

# SickKids - STA Quantum Challenge

## Dr Clyde Matava

## Angad Kaira

Operating	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Relief order	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
Anesthesiologi	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20
Traineeee						R1		R2			AA1		AA2		R3					
	Neuro	Cardiac1	Gen Surg	Cardiac2	Ortho 1	Burns	Plastics	Eyes	ENT	Add-on1	Addons2	Gynae1	Sat	Gynae2	Cranio	Urology1	Urology2	Ortho 2	Dental	CT
630am																				
7am																				
730am																				
8am																				
830am																				
9am																				
930am																				
10am																				
1030am																				
11am																				
1130am																				
12noon																				
1230pm																				
1pm																				
130pm																				
2pm																				
230pm																				
3pm																				
330pm																				
4pm																				
430pm																				
5pm																				
530pm																				
6pm																				
630pm																				
7pm																				
730pm																				
8pm																				
830pm																				
9pm																				

Rules: Letters (A,B,C) = Operating Rooms

Numbers (A1,A2,A3 etc) = Anesthesiologists

Relief Order = 1 is relieved first then 2,3,4 etc

Anesthesiologists A2,A3 and A9 never relieve anyone

An on-call anesthesiologist (AC) starts at 5pm and reliefs which ever room is still running

R1, R2, AA1, AA2 are trainees and never work alone.

RC1 is a trainee who will start at 5 pm and will relieve anyone of R1,R2 or R3, if their room is still running at 5pm.

Anesthesiologists A6 and A8 do not work in Cranio or Urology

Gynae Room does not get relief

Goal: Minimize handoffs

**Probability of overruns of more than 30 mins:**

Neuro 0.8  
Cardiac 0.6  
Ortho 0.5  
Urology 0.15  
Dental; 0.06  
Gynae 0.09  
Eyes 0.09  
ENT 0.15  
Plastics 0.12

**Probability of overruns of more than 60 mins:**

Neuro 0.4  
Cardiac 0.3  
Ortho 0.2  
Dental 0.01  
Urology 0.05  
Gynae 0.09  
Eyes 0.09  
ENT 0.05  
Plastics 0.04

**Probability of underruns of more than 30 mins:**

Neuro 0.0  
Cardiac 0.06  
Ortho 0.14  
Dental 0.19  
Urology 0.25  
Gynae 0.09  
Eyes 0.16  
ENT 0.02  
Plastics 0.04

**Overrun = cases takes longer than booked**

**Underrun = cases takes shorter than booked**