efforts to advance radiation therapy practices and foster cross-regional collaboration, supporting knowledge-sharing and professional growth among radiation oncology experts in Asia.

BMPs Celebrates International Medical Physics Week 2024

The Bangladesh Medical Physics Society (BMPS) successfully hosted International Medical Physics Week (IMPW-2024) from April 22-26, 2024, featuring five days of virtual sessions with distinguished international speakers. The event brought together experts from Thailand, Australia, India, Indonesia, and Bangladesh, focusing on various aspects of medical physics.

Bangladesh Medical Physics Society (BMPS)
celebrating
INTERNATIONAL MEDICAL PHYSICS WEEK (IMPW)
(IMPW) 22 to 26 April 2024

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Speakers

Asst. Prof. Thiansin Liamsuwan, PhD
Chair, Ph.D. Program in Medical Physics and Medical Engineering
Princess Srisavangavadhan College of Medicine, Chulabhorn
Royal Academy, Thailand 

Assoc. Prof. Dr. Vanessa Panettieri
Senior Medical Physicist, Peter MacCallum Cancer Centre, Australia 

Dr. Biplab Sarkar
Chief Medical Physicist & RSO
Apollo Multispeciality Hospitals Kolkata, India 

Dr. Supriyanto Ardjo Pawiro
Lecturer, Department of Physics, University of Indonesia
President, Indonesian Association of Physicists in Medicine 

Md. Mokhlesur Rahman
Asst. Prof. Dept. of Medical Physics and Biomedical Engineering,
Gono University, Bangladesh 

Contact Us: Md. Jobairul Islam
secretary, BMPS  jobairul55@gmail.com  +8801672737453

Bangladesh Medical Physics Society (BMPS)
celebrating
International Medical Physics Week (IMPW-24)

Program Schedule

BANGLADESH TIME
8:00 PM - 9:00 PM

22 APRIL Challenges and Opportunities in Developing Graduate Programs in Medical Physics
Asst. Prof. Dr. Thiansin Liamsuwan, Chair, Ph.D. Program in Medical Physics and Medical Engineering, Princess Srisavangavadhan College of Medicine, Chulabhorn Royal Academy, Thailand

23 APRIL RapidPlan and The Power of Automated Planning: Model Sharing and Collaboration to Standardize Patient Treatment Quality.
Assoc. Prof. Dr. Vanessa Panettieri, Senior Medical Physicist, Peter MacCallum Cancer Centre, Australia

24 APRIL New Development of Modern SBRT Technique: A Comparative Review between C-ARM and O-Ring Linear Accelerators
Dr. Biplab Sarkar, Chief Medical Physicist & RSO, Apollo Multispeciality Hospitals Kolkata, India

25 APRIL The recognition and development of medical physics in Indonesia.
Dr. Supriyanto Pawiro, Lecturer, Department of Physics, University of Indonesia. President, Indonesian Association of Physicists in Medicine

26 APRIL Decisions and Outcomes of Detector Selection for Radiotherapy
Asst. Prof. Dept. of Medical Physics and Biomedical Engineering, Gono University, Bangladesh

www.bmps.org.bd bmppssecretariat@gmail.com jobairul55@gmail.com

Distinguished speakers included Dr. Thiansin Liamsuwan (Thailand) discussing medical physics education, Dr. Vanessa Panettieri (Australia) presenting on automated planning in radiotherapy, Dr. Biplab Sarkar (India) covering SBRT techniques, Dr. Supriyanto Pawiro (Indonesia) sharing insights on medical physics development, and Md. Mokhlesur Rahman (Bangladesh) addressing detector selection in radiotherapy.

The sessions were effectively moderated by BMPS leadership, including General Secretary Md. Jobairul Islam and President Dr. Md. Akhtaruzzaman, along with other prominent members. Despite time zone differences, the event saw enthusiastic participation and successfully promoted international collaboration in medical physics education and practice.

11th ACBMPS 2024: Advancing Medical Physics Through Knowledge Exchange

The 11th Annual Conference on Bangladesh Medical Physics Society (ACBMPS) was successfully held on January 26, 2024, at the Krishibid Institution, Dhaka. The conference aimed to bring together experts, researchers, and practitioners in the field of medical physics to discuss recent advancements, share innovative research, and foster collaboration. Over 150 participants, including students and delegates, engaged in various sessions, reflecting a strong enthusiasm for enhancing knowledge in medical physics.

The opening ceremony was graced by Chief Guest Prof. Golam Abu Zakaria, with welcoming speeches from BMPS President Dr. Md Akhtaruzzaman, Guest of Honor Dr. Biplab Sarkar, and Special Guest Prof. Dr. Kazi Manzur Kader. Dr. Parvin Akhter Banu unveiled the book Bridge Builder Dr. Golam Abu Zakaria - Medical Physics International, highlighting Prof. Zakaria's contributions to medical physics. The ceremony concluded with remarks by Conference Chair Prof. Hasin Anupama Azhari and a vote of thanks from Organizing Secretary Mr. Md Jobairul Islam.



The scientific program consisted of two sessions with invited speakers. Dr. Biplab Sarkar presented on the impact of artificial intelligence in radiotherapy, while Abdus Sattar Khalid discussed advancements in MRI-guided brachytherapy. Other notable presentations included Dr. Md Akhtaruzzaman on dosimetric challenges and Prof. Md. Abdullah Al Mashud on the therapeutic potential of *Mangifera Indica*.

The AFOMP session highlighted the importance of unified medical physics education, featuring insights from Prof. Golam Abu Zakaria and Prof. Hasin Anupama Azhari. A total of 25 posters were presented, with awards given to the top three entries.

Vendors Varian Medical Systems and Elekta Ltd showcased their latest products during dedicated presentations. The conference concluded with a valedictory ceremony, where BMPS leadership shared their experiences and insights, and feedback was gathered from both local and international attendees. Awards were presented to recognize the outstanding contributions of participants, reinforcing the conference's success in promoting medical physics in Bangladesh.

Annual General Meeting of BMPS Held in Dhaka

The Bangladesh Medical Physics Society (BMPS) successfully held its Annual General Meeting (AGM) at the Krishibid Institution, Dhaka, where the new Executive Committee for the 2023-2025 term was announced and unanimously accepted by the general members.

The meeting was led by the esteemed advisory member, Prof. Dr. Golam Abu Zakaria, who announced the newly elected office bearers. In this new term, Dr. Md. Akhtaruzzaman was elected as the President of BMPS, with Mr. Md. Jobairul Islam assuming the role of Secretary.



Other key appointments included Ms. Jannatul Ferdous Soma as Treasurer, Dr. Md. Anwarul Islam and Dr. Md. Rayhan Uddin as Vice-Presidents, and Md. Mokhlesur Rahman as Joint Secretary. The new Executive Members are Dr. Munima Haque, Md. Motiur Rahman (Mithu), Mr. Mahmudul Hasan, Md. Imran Bin Mostack, Ms. Rukaiya Akter, and Ms. Tanzila Akter.

Following the announcement, the President and Secretary called for collaborative efforts from all members to advance the society's initiatives.

The AGM also served as a platform for discussing future goals and initiatives aimed at fostering the development of medical physics education, research, and its practical applications in healthcare, particularly in radiation oncology, medical imaging, and nuclear medicine.

BMPS Delegation Strengthens Global Connections at ICMP-2023 in India

The 25th International Conference on Medical Physics (ICMP-2023) was held from December 6-9, 2023, at the DAE Convention Centre in Mumbai, India. Organized by AMPI, IOMP, AFOMP, and SEAFOMP, the conference attracted over 1300 participants from 33 countries, centered around the theme "Innovations in Radiation Technology & Medical Physics for Better Healthcare."

BMPS was represented by Md. Jobairul Islam (Secretary), Sadia Afrin Sarah (Treasurer), Md. Mokhleshur Rahman (Executive Committee Member), and Md. Alamgir Hossain (Member). In addition to attending sessions on the latest advancements in radiation therapy, AI in medical physics, and imaging techniques, the BMPS delegation had the opportunity to meet with distinguished leaders, including the IOMP President, AFOMP President and Secretary, SEAFOMP President, and AMPI President and Secretary. These interactions fostered connections and discussions aimed at advancing collaboration in the medical physics field across Asia and globally.

BMPS Participation at AFOMP Council Meeting 2023

The AFOMP Council Meeting 2023 took place on December 7 at the DAE Convention Centre, Mumbai, India. Prof. Eva Bezak, President of AFOMP, welcomed council members, after which the Secretary-General initiated the proceedings. Committee chairs presented detailed updates on their activities, including reports from the Education and Training, Professional Relationship, Science, and Funding Committees. Representatives from AFOMP National Member Organizations attended both in person and online.



Mr. Md. Jobairul Islam, General Secretary of BMPS and Science Committee Member of AFOMP, participated in person, actively representing BMPS and contributing to discussions on advancing medical physics across the Asia-Oceania region.

BMPS Celebrates IDMP 2023 with Webinar on AI in Medical Physics

On November 7th, 2023, the Bangladesh Medical Physics Society (BMPS) organized a webinar to celebrate International Day of Medical Physics (IDMP) 2023. The event featured a talk by Dr. Paul Ravindran, Principal of NERMPI in India, on "Advancement and Artificial Intelligence in Medical Physics."



Celebration of International Day of Medical Physics (IDMP) 2023

Topic:
Advancement and Artificial Intelligence in Medical Physics

Speaker 

Theme: Standing on the Shoulders of Giants

Moderator 

7th November 2023
9:00 pm (Bangladesh Standard Time) / 3.00 PM Greenwich Mean Time (GMT)

Dr Paul Ravindran, Ph.D., Dip.RP., FCCPM.,
Principal, North East Regional Multidisciplinary Paramedical Institute (NERMPI),
Christian Institute of Health Sciences and Research (CIHSR)
Dimapur, Nagaland, India.
<https://www.facebook.com/bmpsorgbd>

Dr Md. Akhtaruzzaman, Ph.D.,
President,
Bangladesh Medical Physics Society (BMPS)
Chief Medical Physicist & RCO,
Evercare Hospital Chattogram

The webinar, moderated by BMPS President Dr. MD. Akhtaruzzaman, aimed to provide a platform for medical physics professionals to share knowledge and discuss the growing role of AI in their field. The attendees engaged actively in the session, which was an excellent opportunity to learn about the latest developments in medical physics. The webinar was well-received by the international medical physics community.

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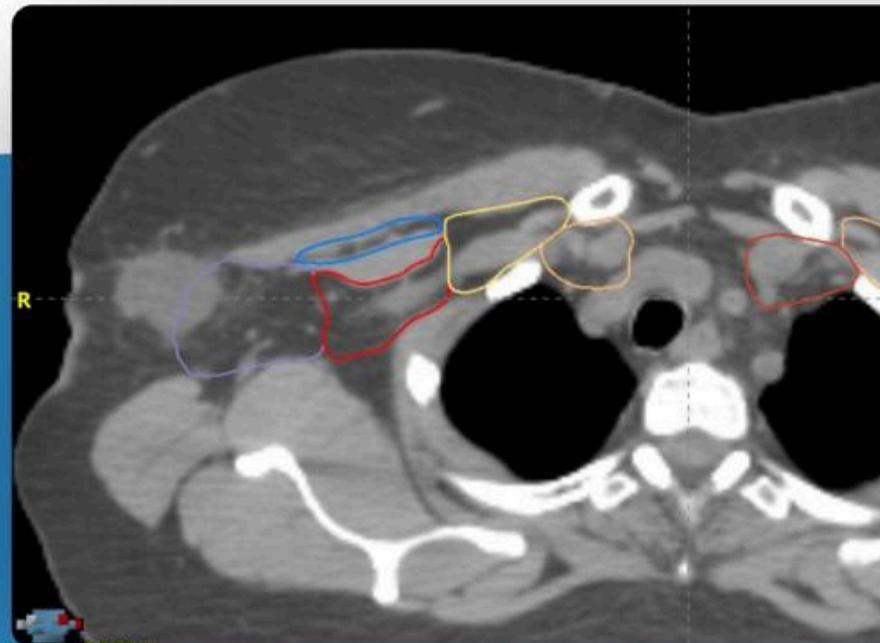
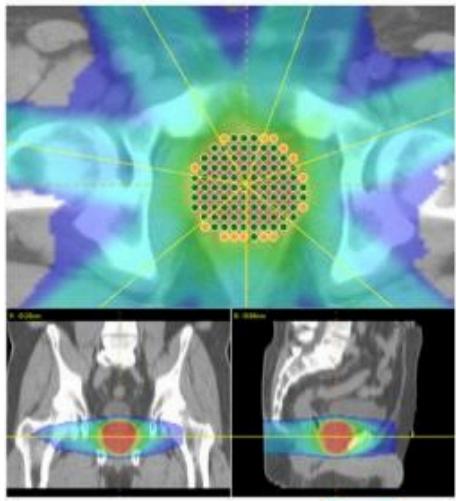
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AWARDS & HONORS

BMPS Members Honored with Prestigious Travel Awards at AOCMP-SEACOMP 2024

The Bangladesh Medical Physics Society (BMPS) is pleased to announce the recognition of four of its members who received prestigious travel awards to attend the Asia-Oceania Congress of Medical Physics (AOCMP) and South-East Asia Congress of Medical Physics (SEACOMP) 2024, held from October 10-13 in Penang, Malaysia.



Md. Mokhlesur Rahman and Ms. Sadia Afrin Sarah were honored with the AFOMP Travel Award 2024, enabling them to present their research at the international conference. Rustam Ali was awarded the MYCEB Travel Award, and Ms. Tanny Bepari received the IUPAP Travel Award, showcasing their commitment and contributions to the field of medical physics on an esteemed platform.

BMPS congratulates these members for their achievements, marking yet another milestone for Bangladeshi medical physicists in the global arena.

BMPS General Member Dr. Suresh Poudel Awarded the 2024 Professor Sung Sil Chu AFOMP Best Student's Publication Award

The Bangladesh Medical Physics Society (BMPS) proudly celebrates the achievement of Dr. Suresh Poudel, a general member from Nepal, who has been awarded the 2024 *Professor Sung Sil Chu AFOMP Best Student's Publication Award.* Dr. Poudel, an alumnus of the Department of Medical Physics and Biomedical Engineering (MPBME) at Gono Bishwabidyalay, Bangladesh, received this honor in recognition of his outstanding contributions to medical physics research.



The award, established by the Asian-Oceanian Federation of Organizations for Medical Physics (AFOMP) with the support of the Korean Society of Medical Physics (KSMP), commemorates Professor Sung Sil Chu's significant contributions to medical physics in the AFOMP region.

BMPS Advisory Member Professor Dr. Golam Abu Zakaria Honored with Germany's Highest Civilian Award

The Bangladesh Medical Physics Society (BMPS) proudly celebrates the remarkable achievement of Professor Dr. Golam Abu Zakaria, an Advisory Member of BMPS, who has been awarded Germany's highest civilian honor, the **Federal Cross of Merit**. This prestigious award, bestowed on behalf of German President Frank-Walter Steinmeier, was presented to Professor Zakaria by Viel's District Administrator Jochen Hagot on March 22 at the Burghaus Bielstein building in Viel, Germany.



The award ceremony was attended by Mayor Ulrich Stuecker, Tanveer Kabir, Counselor (Politics) of the Bangladesh Embassy in Germany, as well as professors, academics, and local dignitaries. Dr. Zakaria, who has contributed significantly to medical physics in both Germany and Bangladesh, shared his gratitude with Deutsche Welle, saying, "In my professional life, I have worked a lot in Germany and Bangladesh. I never thought that I will get this honor."

BMPS is immensely proud of Professor Zakaria's achievement, which stands as a testament to his dedication and outstanding contributions to the field of medical physics, bringing pride to Bangladesh on the global stage.



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BMPS Executive Committee (2023-2025)

Position	Name	Affiliation
President	Dr. Md. Akhtaruzzaman	Chief Medical Physicist and RCO Evercare Hospital Chattogram
VC-President	Dr. Md. Anwarul Islam, DIMPCB	Coordinator Medical Physicist Square Hospital Ltd
VC-President	Dr. Rayhan Uddin	Senior Scientific Bangladesh Atomic Energy Regulatory Authority (BAERA)
General Secretary	Md. Jobairul Islam	Medical Physicist and RCO Labaid Cancer Hospital & Super Specialty Center
Joint Secretary	Md. Mokhlesur Rahman	Lecturer, Dept. of Medical Physics and Biomedical Engineering, Gono University
Treasurer	Jannatul Ferdusy Soma	Medical Physicist, Delta Hospital Limited
Member	Dr. Munima Haque	Associate Professor and Director, Biotechnology program, Department of Mathematics and Natural Sciences, BRAC University.
Member	Md. Motiur Rahman (Mithu)	Chief Medical Physicist & Assistant Project Director, TMSS Cancer Center (TCC), Bogura
Member	Md Mahmudul Hasan Manna	Medical Physicist, CMH Dhaka Major, Bangladesh Army
Member	Md. Imran Bin Mostack	Medical Physicist, North East Cancer Hospital, Sylhet
Member	Rukaiya Akhter	Jr. Medical Physicist, Ahsania Mission Cancer and General Hospital
Member	Tanzila Akter Ratna	Medical Physicist, Delta Hospital Limited



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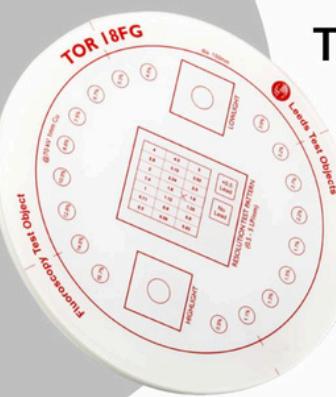
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TOR 18FG

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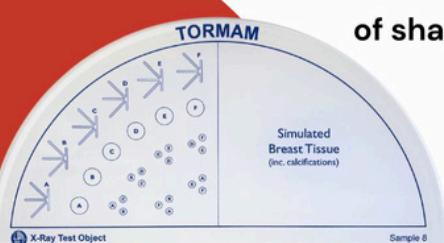
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**MEDICAL PHYSICS IN CANCER CARE:
Challenges and Opportunities for International Cooperation**



13-15 February 2025



Krishibid Institution Bangladesh, Dhaka



CONFERENCE HIGHLIGHTS

- ✓ Artificial Intelligence and Medical Physics
- ✓ Radiotherapy
- ✓ Diagnostic Imaging
- ✓ Nuclear Medicine
- ✓ Radiation Safety & Protection
- ✓ Radiation Biology
- ✓ Radiation Dosimetry
- ✓ Image-Guided Brachytherapy
- ✓ Medical Physics Education, Training and Professional Development

IMPORTANT DATES

1st June
Online Abstract submission

31st October
30th November
Deadline of Abstract submission

10th December
Notification of Acceptance

1st July
Online Registration System Opens

30th November
Deadline of Early Bird Registration

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