Improving Cataract Surgery Efficiency – A Time and Motion Study

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Background:

- Cataract surgery is an extensively performed surgical procedure in the UK. There is increasing surgical backlog from COVID-19 and rising demand due to demographic changes.
- Getting It First Time Right (GIRFT) has introduced the high flow low complexity (HFLC) cataract surgery in addressing the current issue.
- The high flow practice and efficiency measures brought in by the Ophthalmology Team at Ninewells Hospital, NHS Tayside Trust has shown positive outcome by doubling the daily cases limit.
- **Aim:** To compare and assess the **cataract theatre efficiency** between the high flow list (HFL) and the standard list (SL) using a time-and-motion study.

Methods:

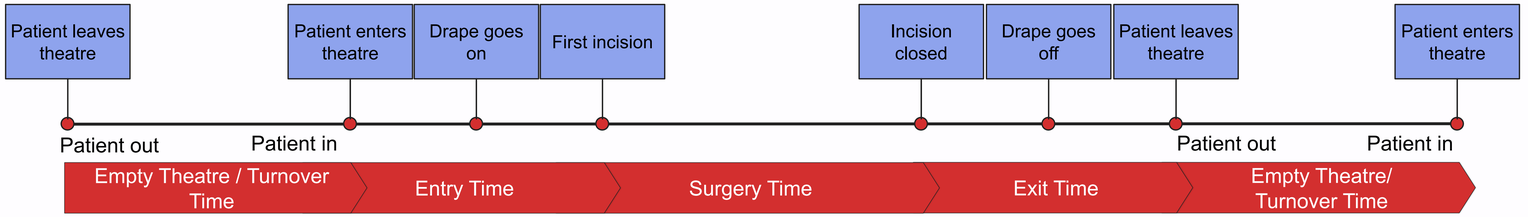
- A prospective cross-sectional study was carried out in the **Ophthalmology Department, NHS Tayside** over 4 weeks.
- Time-and-motion data were recorded using the **Eyefficiency app**.
- Data were analysed using two-tailed comparisons, with *p-value* of less than 0.05 set as the significance level.
- Case duration was calculated based on

i. The **number of patients** in the list, and

ii. The **number of cases**, assuming one bilateral procedure represents two cases.

Discussion:

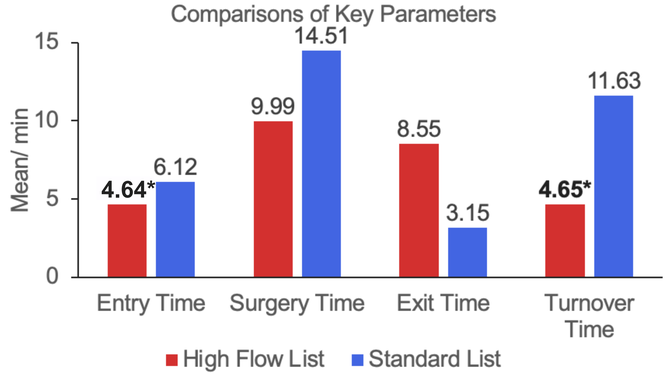
- **Turnover time** and **entry time** were reliable indicators of cataract theatre efficiency.
- This study suggested that the overall efficiency was improved through the **pre- and post-surgery logistics**.
- **Expansion of a specialised multidisciplinary team (MDT) by only one member** significantly enhances the cataract theatre productivity, along with other factors such as immediate bilateral sequential cataract surgery (IBSCS), the types of anaesthesia, and surgeon experience.

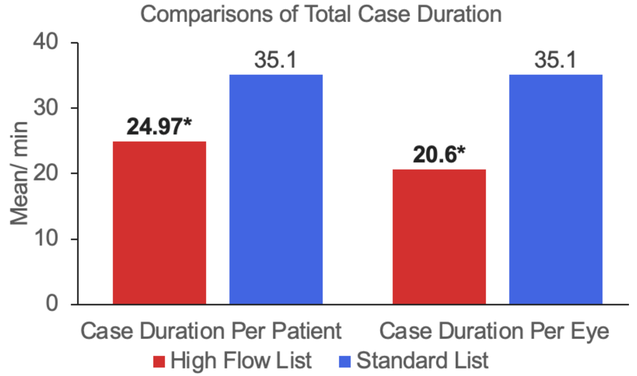


Schematic diagram of the key parameters from the cataract surgery flow

Results:

- **111 cataract cases performed** over the course of the study. These included: 73 phacoemulsifications, 18 bilaterals, and 3 manual small incision cataract surgery (MSICS). Total list duration generally lasted no longer than 7.5 hours.
- HFL was made up of **7 staff members** (excluding surgeons) and used mainly **topicals** for anaesthesia, compared to SL with **6 staff members** (excluding surgeons) and used mainly **SubTenon** for anaesthesia.
- **Turnover time and entry time** showed a **statistical significance ($p < 0.05$)*** respectively.
- **Case duration per eye** in HFL (20.60 min/case) was **significantly shorter ($p < 0.05$)*** than in SL (35.10 min/case).
- HFL was able to perform **2.91 cases per hour** (at least 21 cases in a 7.5-hour list) , and **1.71 cases per hour** in SL (about 12 cases in a 7.5-hour list).





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