

COMPUTED TOMOGRAPHY RADIATION DOSE IN A REGIONAL SURVEY

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Purpose

- To evaluate the patient dose in computed tomography (CT) examinations and contribute to the establishment of dose reference levels using a dose management system.

Material and Methods

- 3 public hospitals
- 5 CT helical multi-slice scanners (16 to 128 slices) : 4 Siemens and 1 General-Electric.
- GE-Dosewatch was used to register patient dose indexes, CTDIvol and DLP, and the technical parameters.
- 3 months collecting data.

Results. I

- CTDIvol and the DLP data approximate well to a log-normal distribution function whereas the scanned length fits better to a normal distribution.

Results. II

Examinations	N	CTDIvol (mGy cm)	DLP (mGy)
		Median Range	Median Range
Head	1445	33 – 64	527 – 1162
Thorax	579	7 -10	218 – 334
Abdomen	1055	10 -12	383 - 453

Results. III

- Dose variations up to 30% among same CT model scanners.
- Patient size selection was not deemed necessary due to the high number of cases per examination
- A drawback of this massive data is the presence of extreme outliers, and thus data filtering is mandatory

Conclusion

- Dose management systems provide an efficient tool to overview and optimize radiological dose levels.