

## Survey of DLP (Dose-Length Product) from Computed Tomography Examination in Srinakarind Hospital

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**Background and Objective:** Computed tomography (CT) is an imaging procedure that uses a special x-ray equipment to create detailed pictures, or scans, of areas inside the body. Although CT is essentially useful in diagnosis, potential cancer risks exist from associated with ionizing radiation. The purpose of this study was to assess the radiation dose in the three most common examinations of diagnostic CT studies which were brain, chest and abdomen performed at Srinakarind hospital.

**Method:** This study was approved by the Human Ethics Committee of Khon Kaen University (HE571239). A retrospective cross-sectional study of radiation dose of 1,200 patients were collected between February to April 2014. The CTDI volume (CTDI<sub>vol</sub>), dose length product (DLP), kV and mAs were recorded. The effective dose of each patient was calculated.

**Results:** These three study types were approximately 70% of the total CT examinations. Radiation doses varied significantly between the different types of CT studies.

The recorded mean and SD of DLP from head, chest and abdomen CT scans were 689.86±246.57, 440.97±219.19 and 767.83±253.46. The calculated mean and SD of effective doses from head, chest and abdomen CT scan were 1.5±0.9, 7.5±3.7, and 11.5±3.8 millisieverts (mSv), respectively.

**Conclusion:** Radiation dose from CT scans of the brain, chest, or abdomen were varied depending on an individual patient and the exposure technique. Both CTDI<sub>vol</sub> and DLP values were displayed after the scan simultaneously. While the effective dose for each organ is related to the amount of radiation received by the patient. Understanding exposures and radiation dose parameters from actual clinical studies is a crucial first step toward to develop reasonable strategies to minimize unnecessary radiation exposures.

**Keyword:** Computed tomography, dose length product (DLP), radiation dose

