

Variability Methodology to Improve Access to Emergency Surgery



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Introduction

In 2015, NHS Greater Glasgow and Clyde undertook significant service re-configuration. As a consequence the Surgical and Anaesthetic Division at Glasgow Royal Infirmary (GRI) predicted a significant increase in demand from emergency surgical specialties requiring access to theatre. To accommodate this rise in theatre demand GRI applied the Variability Methodology established by the Institute of Healthcare Optimisation (IHO).¹ This methodology aims to minimise the artificial variation in patient flow and optimise the use of existing staffing and theatre resources for emergency and elective surgery.

Aims

This multidisciplinary patient-centred project aimed to improve theatre access for time sensitive emergency surgical patients to achieve optimum clinical outcomes and reduce patient length of hospital stay (LOS).

Methodology

- A **multidisciplinary team** was established.
- A standardised IHO Emergency **CEPOD classification** was implemented, indicating theatre urgency (Table 1).
- Each surgical specialty developed standardised **surgical urgency classifications** for specific operations ensuring uniformity.
- A standardised **Emergency booking system** was introduced.
- An **Emergency Theatre Hub** (fig 1) was established, staffed by a senior **theatre co-ordinator**, to be the single point of booking and management of emergency cases. (fig 2).
- Patient theatre access and queuing became solely dependant on CEPOD classification.
- An 08:30 **daily Hub Huddle** with the Hub co-ordinator, anaesthetic staff and emergency theatre charge nurses +/- surgeon improved communication.
- **Data collection** began June 2015 and ongoing to date. The data has been used to: (1) provide patient flow analysis; (2) indicate areas of variability in theatre activity; (3) assess reasons for delays; (4) generate weekly improvement metrics; (5) indicate optimal configuration of theatres to accommodate demand using simulation analysis.

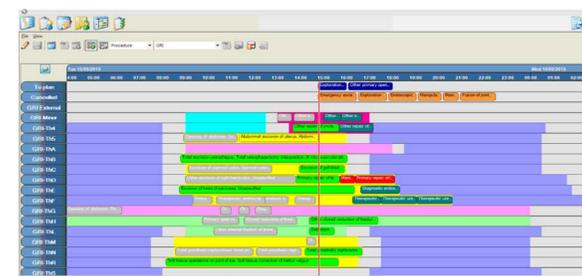
Table 1. CEPOD Classification

CEPOD	Code	Urgency
Immediate	A	<45 mins
Urgent	B	2 Hours
Urgent	C	4 Hours
Urgent	D	8 Hours
Urgent	E	24 Hours
Expedited		<48 Hours
Expedited		<7 Days
Semi Elective		<21 Days
Elective		TTG

Fig .1 Theatre Hub



Fig.2 Computer screen shot from Theatre Hub



Results

Fig.3 Delays in Emergency Surgery vs increase demand

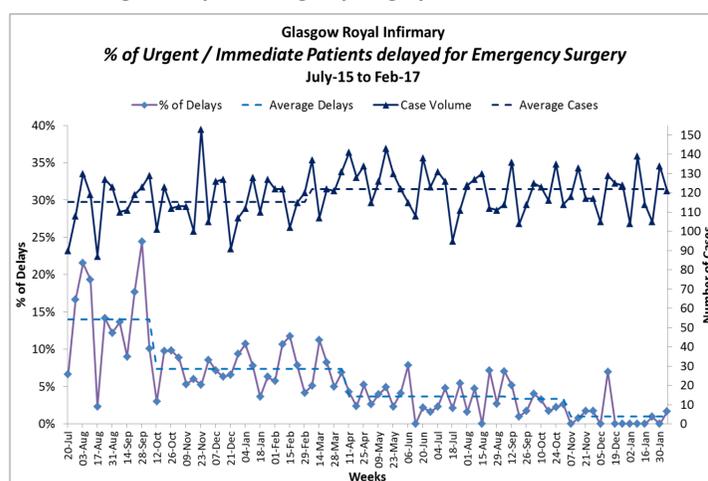
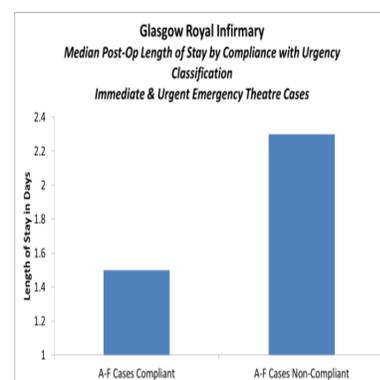


Fig.4 Reduction in Length of Hospital Stay



From Jul-15 to Feb-17, GRI undertook 9779 emergency theatre cases. The average case load over the last year has increased from 115 to 122 per week. Delays in timely access for emergency theatre have significantly decreased from 25% to <5% of cases (fig 3). Within the last 3 months this has been sustained at <1%. Patients reaching theatre within their CEPOD classification time have reduced LOS improving efficiency and cost savings (fig 4).

Conclusion

The IHO Variability Methodology has been successfully applied to our Emergency Theatre services. We have reduced delays for patients accessing theatre despite increased demand and we have shown a reduction in LOS for patients reaching theatre within their CEPOD classification time. The success of the project has involved significant multidisciplinary teamwork, a change in theatre configuration and working practice. Continuous data collection and analysis has enabled us to monitor progress and develop innovative changes to ensure theatre access is timely and efficient.

Reference

1. Institute of Healthcare Optimisation <http://www.ihooptimize.org/>

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