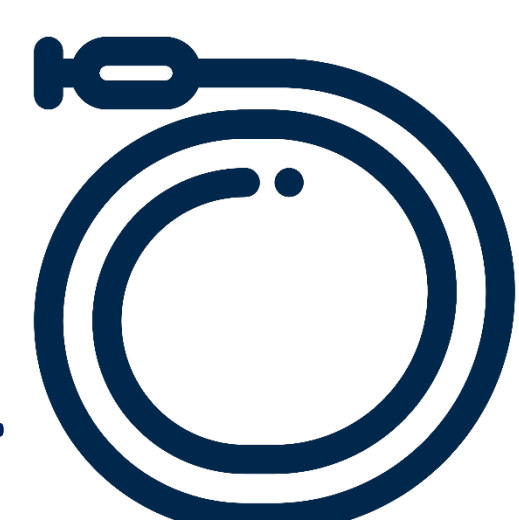


## Colorectal Cancer & Colonoscopy



Colorectal cancer (CRC) is the second leading-cause of cancer death in the US.

Colonoscopy reduces CRC incidence by up to 40% and reduces mortality up to 50%.



## Exploring the Problem through Simulation

Building a computer simulation of patient scheduling and daily operations for colonoscopy at Michigan Medicine allows us to see how scheduling policies affect how easily patients can access care and how well providers' time is utilized.

Start with an empty template of appointments for a week

	Monday	Tuesday	Wednesday	Thursday	Friday
7:00					
8:00					
9:00					
10:00					
11:00					
12:00					
13:00					
14:00					
15:00					
16:00					
17:00					
18:00					

	Monday	Tuesday	Wednesday	Thursday	Friday
7:00					
8:00	RV	Proc	RV	RV	Proc
9:00			NP	NP	
10:00	NP	NP			NP
11:00			Proc	NP	
12:00		RV		Proc	NP
13:00					
14:00					
15:00	NP				NP
16:00			NP		RV
17:00					
18:00					

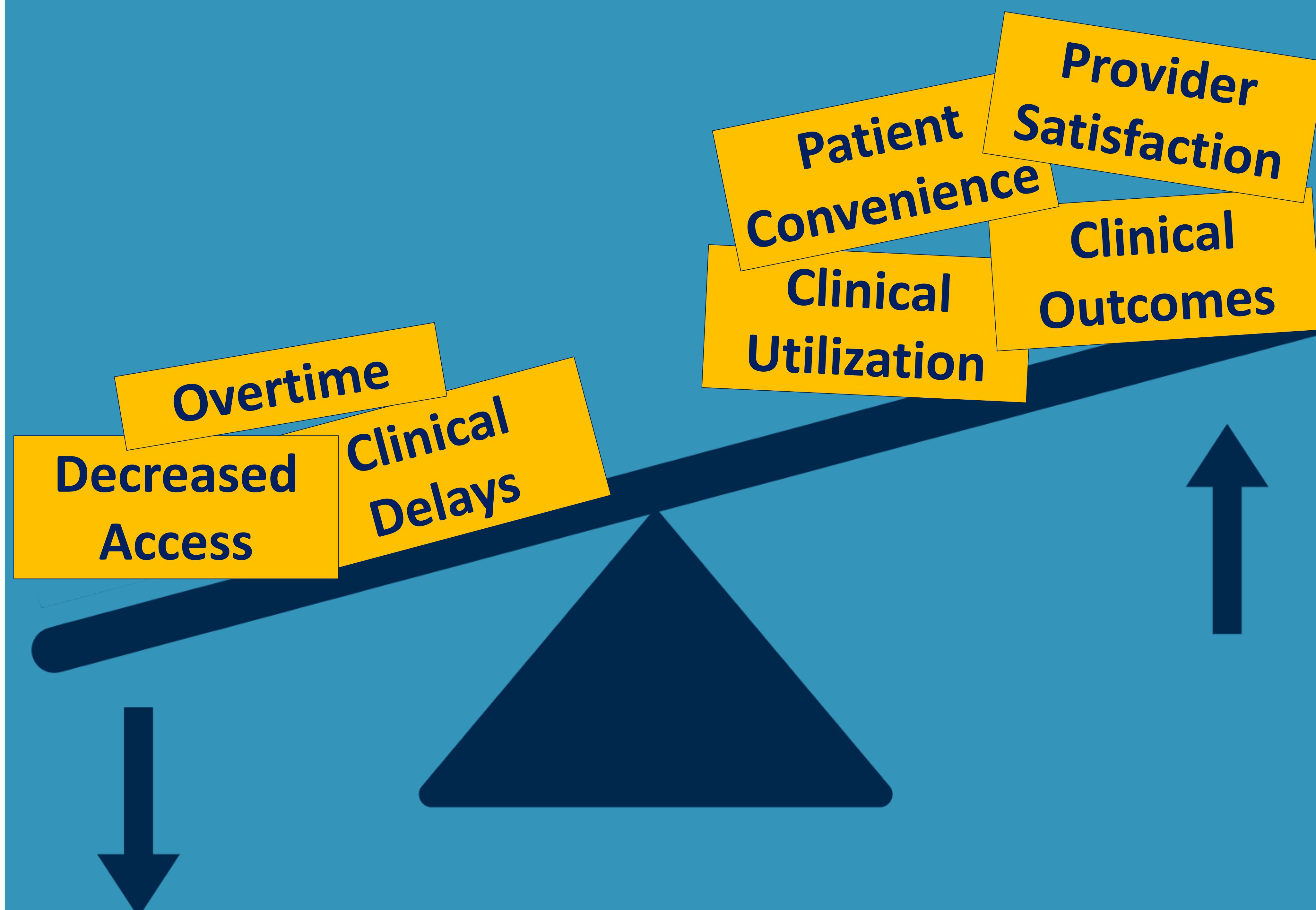
Fill the template based on scheduling policies to create a schedule

Simulate how the clinic day operates including patients arriving late/early, procedures running shorter/longer than expected

	Monday	Tuesday	Wednesday	Thursday	Friday
7:00		Proc	RV	RV	Proc
8:00	RV		NP	RV	
9:00			NP	NP	
10:00	NP	NP			NP
11:00			Proc	NP	
12:00		RV		Proc	NP
13:00					
14:00		RV			
15:00	NP				NP
16:00			NP		
17:00					RV
18:00					

# Striking a balance when scheduling colonoscopy patients

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## What We Learned

Simulation allows for robust policy testing at a low cost and is useful in communicating how randomness affects operations



Trade-offs are always necessary

For example:

- Reducing patient wait time in clinic often results in an increase in provider idle time and longer lags to get appointments



- Allowing some amount of anticipated provider overtime can enable more flexibility in meeting patient preferences for appointment times



## Acknowledgements



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