

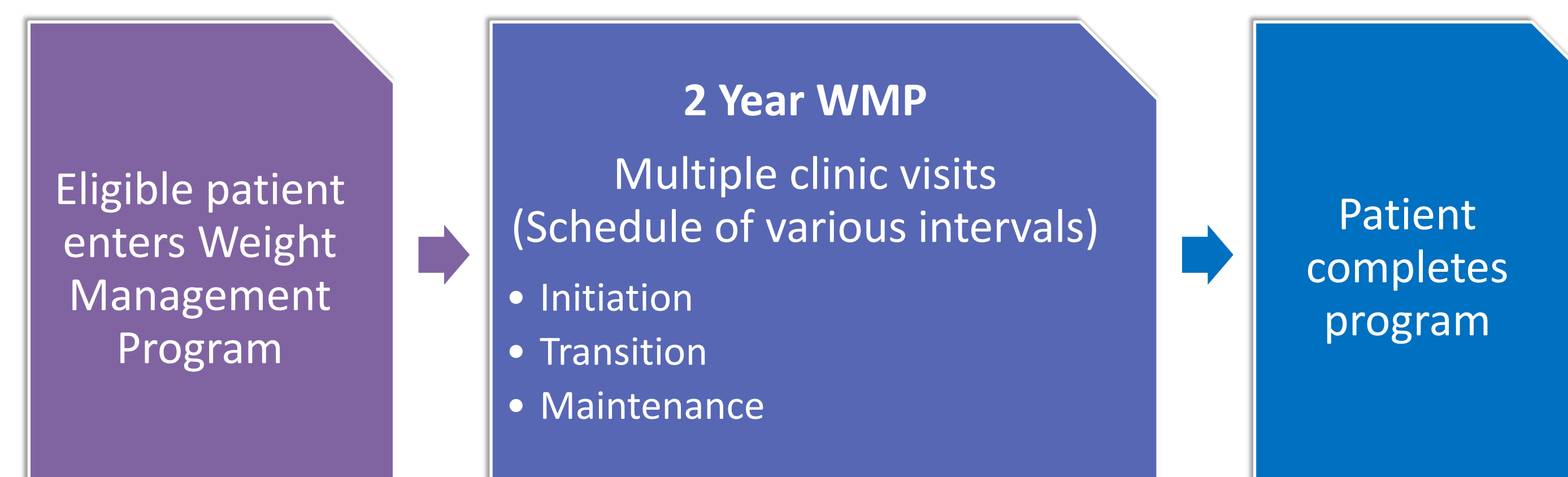
Patient Scheduling and Capacity Assessment for an Endocrinology Clinic

Moses Chan, M.S.E.¹, George Tam, B.S.E.¹, Amy Cohn, Ph.D.¹, Amy Rothberg, M.D.², William Herman, M.D., M.P.H.²

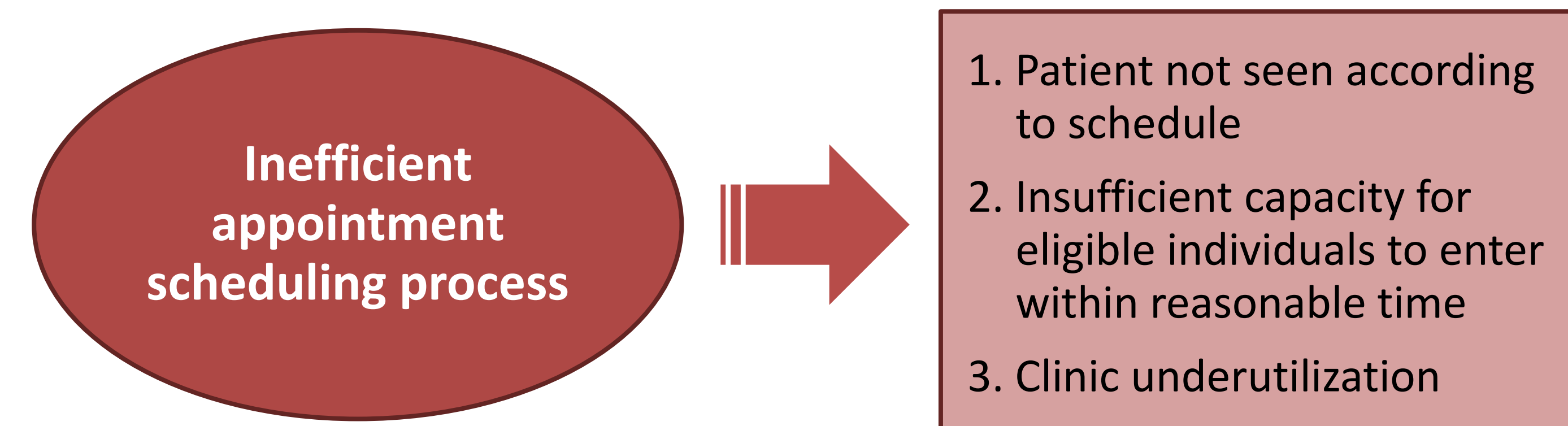
¹Department of Industrial and Operations Engineering, University of Michigan, ²Division of Metabolism, Endocrinology, and Diabetes (MEND), Department of Internal Medicine, University of Michigan Health System

Background

More than 1/3 of U.S. adults are obese. Related conditions include heart disease, stroke and type-2 diabetes. A novel Weight Management Program offered by an endocrinology clinic provides obese individuals long term strategies in managing and maintaining a healthy lifestyle.



Problem Statement



Goals:

- Improve patient access to Weight Management Program
- Maximize capacity utilization

Potential questions of interest include:

- How many time slots are open in the next 3 months?
- What are opportunities for improving the appointment scheduling process if we understand the behavior of our patients (e.g. re-scheduling, cancellation, no show?)
- What is the optimal rate for admitting new patients into the Weight Management Program?

Data

Daily files from the clinic that contain calendar snapshots of the year-long scheduling horizon.

Provider schedule:

- Available time slot and its type
- Work schedule (e.g. day-off, holiday, regular)

Patient appointment schedule:

- Patient information (e.g. patient identifier, zip code)
- Appointment type and length (e.g. Return Visit, 15 minutes)
- Appointment status (e.g. scheduled vs. cancelled, reason for cancellation)

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Solution Approach

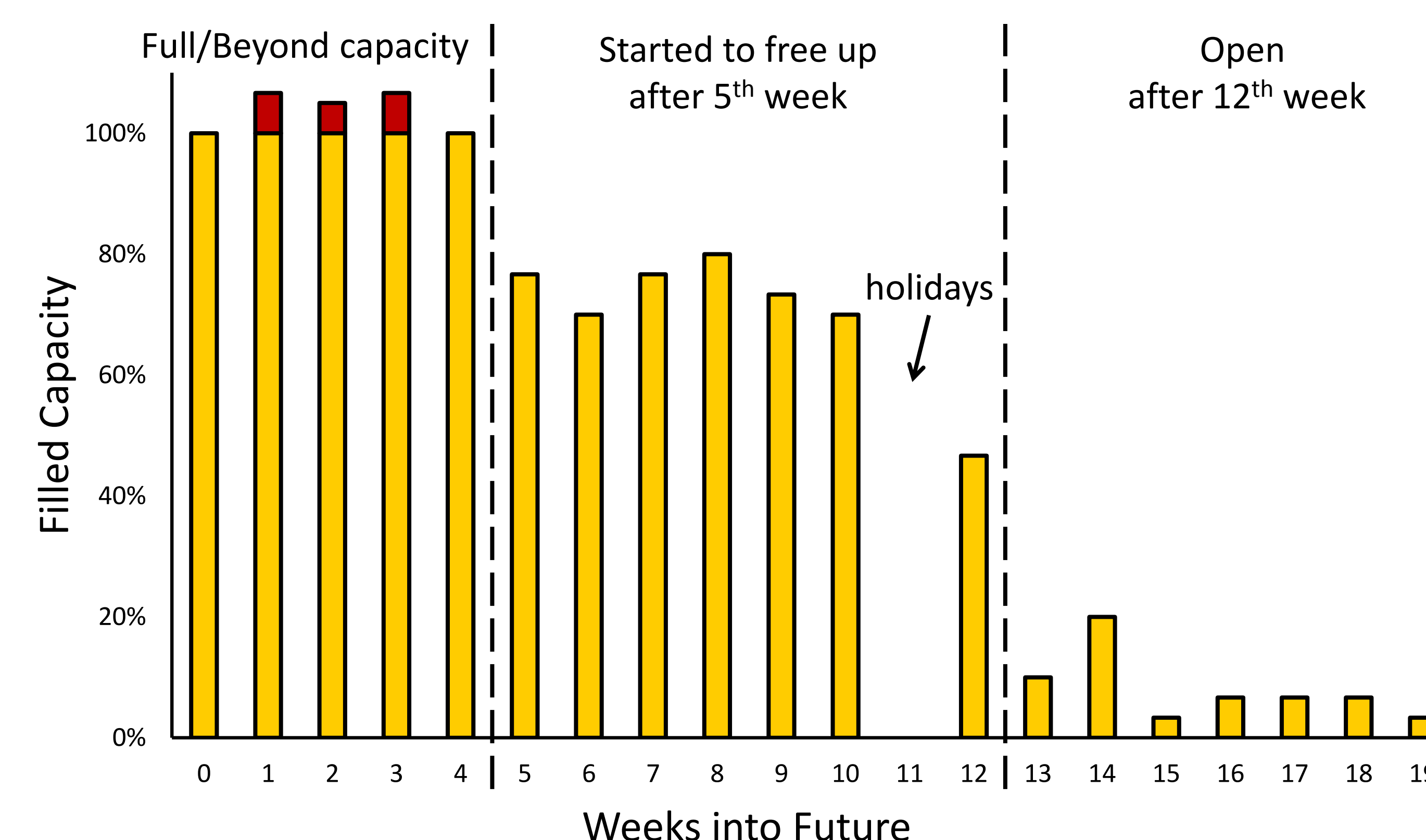
We are analyzing the daily snapshots to understand the appointment schedule development and patient behaviors.

Particularly we are looking at:

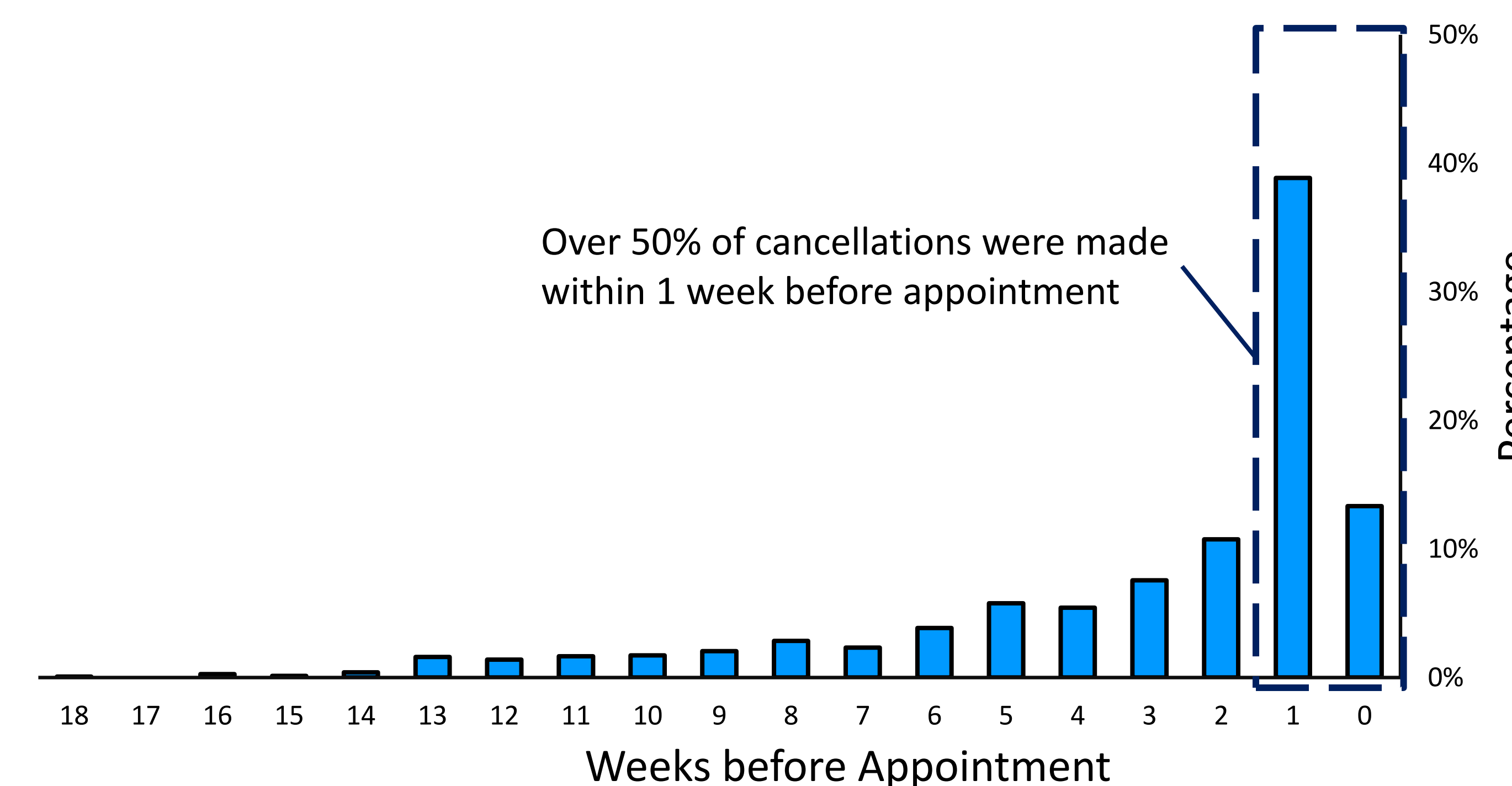
- Capacity of a provider in the future
 - When are the providers' schedules filled?
 - How is the provider's capacity utilized?
 - When can a new patient enroll in the Weight Management Program?
- Trend of appointment cancellation
 - When are the appointments cancelled?
 - How are the cancellations distributed?
 - Will there be enough time for schedulers to refill the empty slot due to cancellation?

Results

Provider capacity looking 18 weeks out



How long before an appointment are cancellations made?



Over 50% of cancellations were made within 1 week before appointment

Discussion

Provider capacity:

- Provider may overwork
- Break time shortened to accommodate extra patients
- Time slots opening up about one month out
- More flexibility three months out

Appointment cancellations:

- Over 50% cancellations within one week before the scheduled appointment
- Increased number of unutilized time slots

Future Work

We will implement a database to dynamically review the appointment schedule and track changes made to the calendar.

Further analyses include:

- Patient behavior in cancelling and rescheduling appointments
- Patient attrition from the Weight Management Program
- Wait list management in appointment scheduling
- Utilization of available time slots
- Effect of appointment scheduling on clinic operations



Visualizing Sample Calendar (October 1 as of February 17-20)

Appointment		View Date			
Date	Time	02/17	02/18	02/19	02/20
10/01	09:00	A (New Patient) Created	A (New Patient) Cancelled	C (New Patient) Created	C (New Patient)
	09:15				
	09:30				
	09:45	B (Return Visit) Created	B (Return Visit)	B (Return Visit) Cancelled	
	10:00	Break			
	10:15			B (Return Visit) Created	B (Return Visit)

Acknowledgement

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