Introduction
Computed Tomography is the principal contributor to ionizing radiation exposure of medical origin for the Canadian population. Radiation emission guidance (Diagnostic Reference Levels) is available but might fail to capture the reality of clinical activities.

CT dose monitoring allows health professionals and technical personnel to study clinical practice trends and ease the identification of outliers. Currently, no such clinical tool is available.

Aim
Development of dynamic dashboards for the continuous monitoring of CT dose data (CTDI<sub>vol</sub> and DLP) in a large institution. Visualization and analytic tools are provided for comparison with relevant guidelines and other clinical centers.

Material/Methods
A* - Data Collection
Medical data within the clinical center’s PACS is collected in the DICOM format. Sensitive data is de-identified to guarantee its protection.

B* - Data Storage and Curation
Data is stored within PARADIM in an instance of the open-source software Orthanc. Further data curation is assured by automated scripts within the storage.

Conclusion
A dashboard fed by secure data pipelines was developed to aggregate and visualize dosimetric data from clinical CT studies. There is still much more work to be done to explore PARADIM’s unexploited potential.

Results
- Automated data pipeline (within the PARADIM platform) that doesn’t interfere with clinical activities
- FAIR principles integrated within the data workflow
- Ensures data standardization
- Sensible information properly de-identified and securely stored
- Working dynamic dashboards
- Visualization and analytic tools supporting health professionals and managers distinct needs
- Relevant data from more than 50,000 mammographic patients* from different clinical centers successfully ingested

*The PARADIM platform was used to monitor mammographic diagnostic data from PACS for two months. The average ingestion time was under a second inducing no significant server load.

References