

ASIA-OCEANIA FEDERATION OF ORGANIZATIONS FOR MEDICAL PHYSICS [AFOMP] – JOURNEY OF 20 YEARS, PROGRESS MADE IN MEDICAL PHYSICS EDUCATION, TRAINING AND PROFESSIONAL RECOGNITION

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Abstract

Asia Oceania Federation of Organizations for Medical physics [AFOMP] was founded in 2000 to increase the cooperation in national medical physics organizations [NMO] for medical physics professional development, promoting medical physics and scientific exchange. AFOMP has 19 NMO's as members and 2 NMO's as affiliate members and accounts for about 11000 medical physicists. AFOMP region is very diverse socioeconomically, culturally and hence every country has started developing medical physics differently. However AFOMP with help of IAEA, IOMP and other international agencies is trying to bridge the gaps and moving towards harmonizing the medical physics, though it is a daunting task. About 850 students per year are admitted for masters in medical physics program in 101 institutes/universities in AFOMP countries.

Key words- AFOMP, Medical Physics, NMO, Radiotherapy, X – ray

Introduction

The idea of forming a regional organization for medical physics in Asia was fostered during World Congress of Medical Physics and Biomedical Engineering [WC1991, held at Kyoto, Japan] in the minds of leading medical physicists of that time from Asia and stimulated by IOMP leaders. The idea and initiatives were carried forward and Asia-Oceania Federation of Organizations for Medical Physics (AFOMP) founded on 28th May 2000 at Beijing meeting by visionary and foresighted medical physics professionals and leaders; it was only possible with the aspiration of and enthusiastic and cohesive efforts made by many medical physicists. It is worth to mention the initiatives and efforts of Dr. KY Cheung, Dr. Yimin Hu, Late Dr. Kiyonari Inamura, Dr. Akira Ito, Dr. Kwan Hoong Ng, Late Dr. Barry Allen, and Dr. Anchali Kisanachinda from AFOMP region. In addition, it was inspiration and guidance of Dr. Geoff Ibbott [the then President of AAPM], Dr. Carrie Boras [Chair of Science Committee IOMP], Dr. William Hendee, Dr. Raymond

Wu, Dr. Colin Orton Dr. Gary Fullerton and Dr. Nan-zhu Xie has given the required thrust for formation of AFOMP.

The idea of regional organization for medical physics from Asia –Oceania region was first conceived during the International conference on Medical Imaging, Medical physics and precision radiation therapy at Guangzhou, China on 5th October, 1999. During the conference Dr. Ito and Dr. Kwan organized a meeting of medical physics representatives from China, Japan, S. Korea, Hong Kong, Thailand and Malaysia attending the conference to discuss and take steps towards forming a regional medical physics organization, the seeds were sown.

During the 2nd International Congress on Medical Radiation Physics at Beijing, Yimin Hu and Raymond Wu organized second meeting of medical physicist's representatives who were attending the conference from China, S. Korea, Australia, New Zealand, Hong Kong, Indonesia, Singapore and Taiwan on 28th May 2000 to take forward the initiative of formation of regional organization. The members attending the meeting decided to form a protem committee Chaired by Dr. KY Cheung for drafting the constitution of the regional organization.

During the World Congress of Medical Physics and Biomedical Engineering [WC2000] at Chicago, the first council meeting of AFOMP was held during 24 & 25 July 2000 and was attended by representative from twelve countries from Asia – Oceania. During the first council meeting of AFOMP, Dr. K Y Cheung was elected as first President of AFOMP.

IOMP council meeting held on 26 July 2000, admitted AFOMP as regional Organization [RO] of IOMP, third organization to be RO of IOMP [first was EFOMP, second was ALFIM]. AFOMP has widened its scope and today 19 countries national medical physicist Organizations (NMO) are members and 2 NMO's are affiliate members of AFOMP and represents over 11000 medical physicists from Asia-Oceania region.



Photo of founding members of AFOMP [28th May 2000, Beijing, China]



Photo of first AFOMP EC [25th July 2000, WC, Chicago, USA]



Photo of founding members of AFOMP and AFOMP EXCOM

AFOMP NATIONAL MEMBER ORGANIZATIONS IN 2020

S.No.	Country/NMO	Name of National Medical Organization	Establishment Year	Number of MPs/Members
1.	Australia	Australasian College of Physical Scientists and Engineers in Medicine (ACPSEM)	1977	500
2.	Bangladesh	Bangladesh Medical Physics Association (BMPA)	1998	100
3.	Peoples Rep. of China	Chinese Society of Medical Physics (CSMP)	1981	4000
4.	Hong Kong, China	Hong Kong Association of Medical Physics (HKAMP)	1985	130
5.	India	Association of Medical Physicists of India (AMPI)	1976	1600
6.	Indonesia	Indonesian Medical Physics and Biophysics Association (HFMBI)	1990	470
7.	Iran	Iranian Association of Medical Physicists (IAMP)	1993	300
8.	Japan	Japan Society of Medical Physics (JSMP)	1977	2000
9.	S. Korea	Korean Society of Medical Physics (KSMP)	1990	360
10.	Malaysia	Medical Physics Group of the Institute of Physics Malaysia	1991	275
11.	Mongolia	Mongolian Society of Medical Physics & Informatics (MSMPI)	2003	10
12.	Myanmar	Myanmar Medical Physicists Association	2016	30
13.	Nepal	Nepalese Association of Medical Physicists (NAMP)	2009	18
14.	New Zealand	Australasian College of Physical Scientists and Engineers in Medicine (ACPSEM)	1977	100
15.	Philippines	Philippine Organization of Medical Physicists (POMP)	1986	130
16.	Singapore	Society of Medical Physicists of Singapore	1998	65
17.	Republic of China, Taiwan	Chinese Society of Medical Physics, Taipei	1996	350
18.	Thailand	Thai Medical Physicist Society (TMPS)	2001	200
19.	Vietnam	Vietnam Association for Medical Physics (VAMP)	2008	155
AFOMP Affiliate National Member Organizations				
20.	Bangladesh	Bangladesh Medical Physics Society (BMPS)	2009	250
21.	Malaysia	Malaysian Association of Medical Physics(MAMP)	2000	75

The aims and purpose of the federation are

1. To promote the cooperation and communication between medical physics organizations in the region
2. To promote medical physics and related activities in the region
3. To promote the advancement in status and standard of practice of the medical physics profession
4. To organize and/or sponsor international conferences, regional and other meetings or courses;
5. To collaborate or affiliate with other scientific organizations

To fulfill the objectives and to cater to the needs of the medical physicists and their education, AFOMP has created five main following committees to work on number of important tasks.

1. Professional development committee (PDC)
2. Education and training Committee (ETC)
3. Scientific Committee (SC)
4. Awards and Honors Committee (AHC)
5. Funding Committee (FC)

These committees have drafted policy statements to deal with minimum level of education and training of medical physics, continuous professional development and career progression for clinical medical physicist in AFOMP countries. The PDC has brought of six policy statements which are approved by AFOMP council and they are

Policy Statement-1: The role, responsibilities and status of the clinical medical physicist in AFOMP

The document was developed by the AFOMP Professional Development Committee (PDC) and was approved and released by the AFOMP Council in 2006. The main purpose of the document is to give guidance to AFOMP member organizations on the role and responsibilities of clinical medical physicists. The document also provides definition of clinical medical physicist. Further this document discusses the following topics:

- Professional aspect of education and training
- Responsibilities of clinical medical physicist
- Status and organization of the clinical medical physics services
- The need for clinical medical physics services

Policy Statement 2: Recommended clinical radiation oncology medical physicist staffing level in AFOMP countries.

The document was developed by the AFOMP Professional Development Committee (PDC) and was released by the AFOMP Council in 2009. The main purpose of the document is to give guidance for minimum medical physicists required for providing medical physics services to a radiation oncology department. A calculation scheme is presented to estimating minimum medical physics staffing requirements that is primarily based on number of equipments, equipment levels & complexity of treatment and patient numbers in addition to allowances for staff training, professional development and leave requirements.

Policy statement 3: Recommendations for the education and training of medical physicists in AFOMP countries.

This policy statement prepared by joint efforts of PDC, ETC and Sc committee of AFOMP in 2011 and provides guidance for designing and developing medical physics education and training programs.

Policy statement 4: Recommendations for continuing professional development systems for medical physicists in AFOMP countries.

The document was developed by PDC and released by AFOMP in 2012. It provides guidance to member countries to develop a continuing professional development system for ensuring that the knowledge, skill and competency of clinical medical physicists are up to date so as to discharge the responsibilities effectively & efficiently.

Policy statement 5: Career progression for clinical medical physicists in AFOMP countries.

The document was developed PDC and released by AFOMP in 2015. It provides guidance on how clinical medical physicists' career should progress from their initial training as carrier progresses. It is intended to be advisory in nature and provides options for member countries and employers of clinical medical physicists to develop suitable carrier advancement structure.

Policy statement 6: Code of ethics for medical physicists in AFOMP countries.

Policy statement prepared by PDC and released by AFOMP in 2017 and provides guidelines on how medical physicists should conduct themselves in ethical manner and discharge the professional duties.

AFOMP works in many areas to enhance medical physics by organizing various scientific activities, conferences and officially publishes & endorses various journals & newsletter. Also promotes students & young professional through various grants.

One of the most important scientific events organized by AFOMP every year is Asia-Oceania congress of Medical Physics (AOCMP). This congress gives a strong platform to AFOMP region medical physics communities to unite, exchange their scientific research & expertise and discuss professional issues.

The AOCMP meetings organized at various places since 2001 are as follows

1. First AOCMP at Bangkok, Thailand, 2001
2. Second AOCMP at Gyeongju, S. Korea, 2002
3. Third AOCMP at Sydney, Australia, 2003
4. Fourth AOCMP at Kuala Lumpur, Malaysia, 2004
5. Fifth AOCMP at Kyoto, Japan, 2005
6. Sixth AOCMP at Seoul, S. Korea, 2006
7. Seventh AOCMP at Huangshan, China, 2007
8. Eight AOCMP at Ho Chi Minh City, Vietnam, 2008

9. Ninth AOCMP at Chiang Mai, Thailand, 2009
10. Tenth AOCMP at Taipei, Taiwan, 2010
11. Eleventh AOCMP at Fukuda, Japan, 2011
12. Twelfth AOCMP at Chiang Mai, Thailand, 2012
13. Thirteen AOCMP at Singapore, 2013
14. Fourteenth AOCMP at Ho Chi Min City, Vietnam, 2014
15. Fifteenth AOCMP at Xian, China, 2015
16. Sixteenth AOCMP at Bangkok, Thailand, 2016
17. Seventeenth AOCMP at Jaipur, India, 2017
18. Eighteenth AOCMP at Kuala Lumpur, Malaysia 2018
19. Nineteenth AOCMP at Perth, Australia, 2019
20. Twentieth AOCMP at Phuket, Thailand, 2020



Photo of valedictory function of 14th AOCMP- 2014, HCM City, Vietnam



Photo of IDMP2017 rally, Jaipur, India [7 Nov. 2017]

Since 2018 AFOMP has started Prof. Kiyonari Inamura Memorial AFOMP Oration

To recognize and appreciate the outstanding contribution of medical physicists from AFOMP region, an oration award in the name of Prof. Kiyonari Inamura has started by AFOMP since 2018. Prof. Kiyonari Inamura was one of the founders of and contributed significantly to the sustainable development of AFOMP. He served AFOMP at different capacities/positions over years. He was Professor emeritus at Osaka University and a longstanding member of CARS congress organizing committee and Deputy Editor of IJCARS. His pioneering contributions to medical physics and medical engineering include research and development in radiotherapy treatment planning systems, picture archiving and communication systems. It was always on the forefront of his ideology to educate and motivate the students to advance their understanding of medical physics. His

efforts in advancing interdisciplinary and international cooperation are unparalleled and his way of leading by example has been of great benefit not only to the medical physicists' community of AFOMP but also to the rest of the world.

The Prof. Kiyonari Inamura memorial AFOMP oration is awarded every year to outstanding medical physicists from AFOMP region for his/her contribution to medical physics education, research and development. Award is presented during AOCMP and awardee oration delivers an oration on first day of the conference.

Oration Awardee of 2018 – Prof. Tomas Kron, Australia

Oration Awardee of 2019- Prof. Kwan Hoong Ng, Malaysia

Oration Awardee of 2020- Prof. K. Y. Cheung, Hong Kong



Photo of Prof. Kiyonari Inamura Memorial AFOMP Oration 2019, Pert, Australia

AFOMP Life time achievement awards

To recognize contribution of medical physicists towards medical physics education, professional development and research, AFOMP has started the **AFOMP Life time achievement since 2020. This year’s awardees are Prof. Anchali Kisanachinda, Thailand and Dr. Donald Mclean, Australia.**

AFOMP Outstanding medical physicist award

On the occasion of 20th anniversary of Asia-Oceania Federation of Organizations for Medical Physics (AFOMP), AFOMP decided to recognize contribution of medical physicist from AFOMP region. Medical physicists who worked in the AFOMP region for last 20 years and put tremendous efforts for medical physics professional development, medical physics education and research, those who made significant impact on science and organized scientific activities in AFOMP region to disseminate scientific knowledge for the welfare of the profession and society, they have served in national medical physicist organization and AFOMP, have served their country, AFOMP region and the community, for those AFOMP introduced outstanding Medical Physicist Award. Twenty-one medical physicists from AFOMP NMO’s are awarded AFOMP outstanding medical physicist awards, the names of awardees available on AFOMP website [www.afomp.org-https://afomp.org/2020/09/14/afomps-outstanding-medical-physicist-awards/]

AFOMP Travel grants

To encourage and support young medical physicists with limited resources to participate in AOCMP, AFOMP provides about 8–10 travel grants every year. Over the years more than 100 young medical physicists from AFOMP region has received the travel grants. The list of travel grant awardees is available on AFOMP website [https://afomp.org/travel-awards/]. For encouraging research and presentation of their work, young medical physicists and students are awarded with cash prize for the selected best oral and poster presentations in each of the specialties of radiotherapy Medical Physics, Diagnostic Medical Physics and Nuclear medicine medical physics.

For widening the scope and recognize best research publication awards for research papers published in AFOMP journals every year, the award is started from 2020.

AFOMP publishes AFOMP newsletter regularly since 2007. The newsletter is published half yearly, in January and June. The newsletter is a mouthpiece of AFOMP and provides a platform for publishing medical physics science and research related articles, reports, educational material, scientific activities, workshop and conference related information.

For sustaining the professional organization and carrying out the activities in addition to the devoted and committed office bearers, members of various committees, we need the finances. To generate funds and create win-win situation with our trade partners, AFOMP has started corporate membership. A company, manufacturer or marketing agency connected with medical physics equipment, accessories or services can become a corporate member and gets benefit advertisement on AFOMP website, full page color advertisement in AFOMP newsletter and sharing of AOCMP delegate data as per rule for five years by paying US\$ 5000 once. As of now AFOMP has three corporate members and negotiations with others are going on.

1. PTW The Dosimetry Company, Freiburg, Germany
2. SUN Nuclear Corporation
3. Rosalina Instruments

Over last twenty years six executive committee of AFOMP under leadership of President has completed their terms and contributed greatly for making the AFOMP viable and vibrant federation. Past Presidents of AFOMP who along with their executive committee members, chairs of various committees and NMO’s have brought AFOMP to this level are

Period	President	Secretary General	Treasurer
2000 - 2003	Dr. Kin-Yin Cheung, Hong Kong	Dr. Akira Ito, Japan	Dr. Anchali Kisanachinda, Thailand
2003 - 2006	Dr. Barry Allen, Australia	Dr. Tae Suk Suh, S. Korea	Dr. Anchali Kisanachinda, Thailand
2006 - 2009	Dr. Kiyonari Inamura, Japan	Dr. Tae Suk Suh, S. Korea	Dr. Anchali Kisanachinda, Thailand
2009 – 2012	Dr. Kwan Hoong Ng, Malaysia	Dr. Tae Suk Suh, S. Korea	Dr. Anchali Kisanachinda, Thailand
2012 - 2015	Dr. Yimin Hu, China	Dr. Howell Round, New Zealand	Dr. Anchali Kisanachinda, Thailand
2015 - 2018	Dr. Tae Suk Suh, S. Korea	Dr. Howell Round, New Zealand	Dr. Kwan Hoong Ng, Malaysia



Past President, Immediate Past President, President and President designate [Photo taken during ICMP2019 at Santiago, Chile]

To increase the scientific and academic cooperation and collaboration among the regional organization for benefit of members of the federations, AFOMP took initiative and an agreement was signed between AFOMP and MEFOMP

on 12 December 2017. We hope that this will enhance exchange of experts, resources and sharing of knowledge for mutual benefit for all.



Photo of signing of agreement between AFOMP and MEFOMP- 12th December 2019 at IAEA HQ, Vienna, Austria

IOMP has provided valuable supports of various forms to AFOMP over the past twenty years. Likewise, AFOMP has participated and contributed to the work of IOMP and hosted World congress of Medical Physics and Biomedical Engineering [WC] on four occasions. Further, AFOMP medical physicists have served in various committees of IOMP, three of them served as IOMP Presidents and seven of them served as committee chairs. In addition AFOMP takes active participation in activities, programmes and initiatives of IOMP. Since the starting of IDMP in 2013, every year on 7th November AFOMP and its members celebrate IDMP to showcase the contribution of medical physicists. AFOMP actively contributed in developing theme and logo for IDMP. AFOMP participates and contribute in disseminating the IOMP publications such as eMPW, IOMP newsletter, circulars, information, notifications through AFOMP website and emails. The AFOMP website www.afomp.org is completely redesigned and launched in 2018 and is updated very frequently.

AFOMP countries have contributed to IOMP and hosted World Congress of Medical Physics and Biomedical Engineering [WC] and two are planned

- 5 th WC1991- Kyoto, Japan
- 9 th WC2003, Sydney, Australia
- 10 th WC 2006, Seoul, S. Korea
- 12 th WC 2012, Beijing, China
- 15 th WC 2022, Singapore
- 16 th WC2025, Adelaide, Australia

AFOMP members have provided good professional leadership and occupied position of President, Treasurer and Chairs of committees in IOMP

- IOMP Presidents from AFOMP
- 1991- 94 Dr. Udipi Madhvanath, India
- 2006- 09 Prof. Barry Allen, Australia
- 2012- 15 Prof. K.Y. Cheung, Hong Kong
- IOMP Treasurer from AFOMP**
- 2012- 15 Prof. Anchali Kisanachinda, Thailand
- 2015- 18 Prof. Anchali Kisanachinda, Thailand

Many Chairs of IOMP committees from AFOMP during last many years

AFOMP members' academic, scientific and professional contribution is recognized by IOMP in terms of bestowing many awards.

Fellow of IOMP was started in 2013 and since then many members from AFOMP are awarded FIOMP

In 2013

1. Prof. Barry Allen, Australia
2. Prof. K.Y. Cheung, Hong Kong
3. Prof. Kwan Hoong Ng, Malaysia

In 2015

1. Prof. Yimin Hu, China
2. Prof. Kiyonari Inamura, Japan
3. Prof. Anchali Kisanachinda, Thailand

In 2016

1. Prof. Tomas Kron, Australia
2. Prof. Tae Suk, S. Korea

In 2017

1. Dr. Agnette Peralta, Philippines

In 2018

1. Dr. Howell Round, New Zealand

IOMP Maria Sklodowska Curie award

2018 Prof. Kwan Hoong Ng, Malaysia

IOMP Harold John Medal

2018 Prof. Anchali Kisanachinda, Thailand

IOMP –IDMP awards started in 2015, since then many members from AFOMP are awarded IOMP-IDMP award

2015 – Prof. Tomas Kron, Australia

2016 - Prof. Arun Chougule, India

2017 Dr. Howell Round, New Zealand

2018 Prof. Hasin Anupama Azhari, Bangladesh

2019 Prof. Eva Bezak, Australia

2020 Prof. Tae Suk Suh, S. Korea

IUPAP Medal-2018- Dr. Kuo Men, China

Application of radiation in healthcare and journey medical physics in AFOMP region

Immediately after discovery of X-rays, the application in X-ray imaging started as early as 1896 in New Zealand & Australia, 1900 first X-ray machine came to India and in 1910 in Hong Kong, in 1913 in Singapore. The use of Radium 226 for cancer treatment started in India in 1913 when radium was brought in India for cancer treatment. Radiotherapy by started in India with a 200 kV, X-ray unit in 1924 and then started in 1930's in Australia, China, India, Hong Kong and Medical physicists got an appointment in 1934 India, 1935 in Australia, 1939 in Hong Kong, in 1940 in China [1]. With more and more cancer treatment centers started in this region a need for qualified medical physicists increased to fulfill the requirement the medical education programs started. In 1962, Directorate of Radiation Protection, Bhabha Atomic Center Mumbai started one year postgraduate diploma in radiological and Hospital Physics [Dip. R. P.] Course with help of WHO. In 1977 first M.Sc program started in Australia. Slowly and

steadily other countries in AFOMP region started use of radiation for cancer treatment and need of starting medical physics education program. Today over 101 institutes/Universities are offering masters in medical physics [MMP] program with intake of over 850 students per year. If we compare the data of Mclean et al [2], since 2013, in 7 years period the number of institutes imparting MMP has increased from 67 to 101 [increase of 51 %] and student intake capacity from 359 to 850 [increase of 137 %]. The details of MMP programs in AFOMP region is given in Table. For providing a platform to increase the cooperation and dissemination of knowledge a need for professional organization of medical physics was felt. Association of Medical physicists of India [AMPI] was formed in 1976 and today over 1600 medical physicists are active members of AMPI. In 1977 Australasian College of Physical Scientists and Engineers in Medicine [ACPSEM] and Japan Society of Medical physics [JSMP] were formed. Latest Myanmar Medical Physicists Association [MMPA] was established in 2016, making total 21 MP organizations in AFOMP.

However we need to harmonize and follow the basic minimum educational curriculum prepared by IAEA [3] and recommended by IOMP [4] for all its NMO's. The MMP program needs to be accredited however, only few programs are accredited by international external accreditation bodies like IOMP, IPEM, and CAMPEB. The present number of medical physicists [MP] in the region is around 11000 for a population of 4500 million, i.e. the medical physicists per million population is 2.4 which is much below the recommended number of medical physicists of 18 per million [5]. Further our study shows that 64.2 % MP work in radiotherapy and only 7.6 % work in radiology.

To be a Clinically Qualified Medical Physicists [CQMP] as per IAEA [6], after a MMP, two years full time residency in one of the speciality [Radiotherapy, Nuclear Medicine, Radiology] is essential. Few countries in AFOMP region mandates compulsory residency program to work as MP but many countries do not yet have the mandatory residency program. Further many countries mandatory services of MP in radiology are not specified and hence many countries have not employed any MP in radiology.

AFOMP Response to COVID19 situation

AFOMP immediately rose to the unprecedented situation due to COVID19 pandemic and acted upon within the available resources. AFOMP has created a COVID19 resource tab in AFOMP website and provided guidelines, information about COVID19. Further AFOMP brought out guidelines for Medical Physicists in radiation oncology and AFOMP guidelines on diagnostic radiology services [7]. To help the young medical physicists and medical physics students, AFOMP has started monthly virtual webinars by experts since June 2020 with free registration so that the education and training continues in absence of in person meeting due to COVID19 pandemic. The participants are provided with CPD certificate and 2 CME credit points each webinar accredited by ACPSEM accreditation board. Due to the pandemic International Medical Physics Week

[IMPW] was also celebrated by AFOMP by arranging two virtual webinars on 11 and 14 May 2020. IDMP2020 was also celebrated by AFOMP on 7 th November 2020 by arranging virtual webinar with talks from eminent speakers. The organizers of AOCMP2020 had very difficult time due to pandemic as initially they planned in person meeting but due to the situation now this meeting is being arranged as a hybrid meeting. The AFOMP EXCOM and council meetings are also planned virtually in this difficult situation.

Challenges and difficulties

In last 20 years, under the great visionary leaders and subsequent AFOMP officials efforts, the National Member Organisations [NMO's], AFOMP has done substantial progress towards fulfilling the objectives of AFOMP such as promoting medical physics, development of professional status and standards, education and training of physicists, scientific meetings and exchanges of resources in the region. AFOMP is playing a lead role in scientific and professional development of medical physics communities in Asia-Oceania region. Due to its continuous efforts in subsequent years surely the status of medical physics and physicist has increased but still there is long way to go ahead to reach its goals. ***In 2000 AFOMP had 12 members NMO's representing about 2500 medical physicists and about 25 MMP programs, in 20 years the number of NMO's is increased to 21 representing over 11000 medical physicists and 105 MMP programs which shows fourfold increment in number of medical physicists and MMP program in AFOMP region.***

If we look at socio-economic & educational status of AFOMP countries we found huge diversity in socioeconomic and educational levels and therefore task of AFOMP to homogenize the medical Physics education and profession is quite challenging.

AFOMP region hosts about 4.5 billion people [60 % of world population] in about 50 countries. We have national medical physics association in 19 countries only and therefore efforts needs to be put in creating and facilitating formation of medical physic associations and in those countries which are lacking in medical physics experts and a structured medical physics education program, efforts needs to be put by AFOMP to promote medical physics.

Further the AFOMP region is multilingual, multiple religious faiths and full of heterogenic in socioeconomic, educational, healthcare and research areas. Countries like Australia has highest GDP per capita of around 6000 US\$ whereas Nepal has 750 US\$ in the region. In AFOMP countries there is no binding force like European directives and therefore with huge diversity the task of AFOMP to homogenise the medical Physics education and profession is quite challenging.

In AFOMP countries there is no binding force like European directives. In Europe a decision taken at the level of European Union like the Euroatom directives becomes binding on all member states. All member

countries in European Union translate and implement the directives incorporating in national regulations. In absence of common union in Asia each country has developed Medical Physics education in its own way and there is no harmonization.

Medical physicists are health professionals and are in great need of close integration and cooperation. To be clinically qualified medical physicist needs knowledge of principals of physics applied to medicine, acquire sufficient practical experience, special talent and many years of work. However the role and importance of medical physicists is not rewarded or regarded in most of Asian countries by the health authorities and public it so deserves.

The present AFOMP executive members are

President : Dr. Arun Chougule, India
 Vice President : Dr. Eva Bezak, Australia
 Secretary General: Dr. Hasin Anupama Azhari, Bangladesh
 Treasurer: Dr. Kwan Hoong Ng, Malaysia
 Immediate past President: Dr. Tae Suk Suh, S. Korea
 Chair Science Committee [SC] : Dr. Tomas Kron, Australia
 Chair Education & Training Committee [ETC] : Dr. Jin Xiance, China
 Chair Professional Relations Committee [PRC] : Dr. Chai Hong Yeong, Malaysia
 Chair Finance Committee: Dr. Hajime Monzen, Japan
 Chair Honors and Awards Committee [AHC] : Dr. Eva Bezak, Australia

Only together can we solve our many problems and successfully protect our professional and social interests. This includes advanced training, prestigious status, and a decent salary, corresponding to the uniqueness, scarcity and responsibility of a medical physicist. We need effective and strong professional organization with remarkable leadership. Despite of all these efforts some areas still needs special attention, as some NMO's in AFOMP are still not participating in active manner as desired, do not maintain updated websites. This may be because of various challenges, which include absence of structured medical physics programs, lack of support from Institution/Govt., in-active national associations or lack of directional leadership. However development is always a gradual and slow process. So to achieve our goals we have to conquer all of these challenges and move forward with enthusiasm. Still we have to go a long way in fulfilling the aspirations of our members and rise to growing demand of skilled and knowledgeable MP's in the era of high tech healthcare delivery system and also to bridge the gaps. This is the great opportunity for whole community to celebrate the achievement so far and also pledge to work even harder with great enthusiasm for development of subject and medical physics profession in the region.

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Reference

1. Round WH, Jafari S, Kron T, Azhari HA et al Brief histories of medical physics in Asia-Oceania. *Australas Phys Eng Sci Med* (2015) 38:381–398
2. McLean D, Thomas B et al. Recommendations for accreditation and certification of medical physics education and clinical training programmes in the rca region 2014 https://humanhealth.iaea.org/HHW/MedicalPhysics/TheMedicalPhysicist/EducationandTrainingRequirements/Accreditation_and_Certification/Recommendations_for_accreditation_and_certification_in_medical_physics.pdf
3. IAEA : Postgraduate medical physics academic programmes- TRAINING COURSE SERIES No. 56, 2013
4. IOMP policy statement 2 [2010]: Basic Requirements for Education and Training of Medical

Physicists. https://www.iomp.org/wp-content/uploads/2019/02/iomp_policy_statement_no_2_0.pdf

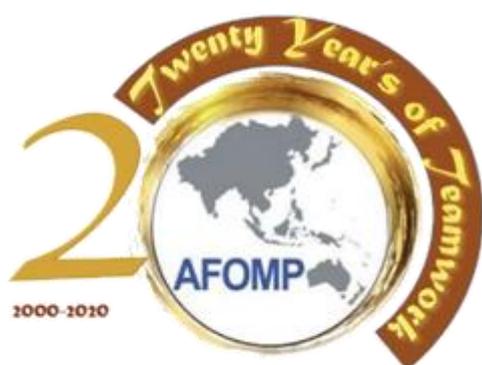
5. Evans S, Christofides S, Brambilla M. The European Federation of Organizations for Medical Physics. Policy Statement No. 7.1: The roles, responsibilities and status of the medical physicist including the criteria for the staffing levels in a Medical Physics Department approved by EFOMP Council. *Physica Medica*. 2016, 32, 533–540
6. IAEA. Roles and Responsibilities and Education and Training Requirements for Clinically Qualified Medical Physicists. *IAEA Human Health Series No. 25*. Vienna: IAEA; 2013.
7. AFOMP COVID19 resources. <https://afomp.org/covid-19-information-resources/>

Number of institutes/Universities offering master MMP program and number of students per year in AFOMP region

Country/NMO	Number of Institutes/ Universities offering masters MP program Present study	Number of students per year Present study	Number of Institutes/ Universities offering masters MP program Mclean D 2014	Number of students per year Mclean D 2014
Australia	06	30	05	50
Bangladesh	03	15	06	ND
Peoples Rep. of China	07	60	06	50
Hong Kong	01	15	--	--
India	22	250	17	178
Indonesia	06	30	01	10
Iran	14	235	--	--
Japan	22	70	16	20
S. Korea	05	20	08	ND
Malaysia	02	40	02	16
Mongolia	00	00	00	00
Myanmar	00	00	00	00
Nepal	00	00	00	00
New Zealand	01	10	01	10
Philippines	01	10	01	10
Singapore	00	00	00	00
Republic of China, Taiwan	03	35	--	--
Thailand	08	30	04	15
Vietnam	03	60 [B. Sc]	00	00
Total	101	850	67	359

Information about Medical Physics education program and associated details

Country/ NMO	MP Education duration	Masters Program	M.Sc degree Med Phys /other	Course accredited	Residency	Registration of MP
Australia	2 Years	Yes	MP	No	3 Years	Yes
Bangladesh	2 years	Yes	MP	No	No	No
China	2 years	M.Sc Post M.Sc Graduate	MP& E	No	No	No
India	2 years 1 year	Yes Post M.Sc	MP,P,RP	Yes	1 Year	No
Japan	2 years	Yes	Health Science Medical Science	Yes	No	Yes
Hong Kong	2 years	Yes	MP	No	No	Voluntary
Malaysia	2 years	Yes	MP	No	No	No
Indonesia	2 years	Yes	MP, P	No	2 Years	Yes
Iran	2 Years	Yes	MP	Yes	No	Yes
Taiwan	2 Years	Yes	MP,P	Yes	2 Years	Yes
Thailand	2 years	Yes	MP	Yes	2 Years	Yes
S. Korea	2 Years	Yes Post M.Sc	MPE, P	Yes	2 Years	Yes
Singapore	No	N/A	N/A	N/A	2 Years	No
Philippines	2 Yeas	Yes	MP	Yes	2 Years	Yes
Nepal	No	N/A	N/A	N/A	No	No
New Zealand	2 Years	M.Sc.	MP	Yes	3 Years	Yes
Myanmar	No	N/A	N/A	N/A	No	No
Mongolia	No	N/A	N/A	N/A	No	No
Vietnam	01 Year	Bachelor Last 01 year	Bachelor MP & P	No	No	No
Total	Y- 14 N-05			Yes-08	Yes-9 No- 10	Yes-09, Voluntary -01 No-9



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