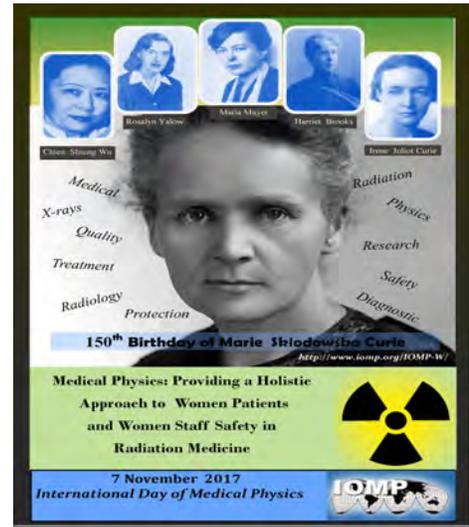




## BMPA Newsletter

An on-line publication of  
Bangladesh Medical Physics Association (BMPA)

On the occasion of the  
**5<sup>th</sup> International Day of Medical Physics (IDMP)-2017**  
*Special Edition 7 November, 2017*



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### 5<sup>th</sup> International Day of Medical Physics observed at Dhaka, Bangladesh

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The International Day of Medical Physics (IDMP) is celebrated globally on the birth date of Madam Marie Sklodowska Curie on 7 November and this year it is Madam Curie's 150th birthday. On this occasion, Bangladesh Medical Physics Association (BMPA) organized a seminar in collaboration with Nuclear Medical Physics Institute, Bangladesh Atomic Energy Commission, at the CME Auditorium Hall of National Institute of Cancer Research & Hospital, Dhaka on 18 November 2017 to celebrate the 5th International Day of Medical Physics (IDMP).

The keynote speakers on this special day were: Professor Dr. M. Aminul Islam, Former Vice-Chancellor of Shahjalal University of Science & Technology, Sylhet, Professor K Siddique-e Rabbani, Honorary Professor, Department of Bio-Medical Physics and Technology, Dhaka University and Dr. Lutfun Nisa, Former Professor, National Institute of Nuclear Medicine & Allied Science, BAEC. Prof. Sadiqur Malik, the President of BMPA and Chief Radiation Oncology Physicist, Delta Medical College & Hospital, Dhaka, presided over the seminar.

Professor M. A. Hai, President Oncology Club and Patron, SAARC Federation of Oncologist graced the occasion as Chief Guest and Professor Dr. Md. Moarraf Hossen, Director, National Institute of Cancer Research & Hospital graced the occasion as Special Guest.

Prof. Dr. M. Aminul Islam delivered a lecture on **Cancer Care and Medical Physics in Bangladesh**. The prevalence of cancer and its treatment in Bangladesh was discussed. The role and importance of Radiation Therapy in cancer treatment and technologies involved were highlighted. The necessity for trained and experienced Medical Physicists for this mode of treatment was emphasized. It was observed that the number of modern machines like Linear Accelerators (LINAC) is inadequate and is installed mostly in private hospitals in Dhaka. Radiation Therapy in private hospitals is too expensive for poor patients and an additional burden for them to come to Dhaka and stay for 6 or 7 weeks for the full course of the therapy. It was suggested that modern radiotherapy machines be installed in government hospitals outside Dhaka and medical physicists be involved in the design of the infrastructure of the radiation vault and be employed for the commissioning of the machines and for the Quality Control of the equipment and treatment planning system.

Professor K Siddique-e Rabbani delivered a lecture on **Telemedicine: Technology development and deployment experience**. He pointed out that a great majority of the global population living in the low resource countries like Bangladesh remains deprived of the benefits of modern healthcare technology even today. Besides, most of the people living in rural areas of these countries do not have access to a qualified doctor for consultation because of which they get maltreatment at the hands of quacks. Under this scenario, telemedicine, or ‘medicine at a distance’ using internet and mobile phones have ushered in a potential for a revolution. Professor Rabbani’s team at Dhaka University is engaged in developing appropriate healthcare technology since 1978 and has been developing computerized medical equipment in Bangladesh in 1985. This expertise and experience allowed them to develop technology for telemedicine including software and online diagnostic equipment like stethoscope, ECG equipment and lung ventilation monitor indigenously. They also deployed this system in the rural Bangladesh since 2015, after two years of field trial. They had to innovate in the deployment model too which relies on rural entrepreneurship. The initiative is now known as ‘Dhaka University Telemedicine Programme’ and 26 rural centres are operating at present. In the last two years, more than 7500 tele-consultations have been provided through qualified doctors to rural people in these centres, mostly against a fee, which the patients were ready to pay. Most of the patients were women, children and the elderly who would not have consulted a doctor had these telemedicine centres were not there. This shows a success of this effort. Although telemedicine mainly caters to primary and secondary healthcare, there is a potential of following up of radiotherapy patients through telemedicine. This would be particularly important to female patients who are considered to be most neglected in the remote areas in Bangladesh.

Prof. Dr. Lutfun Nisa delivered a lecture on “**Contribution of Radiation to the Health and Well-being of Women**”. In her lecture she mentioned: Contribution of radiation to the health and well-being of women is somewhat paradoxical when we consider the history of the ‘Radium Girls’ not too long ago. But much knowledge on the power of radiation has advanced and evolved since that tragedy to allow the benefits of radiation to be realized. Relentless efforts by many brilliant men and women scientists have made it possible to harness radiation with dramatic breakthroughs not only in medicine but also in other fields of science and technology. In medical science, radiation and radio-nuclides play a very positive role in both cancer control and cure and in many other benign diseases of women. Nuclear Medicine in particular is a scientific and clinical discipline in which radionuclide compounds are redistributed *in-vivo* and *in-vitro* and used for diagnostic, therapeutic or investigative purposes. The relevance of radionuclide therapy particularly with regard to women lies in the management of both benign and malignant conditions. For example, thyroid diseases are more common in women than in men. Benign thyroid disorders such as hyperthyroidism (Graves Disease and auto-immune disorders) are conditions that are successfully treated with Nuclear Medicine. Radioiodine therapy for thyroid cancer is a well-established procedure that has been in use for more than 50 years. Newest approach to cancer therapy is in the form of personalized medicine with specific molecular targeting. Nuclear Medicine has paved the way for such customized therapy through sophisticated molecular targets for imaging and therapy. Development of hybrid technologies,

radiopharmaceuticals and diagnostic techniques has advanced targeted therapies and imaging in nuclear medicine practices. Improved imaging technologies allows for precise diagnosis and correct staging of breast cancer and other gynecological cancers so that co-morbidities can be limited and quality of life maintained. Radiation safety, however, remain an issue and the benefits of Nuclear Medicine is countered by exposure to the harmful effects of radiation. Women of child bearing age, pregnant women and children are especially vulnerable to this risk. It is therefore essential that the referring physician who orders the test, does it appropriately and with jurisdiction so that the benefit achieved from the studies can truly exceed the risk of radiation exposure. On the other hand, the Nuclear Medicine procedures must be optimized to obtain the best image quality with the lowest radiation. Last but not the least every laboratory needs to establish a radiation protection standard and strictly follow the universal safety guidelines to achieve ALARA (as low as reasonably achievable) for the patients and for the nuclear medicine personnel.

**Professor Dr. Md. Moarraf Hossen, the Special guest** mentioned that government should give post of the Medical Physicists specially at Cancer Institute and cancer hospitals. He also informed that negotiation has been going on with Government for the posts of the Medical Physicists.

Professor M. A. Hai, the Chief Guest mentioned that he can see a good future for medical physicist in Bangladesh. He also mentioned that a study has shown that cancer patients followed up through telemedicine lived longer than patients coming to a hospital for follow up, which highlighted the role of telemedicine even in cancer treatment and management.

Prof. Sadiqur Malik, the President of Bangladesh Medical Physics Association, mentioned Madame Curie opened the door for the use of Radiation for the benefit of mankind which now spans from diagnosis, treatment and palliation of Cancer. She was not a medical physicist but her work has triggered the field of Medical Physics for the safe use of radiation to disease and suffering of cancer patients, from brain to cervical cancers. As president of BMPA, he reminded all of us of the main areas of development of Medical Physics: radiation protection, imaging to therapy using ionizing and non-ionizing radiations like Ultra Sound, MRI, Optical Systems and X-ray, beta ray, gamma ray. This requires Professional Development by Education and Training of Medical Physicists. Hence **Accreditation, Certification, Registration** of medical physicists of Bangladesh is required for quality patient service. In this regard, Bangladesh Atomic Energy Commission, Bangladesh Atomic Energy Regulatory Authority, Health Ministry, Education Institutions, Private and Public Hospital should cooperate.

Professor Sadiq malik also mentioned that the 5th IDMP Seminar in remembrance of the 150th birthday of Madam Marie Sklodowska-Curie, focuses on huge contribution to the fight against cancer with a theme: of Women Patients and women staff safety in radiation medicine. Medical Physicists have developed Mammography, X-ray, for early diagnosis of Breast Cancer, X-ray energies for diagnosis of osteoporosis and Brachytherapy, gynecologic Cancer. Differences in Radiation Effects in women and men are documented in ICRP publication 103, 2007. Studies

show that women are more sensitive to radiations in pelvic region, uterus, breast, Thyroid (3 times), abdomen, etc. Women are more sensitive to radiation than men. Lethality of radiation exposure is 35% greater than in women than men. Lethality in women comes from the greatest impact of radiation on breast and thyroid. Radiation sensitivity to developing embryo and fetus in pregnancy is higher. Radio sensitivity in women may increase due to hormonal differences.

About 60 Oncologists, medical physicists and other professionals were present in the seminar.



A Group photo of the Seminar participants

## Photo Gallery

### Celebration of the 5th International Day of Medical Physics, 2017



Medical Physics: Providing a Holistic Approach to Women Patients and Women Staff Safety in Radiation Medicine



Welcome Address: Dr. Kamila Afroj Quadir , general Secretary of BMPA



Ms. Papia Chowdhury, PhD student of Department of Biomedical Physics & Technology of Dhaka University, paid a tribute to Madam Curie.



Address by Keynote speaker: Prof. Dr. M. Aminul Islam



Address by Keynote speaker: Dr. K Siddique-e Rabbani



Address by Keynote speaker: Prof. Dr. Lutfun Nisa



Address by Special Guest: Professor Dr. Md. Moarraf Hossen



Address by Chief Guest: Professor M. A. Hai



Address by Chairperson: Prof. Dr. Sadiqur R. Malik



Audience of the Seminar



Vote of Thanks: Md Nahid Hossain, Joint Secretary, BMPA