MEDICAL PHYSICS DEVELOPMENTS IN ASIA – OCEANIA FEDERATION OF ORGANIZATIONS FOR MEDICAL PHYSICS (AFOMP): 2000-2020

THAILAND

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I. Introduction and twenty years AFOMP

Thailand is situated in the South-East Asia, with the land area of 513, 120 Sq. meters and the population of 66,413,969 in 2018. The neighbors are People's Republic of China (PROC) in the north, Lao PDR, and Cambodia in the east, Malaysia in the south and Myanmar in the west. Kingdom of Thailand was established about 800 years ago. Thailand is a founding member of Association of South East Asian Nations (ASEAN). Medical Physics was started at Division of Radiotherapy, Department of Radiology, Siriraj Hospital, Mahidol University, Bangkok in the year 1964. Medical Physics education was started in the year 1974 after the author graduated from The University of London UK and worked at School of Medical Physics, Ramathibodi Hospital, Mahidol University. Currently, there are 6 M.Sc. Programs in Medical Physics and 1 Ph.D.Program in Medical Physics in Thailand. As AFOMP was formed during the World Congress of Medical Physics in Chicago in 2000, the author was one of the founding members together with Dr.K.Y.Cheung from Hong Kong, Prof.Barry A.Allen from Australia. Dr.KY Cheung was voted as the first AFOMP President and Prof. BA Allen was Vice President, the author was the first AFOMP Treasurer. The author had also proposed to host the first AFOMP Congress in Bangkok in 2001. At the AOCMP 2018 held in Kuala Lumpur, Malaysia, the author proposed to host the AOCMP 2020 in Phuket Thailand with the popular vote pouring to Thailand. During 20 years of AFOMP, Thailand has the great opportunities to organize another 3 congresses in 2009, 2012 in Chiang Mai and 2016 in Bangkok.

II. POPULATION AND GDP OF AFOMP COUNTRIES

Population of Thai people was 69,979,988 on June 1, 2020 estimated by the UN. GDP nominal per capita estimated in 2019 was USD 7,791. Number of Thai Medical Physicist was 450 results in 6.4 medical physicists per million populations.

COUNTRY	LAND AREA sq.km	GDP NOMINAL PER CAPITA(USD)	MP (2020)	POPULATION (M)	MP PER MILLION
THAILAND	513,120	7791	450	69.9	6.4

III. .Radiation medicine in AFOMP diagnostic radiology equipment in Thailand

COUNTRY	CT	FLU	MAMMO	DENTAL	GENERAL	MRI
THAILAND	1505	1846	456	8226	6422	208

RADIOTHERAPY EQUIPMENT

COUNTRY	EBRT	BRACHYTHERAPY	SIMULATOR
THAILAND	123	33	99

NUCLEAR MEDICINE EQUIPMENT

COUNTRY	SPECT	SPECT/CT	PET/CT	PET/MR	CYCLOTRON
THAILAND	24	31	15	1	6

IV. MEDICAL PHYSICISTS IN THAILAND

COUNTRY	DIAGNOSTIC RADIOLOGY	RADIATION ONCOLOGY	NUCLEAR MEDICINE
THAILAND	100	295	55

PROFESSIONAL SOCIETY DEVELOPMENT

COUNTRY	YEAR ESTABLISHED	FIRST PRESIDENT	PERCENT MALE	PERCENT FEMALE
THAILAND	2001	Dr.A.Krisanachinda	41	59

V. EDUCATIONAL DEVELOPMENT

COUNTRY	UNIVERSITY	CURRICULUM	ACADEMIC PROGRAM	YEAR ESTABLISHED	GRADUATE PER YEAR
THAILAND	MAHIDOL	MEDICAL PHYSICS	M.Sc.	1972	6
	MAHIDOL	MEDICAL PHYSICS	M.Sc.	1980	4
	CHIANG MAI	MEDICAL PHYSICS	M.Sc.	2001	6
	CHULALONGKORN	MEDICAL PHYSICS	M.Sc.	2002	6
	CHULALONGKORN	MEDICAL PHYSICS	Ph.D.	2015	-
	NARESUAN	MEDICAL PHYSICS	M.Sc.	2014	4
	CHULABHON ROYAL ACADEMY	MEDICAL PHYSICS	M.Sc.	2019	9

VI. CLINICAL TRAINING COURSE

COUNTRY	HOSPITAL	CURRICULUM	YEAR	RESIDENTS	NO. OF GRADUATES
THAILAND	KCMH	ROMP	2006-2008	10	8
	Siriraj				
	Ramathibodi				
	Chiang Mai				
THAILAND	KCMH	DRMP	2008-2010	5	4
	Bumrungrad				
	KCMH	NMMP	2011-2013	12	10
	Siriraj				
	Ramathibodi				
	Chiang Mai				
	KCMH	AMPLE RT DR	2016-2018	RT 15 DR4 NM3	14
	Siriraj	AMPLE RT NM			5
	Ramathibodi	AMPLE RT DR			3
	Chiang Mai	AMPLE RT NM			
	PSU	AMPLE RT			
	Chulabhorn	AMPLE RT			
	Pinlon	AMPLE RT			
MYANMAR	Yangon GH	AMPLE NM			
THAILAND	KCMH	AMPLE RT	2018-2020	RT 14 DR5 NM3	
	Siriraj	AMPLE RT			
	Ramathibodi	AMPLE RT			
	Chiang Mai	AMPLE RT			
	PSU	AMPLE RT DR NM			
	Chulabhorn	AMPLE RT			
	Udonthani	AMPLE RT			
	Suratthani	AMPLE RT			
Myanmar	Pinlon	AMPLE RT			
LaoPDR	Mittaphap	AMPLE RT			

VII. AFOMP CONFERENCES HOSTED IN THAILAND

COUNTRY	YEAR	2001	2009	2012	2016	2020
THAILAND	Conference Venue	BANGKOK	CHIANG MAI	CHIANG MAI	BANGKOK	PHUKET

VIII. IAEA REGIONAL PROJECTS

Thailand had participated an IAEA Regional Project RAS 6038 in Medical Physics Education and Clinical Training for Asia and Pacific region. Thailand was a pilot country trial an IAEA Training Course Series, TCS 37 on Radiation Oncology Medical Physics (ROMP) in 2006, TCS 47 Diagnostic Radiology Medical Physics (DRMP) in 2008 and TCS 50 Nuclear Medicine Medical Physics (NMMP) in 2011. In 2016, Thailand participated RAS 6077 "Strengthening the Effectiveness and Extent of Medical Physics Education and Training" and piloted Online clinical training IAEA AMPLE RT, DR and NM with 15 residents in RT- 2 residents from Myanmar shared Thai Clinical Supervisors, 5 residents in diagnostic radiology and 3 residents in nuclear medicine which one of them was a Myanmar resident working at Yangon General Hospital, sharing Thai clinical supervisor. Two year clinical training completed after the written exam arranged by

local assessors, the practical and oral assessments were conducted under IAEA Expert team for RT, DR and NM. Certification was offered to success residents at the Annual Meeting of TMPS. They became a clinically qualified medical physicist. The third clinical training program for medical physicists started in August 2018 with 14 residents AMPLE RT of 13 Thai and 1 Lao PDR residents, 5 DR and 3 NM with 2 Myanmar and 1 Thai residents. Final assessment for 14 RT will be arranged in November 2020 and the certification will be offered at AOCMP SEACOMP 2020 in Phuket Thailand.

IX. CONCLUSION

Even though the education of medical physicist is strengthened by several leading universities with full resources and the clinical training has been supported by IAEA since 2005 till now, Thailand struggled on the position of medical physicist in governmental hospitals as the Ministry of Public Health requires the professional license. Thai Medical Physicist Society took the major role in processing the Medical Physicist National License since 2008. Finally in September 2020 the Minister of Public Health signed for the approval of the National License of Medical Physicist and will be announced in the Royal Gazette of Thailand. Then the structure of medical physicist position will be allowed in the MOPH and Cancer centers. The problem on the lack of medical physicists at the MOPH could be solved in the next five years. This will be one pattern of the standard of medical physics profession taken care by the Department of National License of Thailand.

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XI. REFERENCES

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