

## Critical Care (DCC) Modelling Assumptions

### Notes/ assumptions

1. The quoted possible 19 beds currently available in DCC-G include opening beds in sHDU which would not meet building standards/ infection control standards for critical care beds due to the bed area being too small.
2. Estimates are based on averaged 3 years' data (2016 – 18) from the MedICUs database.
3. Average occupancy target is 70% to allow for peaks and troughs and is a national recommendation.
4. Conservative estimate is derived from LoS to the nearest 0.1 days and will be an underestimate (ie we do not close a bed for several hours waiting for the next patient before reopening it).
5. Liberal estimate of beds required is derived from total bed days ie any part of a day occupied counts as 1 day and will overestimate demand.
6. Estimates assume no deterioration in delayed discharges over 2016-18 average figures.
7. Estimates assume no change in case mix eg the GIRFT recommendation that in future all major colorectal resections are admitted to DCC would increase numbers further.
8. Where patients were admitted direct to DCC from ACU or ED, the assumption is that these will all still be in GRH even if their base specialty (eg gastro or neurology) is located in CGH.
9. I have assumed vascular & urology pts would have their IR procedure wherever the specialty is based (and not open AAA on one site, EVAR on the other for example). With the exception of cardiology, the number of "IGIS patients" not associated with either specialty who subsequently come to DCC is extremely small and not possible to estimate from this database.
10. I haven't modelled GI daycases – extremely small numbers require DCC and not possible to estimate from the data.
11. Pts coded leaking large bowel anastomosis are included in elective colorectal cohort and assumes they were originally elective. They may in fact be emergency resections. If their original surgery was elective and the plan would be to transfer these patients to GRH if electives were in CGH this can be adjusted.
12. Gynae onc has been located wherever elective colorectal is although not specified in models requested – this can be recalculated if required.
13. The figure for 4% growth per annum is from a validated model from ICNARC (national benchmarking body).
14. Side room occupancy. An audit in winter 2017/18 (low flu numbers in DCC) demonstrated that if acute general medicine had been located on one site, the number of times the current capacity of 4 rooms would have been exceeded was on 20 days over 3 months (5 or 6 rooms required). In a "flu year" the number would be higher.
15. Consequences of demand exceeding capacity are:
  - a. Cancelled elective surgery.
  - b. Non-clinical inter hospital transfers.
  - c. Elevation of the threshold for admission with consequent risk of patient harm resulting from managing patients on a general ward rather than DCC.

## Theatre Modelling Assumptions

### Activity

- Feb 2019 to Jan 2020 theatre activity
- No growth assumptions applied
- Elective & Daycase activity only
- Activity at CGH & GRH only
- Only activity that occurred (ie no removal date)

### Utilisation & Efficiency Assumptions

- Actual value applied if available, otherwise site total used (indicated by yellow)
- Baseline activity uses the below assumptions
- Adjusted baseline activity applies 90% to specialties that originally fall below 90%, otherwise uses previous utilisation

Specialty	Baseline				Adj Baseline			
	Utilisation		Efficiency		Utilisation		Efficiency	
	CGH	GRH	CGH	GRH	CGH	GRH	CGH	GRH
Breast	82.2%	79.6%	91.7%	94.1%	90.0%	90.0%	91.7%	94.1%
Colorectal	81.9%	76.9%	99.9%	91.6%	90.0%	90.0%	99.9%	91.6%
ENT	88.0%	85.9%	89.9%	87.3%	90.0%	90.0%	90.0%	90.0%
General Surgery	88.0%	100.0%	53.8%	89.0%	90.0%	100.0%	90.0%	90.0%
Gynaecology	98.9%	74.8%	97.5%	87.9%	98.9%	90.0%	97.5%	90.0%
Gynaecology Onc	98.9%	74.8%	97.5%	87.9%	98.9%	90.0%	97.5%	90.0%
Max Fax	88.0%	81.0%	89.9%	87.5%	90.0%	90.0%	90.0%	90.0%
Ophthalmology	85.5%	81.0%	77.7%	87.5%	90.0%	90.0%	90.0%	90.0%
Oral Surgery	88.0%	83.4%	89.9%	80.1%	90.0%	90.0%	90.0%	90.0%
Pain Management	88.0%	81.0%	89.9%	87.5%	90.0%	90.0%	90.0%	90.0%
Trauma & Orthopae	86.3%	91.0%	87.7%	88.6%	90.0%	91.0%	90.0%	90.0%
Trauma	88.0%	97.5%	89.9%	84.7%	90.0%	97.5%	90.0%	90.0%
Upper GI	57.3%	72.3%	87.4%	93.5%	90.0%	90.0%	90.0%	93.5%
Urology	98.6%	74.0%	98.8%	81.6%	98.6%	90.0%	98.8%	90.0%
Vascular Surgery	90.0%	56.3%	94.8%	69.5%	90.0%	90.0%	94.8%	90.0%
Interventional Radi	88.0%	81.0%	89.9%	87.5%	90.0%	90.0%	90.0%	90.0%
Critical Care	88.0%	81.0%	89.9%	87.5%	90.0%	90.0%	90.0%	90.0%
Other	88.0%	81.0%	89.9%	87.5%	90.0%	90.0%	90.0%	90.0%

### 26 theatres across 3 sites GRH, CGH & Cirencester –

GRH = 16 (2 Obs; 2 Emerg; 5 General & Gynae; 3 ENT; 4 T & O)

CGH = 10 (5 General, Gynae & Urology; 1 IR; 4 Elective Orthopaedic)

Cirencester = 1

### 5 Recoveries

GRH = 2 (Main & Paediatric – Both managed by Laurence Broady)

CGH = 2 (GT & Ortho – Both managed by Deb White)

Cirencester = 1

### 4 Day Surgery Units

GRH = 1 (Mayhill)

CGH = 2 (Chedworth & Kemerton – Both managed by Cathryn Braithwaite)

Cirencester = 1