

AbstractID: 7899 Title: Magnitude of Medical Radiation Exposures to US population: Preliminary results from NCRP Scientific Committee 6-2

National Council of Radiation of Protection formed *Scientific Committee 6.2* to work on the estimation of radiation exposure to the US population from all sources. The intended goal of the Committee is to update the NCRP report 93 published in 1987. One sub group of the sub committee was assigned with the medical exposure. The medical sub committee comprised of medical physicists, physicians, and other health physics experts.

The subcommittee examined variety of data sources including commercial surveys, Medicare, Veterans Administration and insurance carrier data. Radiation exposure to the US population from medical exposures was then estimated based on the number of medical procedures grouped by modality and body parts and the radiation doses associated with each procedure. The modality groups were CT, nuclear medicine, radiography, general and interventional fluoroscopy, dental radiography, bone-densitometry and radiation therapy.

According to the preliminary results, the medical radiation exposure to US population has increased by nearly 6 times compared to the previous NCRP publication (NCRP 93). The conventional pie-chart indicating 3 mSv from background radiation and 0.6 mSv from man-made (medical) exposure will undergo major shape change as these preliminary results are finalized. The largest contributor to the collective dose to US population is seen with CT and Nuclear Medicine. CT scanning has increased nearly 10-11% annually in the US in the past two decade. The number of CT procedures has increased from 3 million CT scans in 1980 to more than 62 million CT scans in 2006. Similarly, the nuclear cardiac procedures have increased significantly in the last two decades.

The purpose of this talk is to provide an update on the results from the medical patient exposure subcommittee and to discuss the details on how the results were derived.

Learning Objectives:

1. To learn about the magnitude of medical radiation exposure to US population.
2. To familiarize with the types and distribution of medical imaging procedures in US.
3. To understand methods used in computing the radiation exposures to US population.