

ABSTRACT**The Determination of Diagnostic Reference Level (DRL) and Study of Exposure Parameters Selection on Abdominal CT Scan In RSUD Dr. Soetomo**Naily Zulfatul Jannah¹Risalatul Latifah, S.Si., M.Si²Budi Prijo W, S.ST., MM³

CT Scan Service in RSUD Dr. Soetomo has been started since 1987. But until now (2018) there has been no reference to provide radiation doses in accordance with the diagnostic. Administration of excessive or inappropriate radiation doses will provide both stochastic and deterministic effects. These effects have been of particular concern in the last decade on patient safety in radiology. Given the CT Scan is a widely used modality and provides a large radiation dose. Therefore this research is done for dose management effort which can be used as radiation protection optimization tool that is by determining Diagnostic Reference Level (DRL) on CT scan abdomen. This research had been conducted to get DRL for CT scan abdomen by taking data on 4 CT Scan tools owned by RSUD Dr. Soetomo. The sample in this research was CT Scan Abdomen in RSUD Dr. Soetomo started from July to December 2017. The data taken were kVp, mAs, scan length, rotation time, pitch, media contrast, image acquisition, number of phase iterative reconstruction, CTDI_{vol} and DLP.

DRL on CT Scan abdomen with contrast on Siemens 16 slices for adult patients were CTDI_{vol} 6.59 mGy and DLP 1355,13 mGy.cm, for pediatric patients were CTDI_{vol} 5.35 mGy and DLP 855,57 mGy.cm. DRL CT Scan Toshiba 128 slices for pediatric patients were CTDI_{vol} 1.54 mGy and DLP 654,5 mGy.cm. However, for adult patients were CTDI_{vol} 3.10 mGy and DLP 1421,7 mGy.cm. DRL CT Scan abdomen for GE 64 slices in pediatric patients were CTDI_{vol} 5.03 mGy and DLP 367,57 mGy.cm, while for adult patients were CTDI_{vol} 13.45 mGy and DLP 2307.03 mGy.cm. DRL CT Scan abdomen without contrast on Siemens 16 slices for adult patients were CTDI_{vol} 4.18 mGy and DLP 186,16 mGy.cm. DRL CT Scan Toshiba 128 slices for pediatric patients were CTDI_{vol} 1,06 mGy and DLP 283,9 mGy.cm, while for adult patients were CTDI_{vol} 1.09 mGy and DLP 496.12 mGy.cm. DRL CT Scan abdomen for GE 64 slices for adult patients were CTDI_{vol} 13.41 mGy and DLP 747.76 mGy.cm. In Siemens CT Scan 16 slices and GE 64 slices for pediatric patients, the value of DRL had not been determined because when collected the data in July to December 2017, the researcher did not get any examination data of CT scan abdomen without contrast.

Keywords: DRL, CT Abdomen Scan