GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
LOK SABHA
UNSTARRED QUESTION NO.3857
TO BE ANSWERED ON 11.08.2021

Research in Field of Medicine

3857. SHRI ANUBHAV MOHANTY:

Will the PRIME MINISTER be pleased to state:

(a) whether the Government has taken any steps/measures to explore/expand, research in the medical application of nuclear-powered equipment for advancement in the field of medicine;

(b) if so, the details thereof; and

(c) whether the Government proposes to establish the research institutes for such purposes and if so, the details thereof, location-wise?

ANSWER

THE MINISTER OF STATE FOR PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH):

(a)&(b)Research and development work carried out by the Department in field of medicine is mentioned below:

(i) Developed Proton Beam Therapy at Tata Memorial Centre (TMC), Mumbai which is a highly advanced method of delivering Radiation Therapy treatment to patients with cancer.

(ii) Bhabhatron an indigenous tele-cobalt machine with High Source Capacity of 250 RMM (Roentogen/min. at 1 meter) has been developed by Bhabha Atomic Research Centre, Mumbai for treatment of cancer.

(iii) Developed High Dose Radiation (HDR) source for Brachytherapy Machine at Board of Radiation & Isotope Technology, Navi Mumbai, used for internal therapy of various types of cancers.

(iv) Radio-isotopes Copper-64(64Cu), Yttrium-90(90Y), Molybdenum (99Mo), Samarium-153(153Sm), Cobalt-60 and Lutetium-177(177Lu) are produced through processing after irradiation in research reactors for applications in medicine and research. Nuclear Medicine uses radioactive isotopes (radio-isotopes) for the non-invasive diagnosis of several human diseases, including cardiology, oncology (cancer), neurology, psychiatry and infectious diseases and for the treatment of thyrotoxicosis, thyroid cancer, neuroendocrine tumours, neural crest tumours, bone-pain palliation etc.

(v) Radio-isotopes Ceasium-137, Stronium-90 and Ruthenium-106 are recovered from radioactive waste after extensive R&D. Ceasium-137, Yttrium-90 generated from Stronium-90 and Ruthenium-106 are deployed for blood irradiation, radiotherapy and eye cancer treatment respectively.

(c) The Radiation Medicine Centre (RMC), Mumbai is in forefront of practicing Nuclear Medicine for health care. It contributes to patient service, teaching and research in nuclear medicine. Several thousand patients are referred to RMC each year. The cost to the patient is the lowest, compared to any other nuclear medicine centre in India. RMC has the largest registry in India for radio-isotope therapy for thyroid cancer and neuroendocrine tumours. In addition to above, Radiation Medicine Centre is under advanced stage of construction at Rajarhat, Kolkata for strengthening and providing nuclear medicine services in Eastern and North Eastern States.

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