

# An audit to determine whether body CT scans are being performed adequately in our Trust

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## Background

- ❖ With increasing numbers of CT scans being performed yearly, there is increasing pressure to perform them quickly.
- ❖ Inadequate scanning could lead to pathologies being missed.
- ❖ CT Chest Abdomen and Pelvis with contrast (CCHAPC) are performed with an arterial phase CT of thorax (including entire liver) and a venous phase CT abdomen and pelvis.
- ❖ CT abdomen and pelvis with contrast (CABPEC) are performed in the venous phase.
- ❖ Within the Kettering General Hospital Radiology department, we noticed that scans are not being performed in adherence to local protocols. An audit was performed to determine the true extent of this.

## Aims and Objectives

### Aims:

- ❖ To determine whether body CT scans are being performed completely; and in adherence to local protocols.

### Objectives

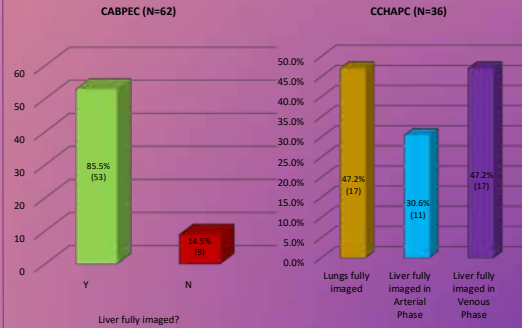
- ❖ Measure whether the criteria for scanning of the lungs and liver are being met with regards to CABPEC and CCHAPC scans.
- ❖ Identify the reasons for lack of compliance.
- ❖ To implement the relevant improvements.

## Method

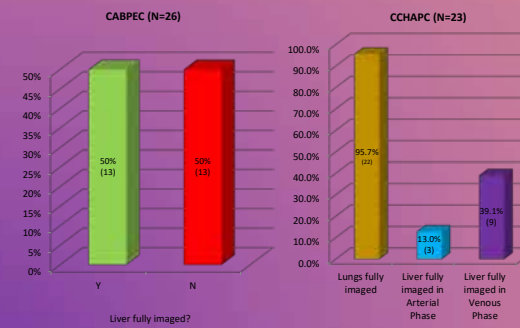
- ❖ A retrospective review of all CABPEC and CCHAPC scans over a randomly selected two-day period was performed:
  - ❖ 98 patients were included in the initial audit (19<sup>th</sup> - 20<sup>th</sup> February 2019)
  - ❖ 46 patients were included in the re-audit (22<sup>nd</sup> - 23<sup>rd</sup> May 2019)
- ❖ All of the images were reviewed by two doctors (Consultant Radiologist and Medical SHO) to ensure accuracy and avoid any bias.

## Results

### Initial Audit



### Re-Audit



## Action Plan

- ❖ The findings were presented to the Superintendents.
- ❖ CT radiographers were notified (formally in writing) about the importance of ensuring complete imaging and about the Trust's dual phase liver policy for CCHAPC scans.
- ❖ 5 days later, CCHAPC and CABPEC scans were analysed using the same previous methodology.

## Summary of Key Findings

Criteria	Standard	Compliance (Numbers & %)	
		Audit	Re-Audit
1	Radiographers must include the whole of the liver on CABPEC	82% 51/62	50% 13/26
2	Radiographers must include the whole of the liver on CCHAPC	30.6% 11/36	13% 3/23
		47.2% 17/36	39% 9/23
		19.4% 7/36	4.3% 1/23
3	Radiographers must include the whole of the lung field on CCHAPC	47.2% 17/36	95.7% (22/23)

## Conclusion

Scanning of the entire liver on CABPEC	35.5% reduction in compliance
Scanning of the entire liver in the arterial phase on CCHAPC	17.6% reduction in compliance
Scanning of the entire liver in the venous phase on CCHAPC	8.1% reduction in compliance
Scanning of the entire lungs on CCHAPC	48.5% improvement in compliance

## Discussion

- ❖ There is currently sub-optimal compliance to the standards despite the actions taken following the first audit.
- ❖ The only improvement was in the scanning of the entire lungs on CCHAPC scans.
- ❖ The best compliance overall was in scanning of the entire liver in CABPEC scans in the first audit (82%).
- ❖ The poorest compliance overall was in scanning of the entire liver in both phases on CCHAPC scans; of which 75% (27/36) had cancer or previous cancer in the first audit.
- ❖ Following the actions taken; one would have expected the compliance to either improve or to be stable; as opposed to being reduced.

## Limitations

- ❖ The sample size in both the audit and re-audit were small; and perhaps reviewing scans over a week may have produced a clearer picture on the compliance.
- ❖ The sample sizes differed in both audits.
- ❖ There were different radiographers available on the days that the scans were performed; and thus this may have contributed to lack of compliance.

## Recommendations

- ❖ Discuss with CT Superintendents and ascertain the reasons for non-compliance with standards despite intervention.
- ❖ Disseminate findings to radiographers.
- ❖ Refresher training for CT radiographers.
- ❖ Re-Audit to determine if there has been any improvement with regards to compliance with the standards.
- ❖ Copy of the standards to be made available in the CT Control room as a reminder.