Purpose:To document the use of CT imaging in adult patients for a typical day in the Radiology department at the Medical University of South Carolina, and estimate the corresponding patient effective doses and use of iodinated contrast.

Method:We reviewed the dose summary sheets of all adult patients who underwent CT examinations on six scanners installed at MUSC on one day (13 September 2010). We obtained the total Dose Length Product (DLP), and computed the corresponding DLP weighted average CTDIvol. Dosimetry data for head and neck CT scans pertain to a 16 cm dosimetry phantom and for body scans pertain to a 32 cm dosimetry phantom. Estimates of the effective doses (E) based on ICRP 103 weighting factors were obtained using nominal E/DLP conversion factors (~ 3 μSv/mGy-cm in head/neck; ~ 18 μSv/mGy-cm in body). Also recorded was whether iodinated contrast was used each patient examination.

Results:A total of 120 adult patients underwent CT examinations with a mean age of 51± 17 years. Overall, 30% of the patient examinations involved the head and neck, with a mean CTDIvol of 62 ± 33 mGy and a mean DLP of 1490 ± 1000 mGy-cm. The remaining 70% were body examinations with a mean CTDIvol 19 ± 11 mGy and a mean DLP of 990 ± 710 mGy-cm. A total of 46% of patients were scanned with no iodinated contrast, 33% had contrast, and the remaining 21% had scans performed both with and without contrast.

Conclusions:Adult patients undergoing CT examinations have effective doses of the order of 4 mSv for head and neck CT examinations, and of the order of 15 mSv for body examinations, and with slightly more than half receiving iodinated contrast.