



THAILAND'S COUNTRY REPORT STATUS OF RADIOTHERAPY IN THAILAND

23rd Ministerial Level Meeting of Forum for Nuclear Cooperation in Asia

31st October 2022, Ulaanbaatar, Mongolia

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Outline

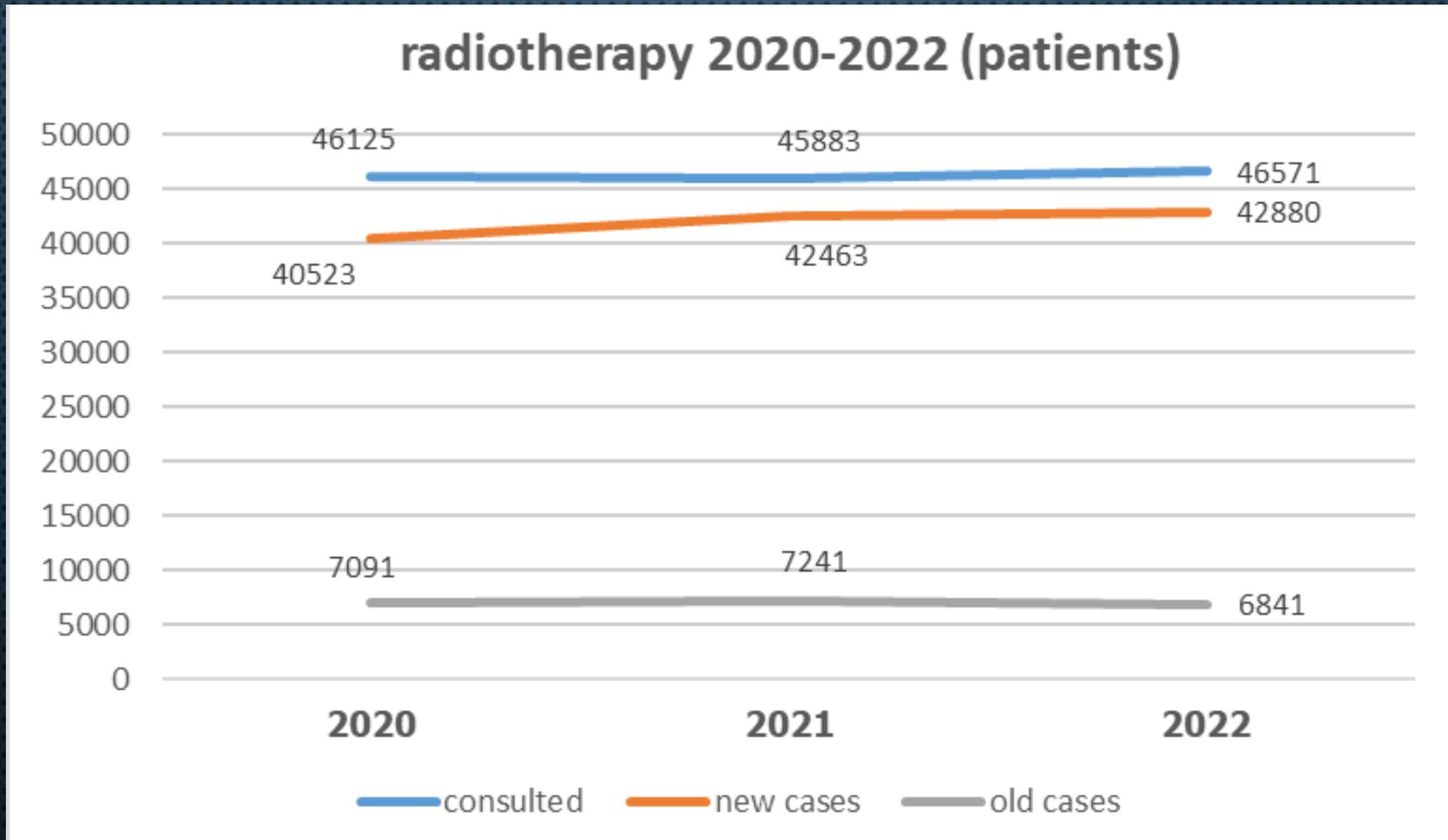
- **History of Radiotherapy in Thailand**
- **Current status of Radiotherapy:**
 - Patients and Services
 - Personnel
 - Equipment
 - Waiting time
- **Ongoing IAEA national projects regarding Radiotherapy**
- **Thai-QUATRO establishment**
- **Impact from FNCA study**
- **Policy**

History of Radiotherapy in Thailand

- **1935:** The first radiological therapeutic machine in Thailand, Kelleknett, 10 MA 230 KV, aerial type, motor rectification, began its commissioning and was used 846 times on 179 cancer patients.
- **1958:** The first Co-60, Model T-C0-400-1 from Soviet Union established at Chulalongkorn Hospital
- **1977:** The first Simulator, SHIMUSU installed at Siriraj Hospital
- **1992:** The first LINAC, Mitsubishi Photon Energy 6,10 MV and Electron Beam 6-15 MeV established
- **1997:** X-Knife installed at Ramathibodi Hospital
- **2002:** IMRT first treated at Siriraj Hospital
- **2009:** CyberKnife installed at Ramathibodi Hospital
- **2010:** VMAT first treated at Chulalongkorn Hospital
- **2011:** First MRI simulator at Chulalongkorn Hospital

Current status of Radiotherapy: Patients

Number of patients receiving services from 2020-2022

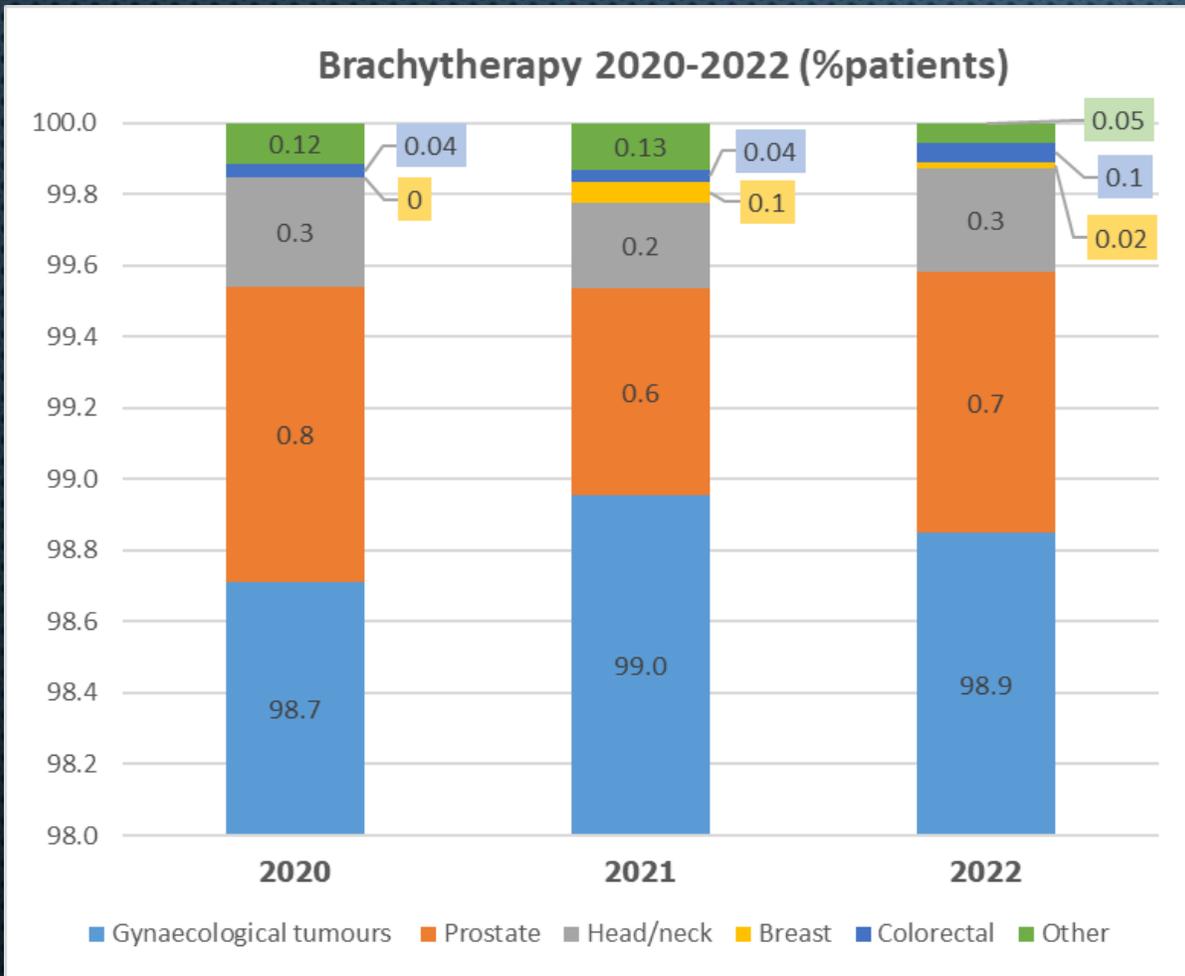


Data collected from Thai Association of Radiation Oncology

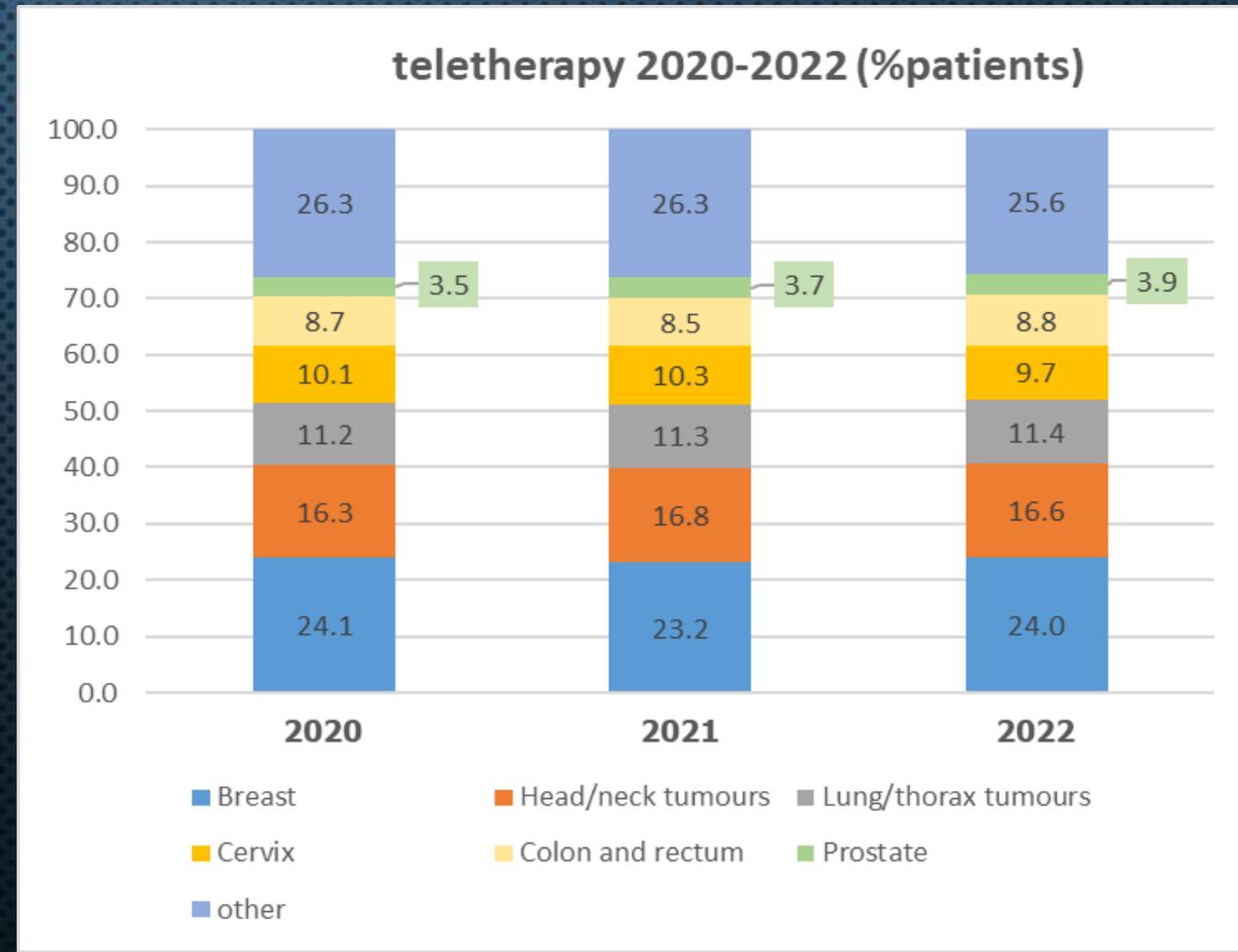
Current status of Radiotherapy: Patients

Number of patients receiving cancer treatment from 2020-2022

Brachytherapy patients

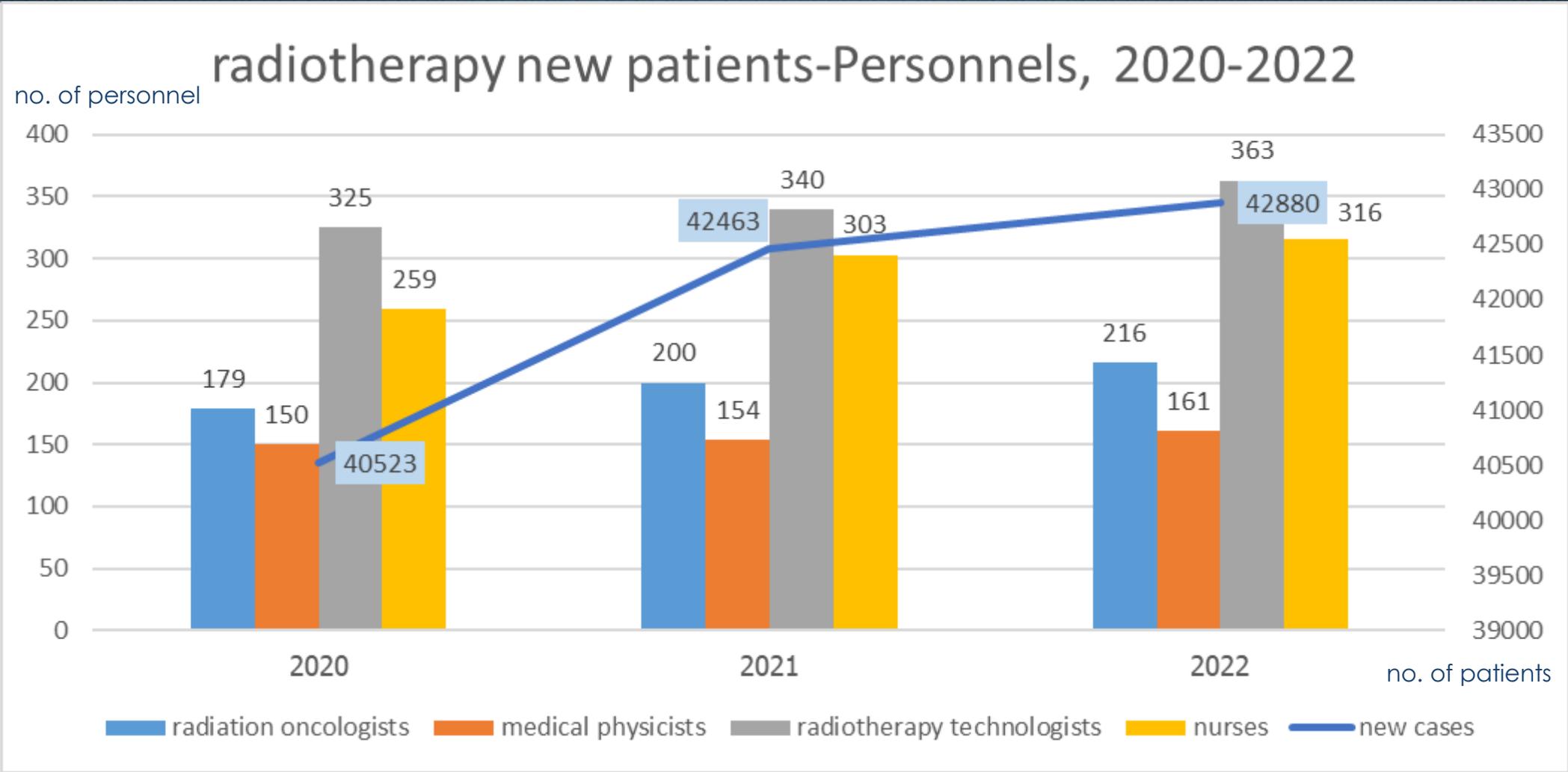


Teletherapy patients



Current status of Radiotherapy: Personnel

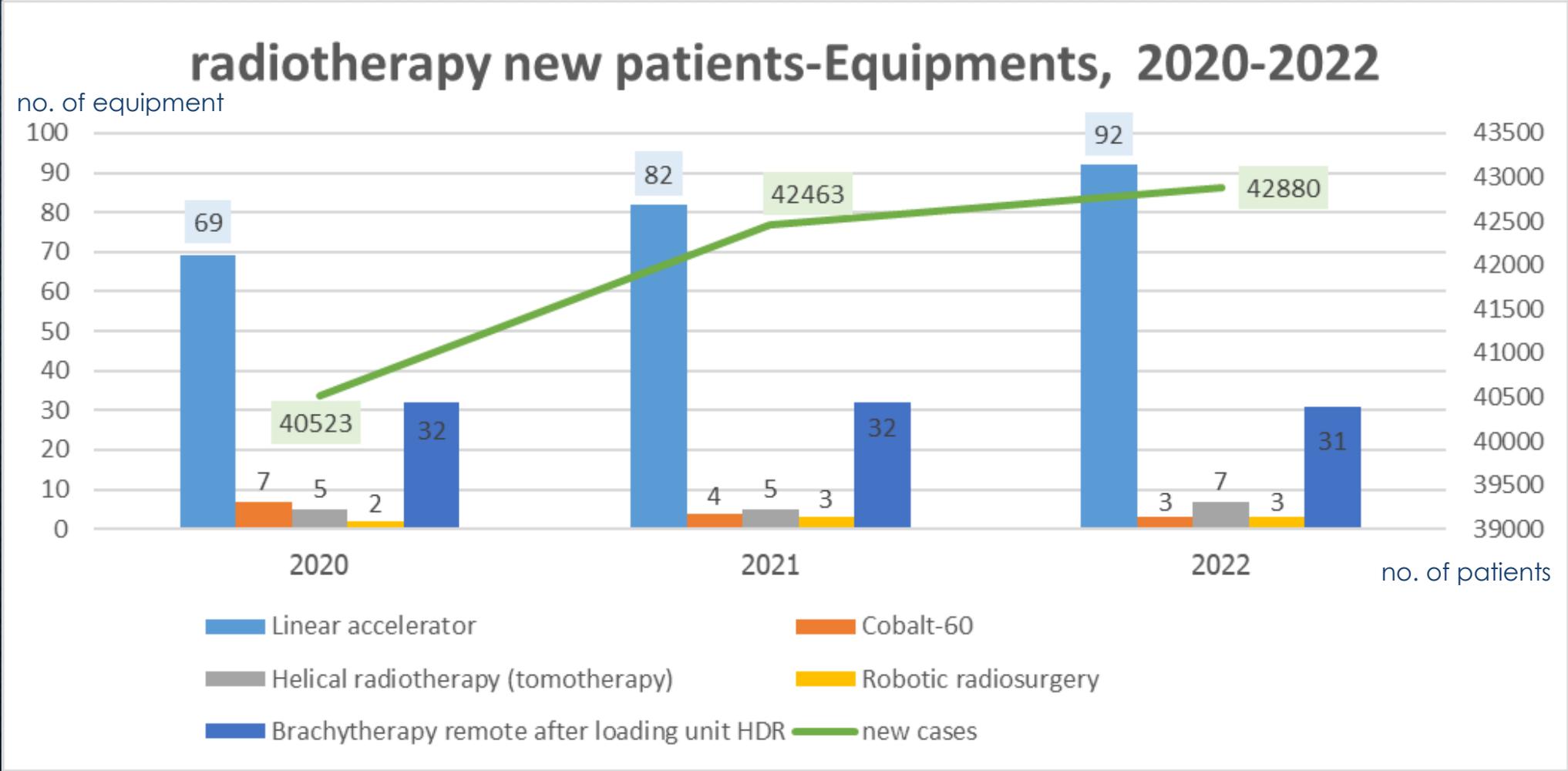
Radiotherapy new patients – personnel for 2020-2022



Data collected from Thai Association of Radiation Oncology

Current status of Radiotherapy: Equipment

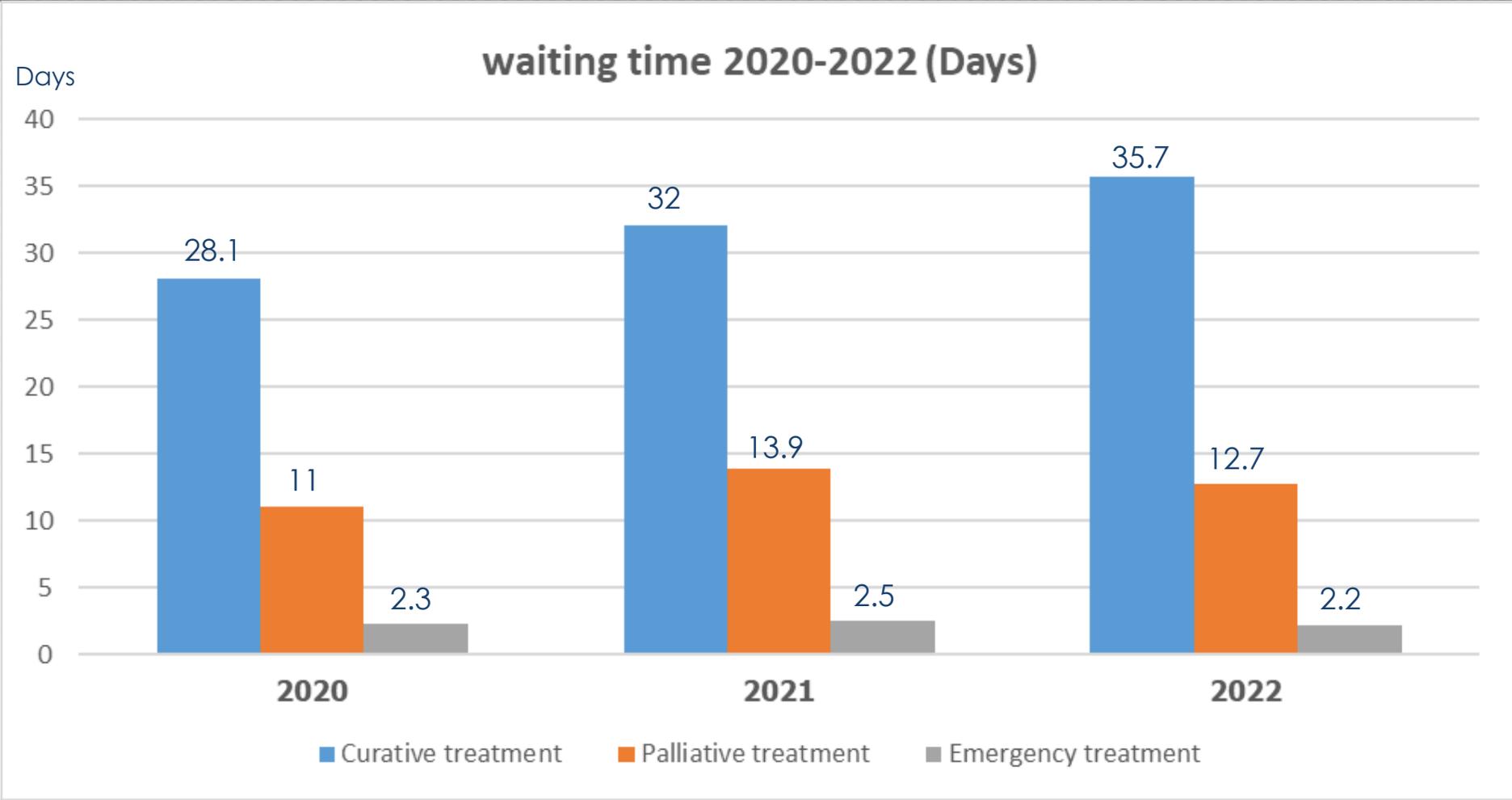
Radiotherapy Equipment from 2020-2022



Data collected from Thai Association of Radiation Oncology

Current status of Radiotherapy: Waiting time

Waiting time for treatments



Data collected from Thai Association of Radiation Oncology

Ongoing IAEA TC national projects

1. THA6040 Developing Human Resources for the National Proton Therapy Centre in Thailand (2016)

Objective: To provide state-of-the-art proton therapy services for cancer patients as well as to facilitate applied research and academic activities on proton therapy, aimed at improving therapeutic outcomes and a better quality of life for cancer patients

Counterparts: Chulabhorn Hospital, Chulalongkorn Hospital



Ongoing IAEA TC national projects

2. THA6043 Enhancing Capacities in Diagnostic Radiology, Nuclear Medicine and Radiotherapy (2018)

Objective: To provide standard healthcare and safety in the field of diagnostic radiology, nuclear medicine and radiation oncology in in the country and build capacity to be a training centre in South-East Asia

Counterparts: Chulabhorn Hospital, Siriraj Hospital, Ramathibodi Hospital

The project focuses on the establishment of Thai national auditing systems for radiotherapy, diagnostic radiology and nuclear medicine.

3. THA6045 Advancing National Capacity in Diagnostic Radiology, Nuclear Medicine, and Radiotherapy (2022)

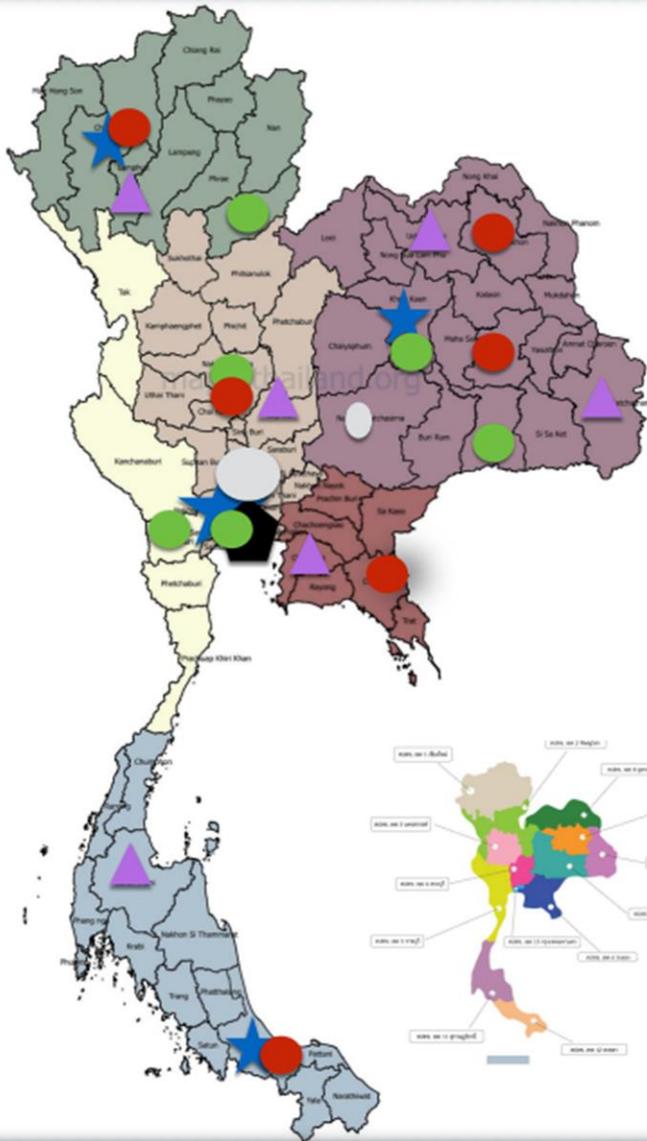
Objective: To enhance the standards in radiation medicine of which quality can be effectively assured through newly established comprehensive auditing programmes.

Counterparts: Chulabhorn Hospital, Siriraj Hospital, Ramathibodi Hospital, Chulalongkorn Hospital (follow-up project of THA6043)

Thai-QUATRO Establishment: Background

- **QUATRO = Quality Assurance Team for Radiation Oncology**
- **Thai-QUATRO aims to:**
 - standardize radiation treatment in Thailand;
 - support peer review for quality improvement of Radiation Oncology centers; and
 - Help small to moderate Radiation Therapy centers in Thailand to enhance their capabilities in treating cancer patients
- More trainings for the radiotherapy personnel in these high technology treatments needed
- Primary project aiming to continually maintain the national auditing system of radiotherapy treatment established in overall Radiotherapy facilities in Thailand in order to standardize and keep quality control of radiotherapy facilities and ensure safety treatments for the patients
- Secondary project aiming to improve and enhance capability of Radiation Oncology teams especially Radiation Therapy Technologists (RTTs) in Thailand

Thai-QUATRO Establishment: Background



2010: 26 Radiation Therapy Facilities



University Hospital



Government Cancer Center



Radiation Oncology Facility in Government Hospital



Private Hospital

2016: 33 Radiation Therapy Facilities



7 new Radiation Therapy Facilities

2020: 6 more Radiation Therapy Facilities



Proposed location

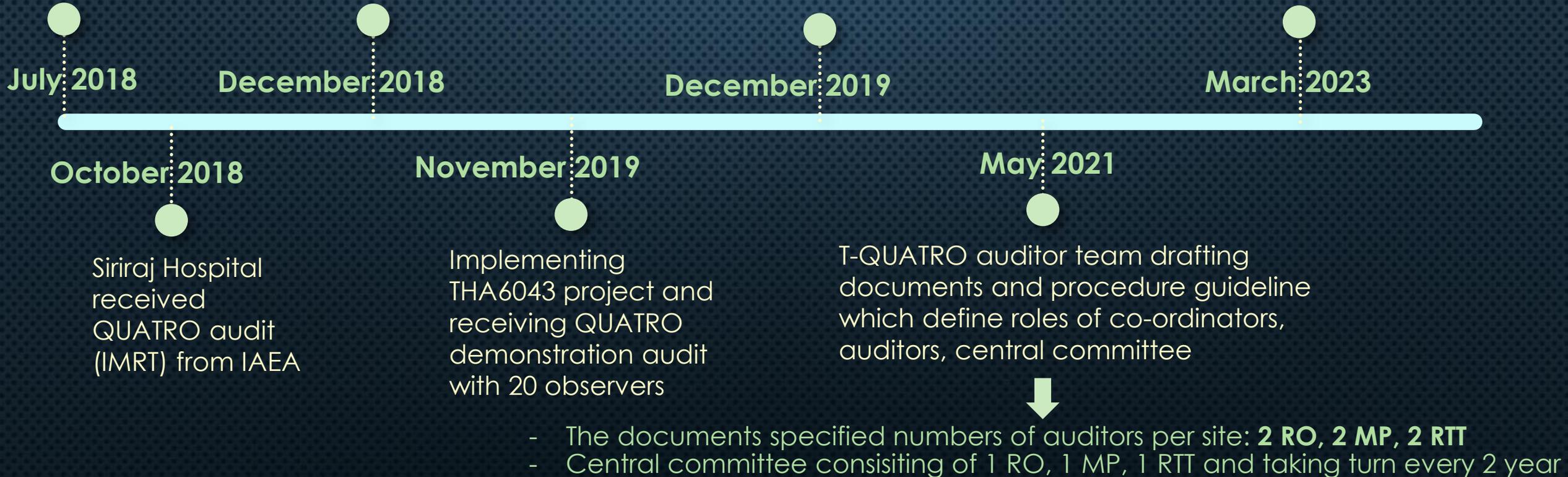
Thai-QUATRO Establishment: Timeline

Introduction of QUATRO to every Radiation Oncology center in Thailand by Thai Association of Radiation Oncology

IAEA QUATRO team, Radiation Oncologist (RO), Medical Physicist (MP) and Radiation Therapy Technologist (RTT) providing auditors' training in Thailand

Department of Medical Services launching the policy requiring all cancer centers are responsible for completing QUATRO audit within 2021 (only 9 Radiation Oncology Facilities applied)

2 Radiation Oncology Facilities planned for request of T-QUATRO audit



Thai-QUATRO Establishment

December 2018: IAEA QUATRO team, Radiation Oncologist (RO), Medical Physicist (MP) and Radiation Therapy Technologist (RTT) providing auditors' training in Thailand



Thai-QUATRO Establishment



- All stakeholders recognize and involve in Thai-QUATRO
- Potential Thai Auditors:
 - **10 RO**
 - **15 MP**
 - **10 RTT**

Thai QUATRO Establishment

Counterparts



Thai Association of Radiation Oncology



Thai Medical Physicist Society



Department of Medical Sciences



Thai Society of Radiological Technologists

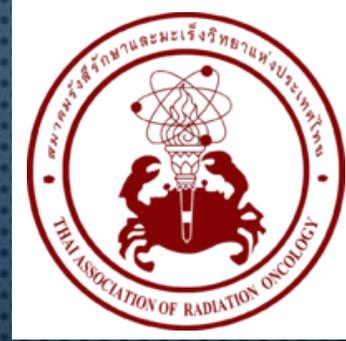


Department of Medical Services



Office of Atoms for Peace

Auditors



Thai Association of Radiation Oncology



Thai Medical Physicist Society



Thai Society of Radiological Technologists

Coordinator



Thai Association of Radiation Oncology

Impact from FNCA study

The study enhances national capabilities in treating **Cervical cancer**, **Nasopharyngeal carcinoma**, and **Breast cancer** patients

- The study helps improve standardization of radiotherapy and chemoradiotherapy e.g. dose, fractionation, type of chemotherapy and dose, and increase treatment option for patients with high risk for distant metastases in cases of Cervical cancer and Nasopharyngeal carcinoma
- Also, it improves standardization of radiotherapy in Breast cancer, and intracavitary radiotherapy in Cervical cancer, e.g. how to select cases, dose and fractionation and how to evaluate plan and confirmatory results benchmark with international level

Policy

In line with the SDG 3 on Good health and well-being, **the 20-year national strategic plan for public health (2017-2036)** aims to reduce premature death from Non-Communicable Diseases (NCDs), which is a leading health issue around the world, and emphasizes the development of healthcare systems including on cancer.

Development of healthcare system on Cancer

Objective:

- To reduce morbidity rate and mortality rate associated with cancer;
- To prevent health facilities from being overwhelmed by cancer patients; and
- To reduce waiting time for cancer patients to receive treatment and care services.

20-year goal:

- Mortality rate due to all types of cancer is reduced by five percent.

National Policy and Strategy on the Development of Nuclear Energy (2017-2026)

The Policy is established as a framework aiming to support the use of nuclear technology to contribute to the sustainability of economic and social development and to increase competitiveness in many areas—**medicine**, agriculture, energy, research and development, environment, and security.

THANK YOU

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