

AbstractID: 11121 Title: Survey of MSCT and SSCT scanners in Taiwan: Technical factors, CTDIs, and Effective Doses

**Purpose:** To assess the current level of radiation dose from computed tomography scanning in Taiwan. **Method and Materials:** The dose characteristics of CT scanners were investigated on the basis of questionnaires in Taiwan. The information included scanner model and manufacturer, the scanning parameters of the most frequent five adult standard CT examinations. Radiation doses were estimated in terms of computerized tomography dose index (CTDI), dose length product (DLP), and effective dose ( $E$ ) using the software from the ImPACT website and the Monte Carlo simulation data from National Radiation Protection Board's SR 250 report. **Results:** Responses were received from 231 of 409 questionnaires (56%). They included 49 % MSCT and 51 % SSCT. The mean CTDI<sub>w</sub>, DLP, and effective dose for the head and body region ranged from  $16 \pm 9$  to  $52 \pm 21$  mGy,  $418 \pm 301$  to  $746 \pm 427$  mGy cm and  $1.6 \pm 0.9$  to  $10.8 \pm 9.6$  mSv, respectively. On average, the CTDI<sub>w</sub> and DLP are lower than the values recommended by European Commission. The tube current is the most variable parameter. The tube current for MSCT (229~309 mA) are higher than those for SSCT (176~191 mA). The DLP and effective dose for MSCT are 19~68 % and 28~67 % greater than those for SSCT. Comparing with other countries' survey results during the past ten years, the doses in Taiwan are lower than those in the U.S., but roughly higher than those in U.K. and Germany. **Conclusion:** This national CT dose survey provided a wealth and updated data. The results revealed the MSCT scanners have great possibility to become the majority in Taiwan, and the dose contributions from MSCT at the same scanning procedure are higher than those from SSCT.