

Registrar Intervention for Better After-hours Interpretation of CT Scans

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Registrars contribute most of the after hours services to state and academic institutions. This is particularly true for radiology and has specific reference to trauma reporting which is considered within the registrar capabilities early on in their training. This paper summarizes the findings of two papers in the South African setting where there is heavy reliance on registrar reporting.

The first is a 2-month study at two tertiary, level-1-trauma-centers in Johannesburg, where provisional CT reports issued by the registrar on call are reviewed by a qualified radiologist. It showed that, of 1477 CT scans that were performed there was an overall error rate of 17.1% and a major error rate of 7.7%. The error rate for 2nd, 3rd and 4th year registrars was 19.4%, 15.1% and 14.5%. A significant difference was found between the error rate in reporting trauma scans (15.8%) compared to non-trauma scans (19.2%) although the difference between emergency scans (16.9%) and elective scans (22.6%) was found to be not significant, a finding likely due to the low number of elective scans performed. Abdomino-pelvic scans elicited the highest number of errors (33.9%) compared to the other body regions such as head (16.5%) and cervical, thoracic or lumbar spine (11.7%). Increasing workload resulted in a significant increase in error rate when analyzed with a generalized linear model. There was also a significant difference noted in the time of scan, which we attributed to a workload effect. Missed findings were the most frequent errors seen (57.3%).

The second study was performed in less well-staffed academic hospital in north of Pretoria. It was aimed to determine the trauma head CT reporting error rates of new first year radiology residents three months after onset of employment (no on call experience), one month after starting calls and after a crash course (30 minute slide show) and introduction of pro-forma reporting cards. The intent was to determine if there was improvement. The results showed major discrepancy rates between first year radiology registrars and a staff radiologist reporting head trauma CT's - higher

than in American reports (9% on starting call, 10% after one month on call). The study found that the predominant discrepancy lay in missing pathologies (perceptual error), with statistically significant improvement noted after the intervention (7% discrepancy). Missing brain edema on head trauma CT was initially the biggest hurdle but improved over time and with the intervention.

Errors in reporting trauma studies are not unique to developing countries but simple interventions and scheduling more complex studies during consultant working hours may improve reporting.