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Managing Eye Theatre Efficiency: An analysis of theatre utilisation for ophthalmology cases in Leicester

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Background and aims

The Ophthalmology Department is one of the busiest departments for surgical activity at University Hospitals of Leicester. The COVID-19 pandemic and previously existing demand for ophthalmology surgery created a perfect storm of increasing our surgical wait time for patients.

Theatre efficiency is a vital part of delivering the most that we can within the time and resources allocated. The Royal College of Anaesthetists has published guidance on theatre efficiency and maximising theatre utilisation. This audit assesses the performance of the UHL Ophthalmology department according to ROA standards and addresses areas for improvements.

Project Methodology

A retrospective analysis was performed on all UHL Ophthalmology surgical lists in the month of June 2022. This excluded injection lists and minor-op lists conducted within the department. We collected data on the responsible Consultant Surgeon of each list, subspeciality interest, Anaesthetist allocated for each list, scheduled and actual start time, scheduled and actual end time, cases performed and cancellations on the day including reasons for this.

Theatre efficiency was calculated using the below formula:

Efficiency = {[(fraction of scheduled time used) - (fraction of scheduled time overrunning)] * (fraction of scheduled cases completed)}* 100

The data for this first part of the study was conducted using a retrospective nature using the UHL theatre software, Ormis © . The study investigators also designed a prospective arm (part 2) to this study using actual timings that were observed by the project team. The aim of this smaller second cohort was to ensure the reliability of the data that was collected through the Ormis © system. The data for the second part was taken from 5 days of theatre activity between the 4th to the 8th of July 2022.

	Audit standard	Source of standard (Guideline title)	Target % Expected range	1st Audit		2nd Audit	
				Result (%)	Total (n)	Result (%)	Total (n)
1	Theatre efficiency	Royal college of Anaesthetists	85%	61%	122	60%	27
2	As few as possible lists should under- or overrun		Baseline	89%	108/122	92%	24/26
3	Cancellation on the day of surgery		0%	12%	45/365	15%	12/79

Conclusions

We are underperforming currently with regards to efficiency (24% below target efficiency in the first audit and 25% in the second).

- 59% of sessions finished more than 20 minutes before the scheduled end time (with 19% of sessions finishing more than 90 minutes before they were due to). 11% overran by greater than 20 minutes.
- It was found that there were considerable variabilities in efficiency between the same Consultant Surgeon's lists and between other Consultant Surgeons. There was also variability between Anaesthetists.
- A significantly high proportion of surgical lists started late and completed earlier than scheduled, both of which will impact on theatre efficiency. Lists with cancellations had a similar efficiency with lists with no cancellations. This could be related to under booking of lists to ensure completion of lists on time or lists are booked to allow potential complication time.
- Cancellation rates were significant with approximately 1 in 4 cases cancelled on the day of operation across both arms of the study. This suggests that considerable work around pre-assessment, clear indication for surgery and administrative work is essential to keep cancellation rates low.