

Time savings using the Sectra Lesion Tracking tool

Summary of a study performed at two radiology departments that form part of the Oslo University Hospital network. The aim was to investigate whether the Sectra Lesion Tracking tool would increase efficiency in radiologist reviews.

Conclusion: For reviewed CT exams (from review to dictation) of complex cancer cases, the average time saved using the Sectra Lesion Tracking (SLT) tool was 15.4 minutes per case (corresponding to a 35% reduction in time), and an additional 3 minutes were saved when measured from review to sign-off. The authors concluded that the time savings were higher than expected. **SLT resulted, “without a doubt”, in increased efficiency** in reviews as well as better diagnostic quality.

The time savings were calculated by estimating the time it took to perform manual lesion measurements and lesion progress comparisons, and then subtracting the time it took to perform the same task with SLT. On average, the time without SLT was 44.6 minutes and with SLT 29.2 minutes.

In terms of quality, **the SLT tool was determined to provide better-quality results** for the referring physicians.

All participating radiologists agreed that the SLT tool increased their efficiency and were in favor of acquiring the software.



On average, the review time without the SLT tool was 44.6 minutes and 29.2 minutes with the tool, corresponding to an average reduction of 35%.

“ Without a doubt saves time. When assessing treatment response, it gives a good overview of the lesions measured, [...] and makes it possible to see the development...”

CT radiologist (translated from Norwegian)

» The Sectra Lesion Tracking tool

SLT is a tool that is integrated into the diagnostic application of the Sectra Enterprise Imaging Solution. It provides functionality for tagging and measuring lesions, a snapshot presentation and an overview of the measured and tagged lesions.

For follow-up studies, the Sectra Anatomical Linking functionality works in symbiosis with SLT and recognizes similar anatomical positions, which facilitates and significantly increases the accuracy of the lesion comparison procedure.

Together, these functionalities provide a snapshot presentation, a quick overview of lesions, and more efficient measurements and follow-up calculations without having to scroll through the exam.

» Study background

At the Oslo University Hospital, radiology capacity has been identified as a bottleneck when it comes to complying with the Norwegian standardized patient pathway requirements. The authors mention CT and MRI case reviews as being particularly cumbersome due to the high number of images and previous exams, which require time-consuming comparisons.

The hospital network decided to perform a study of two of its main radiology departments to investigate whether the SLT tool could raise efficiency in measuring, tagging and comparing lesions on CT and MRI exams for complex cancer cases. This investigation aimed to create a business case to guide a potential future purchasing decision concerning SLT.

» Method

To estimate the increase in efficiency, the study assessed the time needed to measure lesions and track them over time without SLT and compared this with the time needed to perform the same patient exams with SLT enabled. 36 patients were included in the study and the measurements were performed according to the following protocol:

1. An estimation of the time required to measure the lesion(s) and their progression without SLT was performed for all exams (old exams with measurements performed without SLT were available).
2. For all exams, the SLT was turned on and all lesions were labeled with the tool.
3. When patients arrived for their follow-up, an estimation of the time required to measure the lesion(s) and their progression with SLT was performed for all new exams.
4. The time saving was calculated for each patient, comparing the time for review without SLT with the time using SLT. The same radiologist was assigned the same patient cases.

Inclusion criteria:

- Because they are easier to standardize in review, only complex CT exams were used in the study. However, to be able to draw conclusions for MRI exams, the head of MRI from one of the hospitals was also involved in the study.
- Only exams of the neck/thorax/abdomen/pelvis were included, since these are easier to standardize in review.
- Patients conducting their primary review were excluded; only patients for control visits were included. This was done since the time savings achieved using SLT increases the more prior cases that are available.
- The radiologists in the study selected which patients to include in the study based on when their workload allowed for it.



“Fast and easy to perform measurements and to follow patients over time. I look forward to a future link to the Sectra Volume Measurement tool and structured reporting functionality in the future.”

MR radiologist (translated from Norwegian)

» Results

For CT examinations (thorax/abdomen/pelvis) from reading to finished dictation, the average review time was 44.6 minutes without SLT, and 29.2 minutes with SLT, **corresponding to an average time saving of 15.4 minutes** (a 35% reduction in time). An additional 3 minutes were saved when the sign-off was included in the time measurement.

The SLT tool was determined to be **more efficient the more prior exams the patient had**. The time saved was also determined to be greater for patients with more than one lesion. This is because SLT creates a library of lesion snapshots to give an easy overview, as shown in image 1. Note that all cases were assessed to be complex cancer cases.

» Discussion

The authors concluded that the results were better than expected. The Sectra Lesion Tracking tool is “without a doubt” more efficient and provides better quality in reports than manual lesion measurements and follow-up. **All radiologists concluded that the increase in efficiency was related to the use of SLT.**

The quality of diagnosis was perceived to be improved as a result of more accurate measurements and comparisons between current and prior exams. Moreover, the SLT tool was assessed to provide higher-quality results for the referring physicians.

All participating radiologists agreed that the SLT tool increased their efficiency and were in favor of acquiring the software.

The main reasons mentioned in the post-study survey were the tool’s ease of use, the fact that no external applications need to be used, and the perceived and actual increase in productivity.

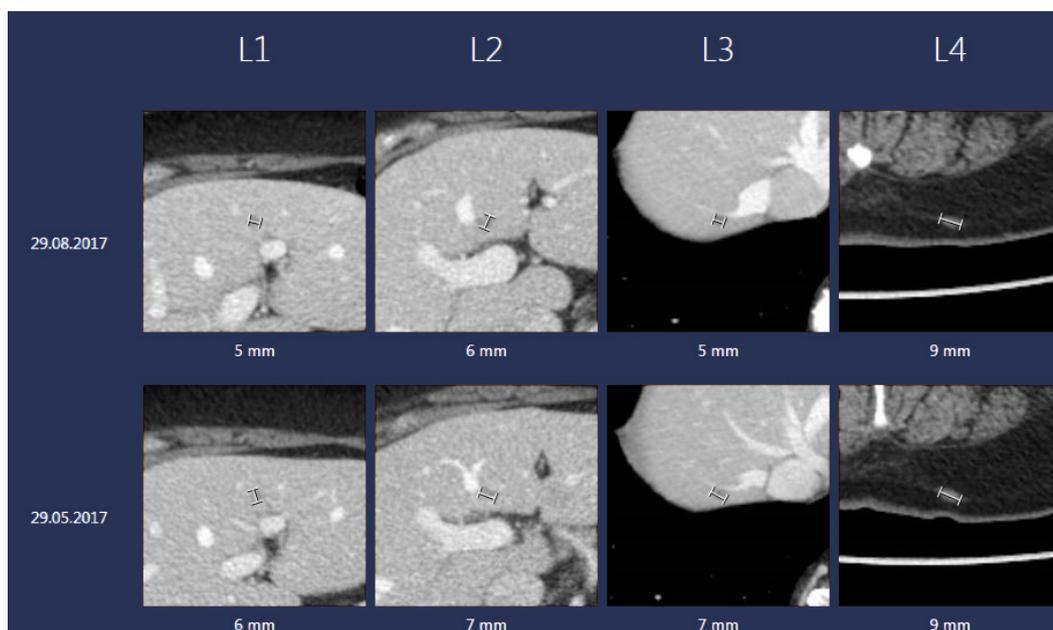


Image 1. A screenshot of the Sectra Lesion Tracking tool showing measurements of four lesions at two different timepoints.

» Limitations

No consideration was given to the radiologists' different subspecialties or working tempo.

» References

Study performed by the following radiologists at two hospitals part of the Oslo University Hospital network; Rikshospitalet and Radiumhospitalet.

» Disclaimer

Sectra provided the Lesion Tracking software free of charge during the test project.