

STATUS OF MEDICAL PHYSICS AND ACTIVITIES TO BOOST THE PROFESSIONAL DEVELOPMENT IN THE SEAFOMP REGION

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Abstract — The paper is part of the IOMP-IUPAP Workshop “MEDICAL PHYSICS PARTNERING WITH THE DEVELOPING WORLD” at the World Congress in Prague WC2018. The paper presents the status in the IOMP Regional Organization SEAFOMP (Southeast Asian Federation for Medical Physics).

Keywords— Medical Physics Professional Development, Medical Physics Education and Training.

I. INTRODUCTION

Association of South East Asian Nations, ASEAN, comprises of 10 nations located in Southeast Asia. The Association was formed on 8 August 1967 by its five original member countries, i.e. Indonesia, Malaysia, Philippines, Singapore and Thailand. Over the years, the organization grew when Brunei Darussalam joined in as the sixth member on 8 January 1984, Vietnam on 28 July 1995, Laos and Myanmar on 23 July 1997 and Cambodia on 30 April 1999. Its objectives include the acceleration of economic growth, social progress and cultural development among its members, as well as to promote regional peace. (ASEAN Secretariat, 2007). The map of ASEAN country members is displayed in Figure 1.

II. ESTABLISHMENT OF SEAFOMP

The idea of setting up an organization for South-east Asian medical physics societies was first mooted in 1996. During the World Congress of Medical Physics and Bio Medical Engineering in Nice, France, the formation of SEAFOMP (South East Asian Federation of Organizations for Medical Physics) was endorsed by member countries. SEAFOMP was officially accepted as a regional chapter of the IOMP at the World Congress in Chicago, USA, in 2000 with five member countries, Indonesia, Malaysia, Philippines, Singapore and Thailand. At that time, the founding members of SEAFOMP were Anchali Krisanachinda and Ratana Pirabul from Thailand, Kwan-Hoong Ng from Malaysia, Agnette Peralta from the Philippines, Djarwani S Soejoko from Indonesia and Toh-Jui Wong from Singapore.

Three other countries joined subsequently: Brunei (2002), Vietnam (2005) and Myanmar (2016).

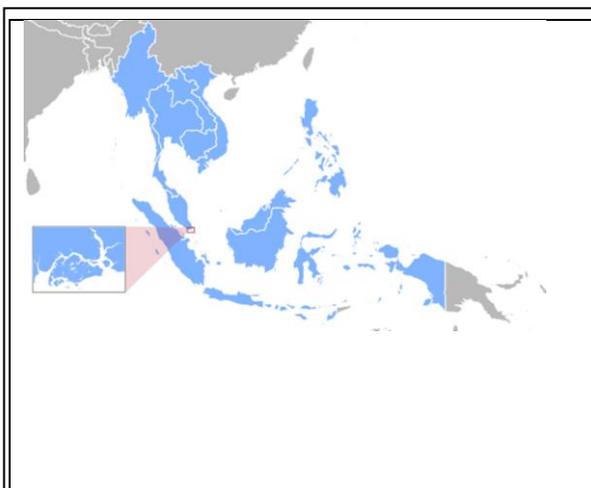


Figure 1: The Map of ASEAN Country Members



Figure 2: SEAFOMP Founders: Left-Right Anchali Krisanachinda (THA), Agnette Perata (PHI), Djarwani S. Soejoko (IDN), Makumkrong Poshychinda, Head of Department of Radiology, Ratana Pirabul (THA), Kwan Hoong Ng (MAL), Toh Jui Wong (SIN). Photo was taken at 2nd SEACOMP in Bangkok, Thailand.

The objectives of SEAFOMP are to promote (i) co-operation and communication between medical physics organizations in the region; (ii) medical physics and related activities in the region; (iii) the advancement in status and standard of practice of the medical physics profession; (iv) to organize and/or sponsor international and regional conferences, meetings or courses; (v) to collaborate or affiliate with other scientific organizations. SEAFOMP has a complementary and synergistic relationship with AFOMP in moving medical physics forward in the region. SEACOMP has initiated the tradition of awarding the best student presentation and this has stimulated much interest among the students. The students were given awards for best student presentations, both oral and poster, to encourage excellence in this field. Book prizes were generously donated by Medical Physics Publishing. The abstracts and full papers were published in Proceedings, in hard and soft copies, and distributed to all the participants.

III. MEDICAL PHYSICS EDUCATION AND CLINICAL TRAINING

Medical physics profession was first started in Thailand in 1959 while the medical physics education was started in 1972, followed by Philippines, Malaysia, Indonesia and Vietnam. The IAEA structured program on clinical training in radiation oncology was piloted in 2007 in Thailand. Diagnostic Radiology clinical training was started in 2008 in Philippines and Nuclear Medicine clinical training was started in Thailand in 2010. Those who successfully completed the program become Clinically Qualified Medical Physicist. In 2016, Thailand piloted the IAEA e-learning of medical physics clinical training in all 3 branches which the residents from Vietnam, Myanmar and Nepal could practice at their own department and obtain the on-line supervision from Thailand.

Table 1. SEACOMP - year of organize, city and country

No.	Year	City	Country	No.	Year	City	Country
1.	2001	Kuala Lumpur	Malaysia	2.	2003	Bangkok	Thailand
3.	2004	Kuala Lumpur	Malaysia	4.	2005	Jakarta	Indonesia
5.	2007	Manila	Philippines	6.	2008	Ho Chi Minh City	Vietnam
7.	2009	Chiang Mai	Thailand	8.	2010	Bandung	Indonesia
9.	2011	Bohol	Philippines	10.	2012	Chiang Mai	Thailand
11.	2013	Singapore	Singapore	12.	2014	Ho Chi Minh City	Vietnam
13.	2015	Yogyakarta	Indonesia	14.	2016	Bangkok	Thailand
15.	2017	Ilo Ilo	Philippines	16.	2018	Kuala Lumpur	Malaysia

Table 2: SEAFOMP country members with the details on population, the year on medical physics establishment, the number of medical physicists, the education and clinical training

Country	Population Million	Medical Physics		Medical Physics Education		Clinical Training
		Year	Number	M.S./M.Sc.	Ph.D.	
 Indonesia	265.316	2007	381	Available	Available	2016
 Thailand	69.182	1956	200	Available	Available	2007
 Malaysia	32.446	1960	308	Available	Available	2010
 Singapore	5.661	1953	49	Available	N/A	2013
 Philippines	107.018	1963	49	Available	N/A	2008
 Vietnam	94.575	1978	140	N/A	N/A	2016
 Myanmar	52.832	2003	34	N/A	N/A	2016
 Cambodia	16.253	2014	4	N/A	N/A	N/A
 Laos	6.777	2017	2	N/A	N/A	2018
 Brunei	0.343	N/A	8	N/A	N/A	N/A

AMPLE (Advance medical physics leaning environment) platform had been demonstrated and become available in all branches of medical physics in SEAFOMP country members. The activities are cooperated by national professional societies and university hospitals. The program was quite successful on the establishment of medical physicists with competency in Thailand, Philippines, Indonesia, Malaysia and Singapore. Myanmar, Laos and Malaysia obtained the on-line supervision from Thailand. Certification of medical physics will be available within a couple of years in south-east Asian region. The establishment of ASEAN College of Medical Physics, ACOMP, is well supported at the annual congress-SEACOMP which the venue of the College/Congress is rotating among SEAFOMP country members. 16 SEACOMP in conjunction with ACOMP, AOCMP and ICMP were organized from 2001 to 2018 at different cities and countries as in Table 1. Data about SEACOMP current members and education is given at Table2.

IV. ASEAN COLLEGE OF MEDICAL PHYSICS (ACOMP)

ACOMP was formed in October 2014 at the 12th SEACOMP at Cho Ray Hospital, Ho Chi Minh City, Vietnam (Figure 3).

The objectives of the ASEAN College of Medical Physics are

- To enhance the standard and quality of education and training of medical physicists,
- To provide continuing professional development (CPD) programmes, and
- To promote the continuing competence of medical physics practitioners.

Nine ACOMP were organized during 2015-2018

1. AAPM/IOMP/ISEP Imaging Physics Workshop Nov 11-14 2015 Kuala Lumpur, Malaysia
2. Workshop on Digital Radiography (13th SEACOMP) Dec 10 2015 Yogyakarta, Indonesia
3. Interventional Radiology: Safety, Optimization, Dosimetry & Quality Control Aug 5-6 2016 Kuala Lumpur, Malaysia
4. Workshop on Digital Radiography (ICMP 2016) Dec 11 2016 Bangkok, Thailand
5. Workshop on Monte Carlo Simulation of LINAC Head Modeling and Dose Calculation Jul 11-14 2017 Bandung, Indonesia
6. Radiofrequency Radiation Protection Dec 4 2017 Iloilo, Philippines
7. Radiation Dosimetry II:- Solid State and OSL Dosimetry: Physics & Applications, Dec 6 2017, Kuala Lumpur, Malaysia
8. UI/ISEP AAPM/ACOMP Imaging Physics Course, Oct 4-7 2018, Jakarta, Indonesia
9. Workshop on diagnostic radiology : Patient dose measurement and monitoring in diagnostic radiology, Nov 11, 2018, Kuala Lumpur, Malaysia

Planned activities for the near future of ACOMP are:

- School on Monte Carlo simulation
- School on advanced radiation dosimetry
- School on radiation emergency and disaster management
- Regional inter-comparison in radiation dosimetry



Figure 3: The Founders of ASEAN College of Medical Physics (AOCMP)
 Front row: Sivalee Suriyapee (THA), Anchali Krisanachinda (THA), Djarwani S.Soeharso (IDN), Agnette Peralta (PHI), Yeong Chai Hong (MAL)
 Back row: Nguyen Tan Chau (VIE), James Lee (SGP), KH Ng (MAL), Tran Ngoc Toan (VIE), Freddy Haryanto (IDN), Cao Huu Vinh (VIE) Supriyanto Pawiro (IDN) Marlon Raul Z. Tecson (PHI), CHHOM Sakborey (Cambodia)

International Advisory Board was set up in 2015 to support the ACOMP. The Board consists of:

Prof. Hilde Bosmans, Belgium; Dr. Kin Yin Cheung, Hong Kong; Prof. R Chhem, Cambodia; Prof. John Damilakis, Greece; Prof. Kunio Doi, Japan; Prof. Geoff Ibbott, USA; Prof. Willi Kalender, Germany; Prof. Tomas Kron, Australia; Prof. Anthony HL Liu, USA; Dr. Ahmed Meghzifene, IAEA; Prof. Fridtjof Nusslin, Germany; Prof. Madan Rehani, Austria/USA; Prof. Jean-Claude Rosenwald, France; Assoc. Prof. Howell Round, New Zealand; Prof. Tae-Suk Suh, South Korea; Prof. Slavik Tabakov, UK; Prof. Brian Thomas, Australia; Prof. David Townsend, Singapore; Prof. Raymond Wu, USA.

As SEAFOMP members have similar culture/tradition and the geographic boundary is opened, the cooperation among medical physicists in the region has been strengthening lately. With the IAEA support on education in medical physics to Cambodian and Lao at the Universities in Malaysia and Thailand, the medical physics profession has been started in both countries where radiation oncology and cancer centers were firstly established in Phnom Penh and Vientiane. In 2016, AMPLE (Advanced Medical Physics e-Learning Environment) platform is piloted in medical physics clinical training in the region. The problem on lacking of qualified medical physicists in radiation oncology and medical imaging in clinical training has been solved by sharing clinical supervisors in the region. The regular schedule is commonly planned for follow up on the

progress of residency training. Furthermore, SEAFOMP Executive Committee agreed to support Cambodia and Laos on the opportunity to participate SEACOMP annually. Such the activities in the region including ACOMP could improve the medical physics profession in SEAFOMP in terms of increasing number of medical physicists with competency and the clinical training of medical physicists are more uniform in the region where the facilities are available.

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