AbstractID: 9863 Title: Magnitude of Medical Radiation Exposures to US Population with Focus on CT and Nuclear Medicine Doses

This presentation will examine the current trends in medical x-ray imaging procedures in the United States. It will also examine the magnitude of radiation doses for various x-ray imaging procedures. Special emphasis will be given to CT and nuclear medicine procedures.

The results are based on the work done within the framework of National Council of Radiation of Protection Scientific Committee 6.2 formed 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. 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.

According to the preliminary results, the medical radiation exposure to US population has increased by nearly 5.5 times compared to the previous NCRP publication (NCRP 93). The largest contributor to the collective dose to US population is seen with CT and Nuclear Medicine procedures. It is found that the CT procedures accounts for 14% of all medical x-ray imaging procedures but contribute to nearly 49% of collective dose to US population. Similarly, the nuclear medicine procedure accounts to only 4% of all procedures but contribute to nearly 26% of collective dose to US population.

Learning Objectives:

1. To familiarize with the types and distribution of medical imaging procedures in US.
2. To learn the magnitude of medical radiation exposure to US population.
3. To examine the magnitude and distribution of procedures and doses from CT.