

Improving Patient Access for an Outpatient Endocrinology Clinic

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November 10, 2014



My Collaborators

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Presentation Outline

- Motivation
- Database
- Simulation
- Conclusions
- Future Work

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Weight Management Program (WMP)

- Clinical and research program
 - Restricted medical admittance
- Identify strategies for long-term weight management for obese individuals



WMP Description

- Referred by Physician
- New visit followed by return visits
- Must adhere to schedule

Timeline	Frequency
0 – 3 mo	3 wks
3 – 24 mo	3 mo

Problem

- Current scheduling process and utilization
- Medical staff overworked
- Clinic overtime
- Affects research
- Apply IE skills to analyze
 - Database
 - Simulation



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Database

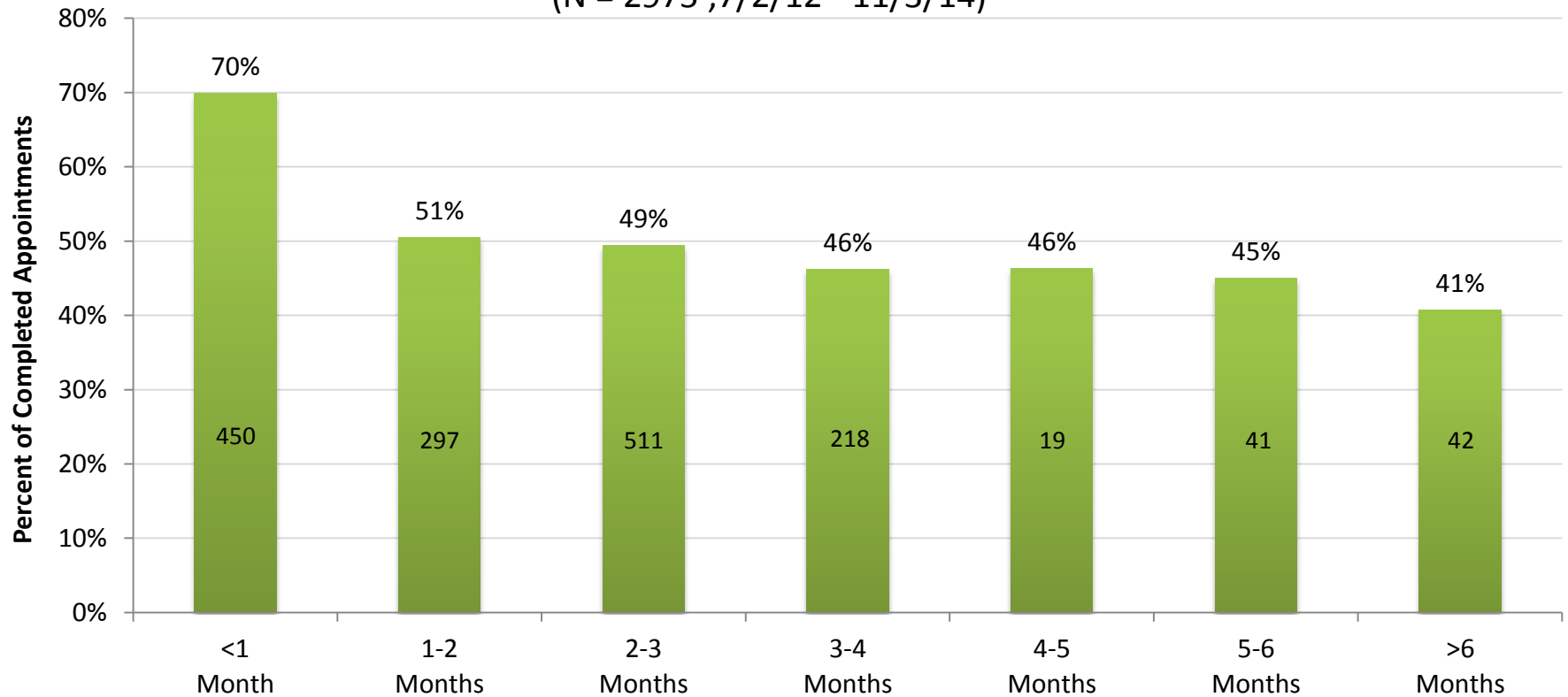
- Daily, year-long future reports
 - Create date
 - Appointment date
- See how the schedule evolves
- Challenges
 - Data
 - Obtaining the data
 - Patient, provider, and time perspective
 - Design
 - Future and past
- Still in progress



What is the probability of keeping an appointment based on when it was scheduled?

Percentage of Completed Appointments Based on Scheduled Date

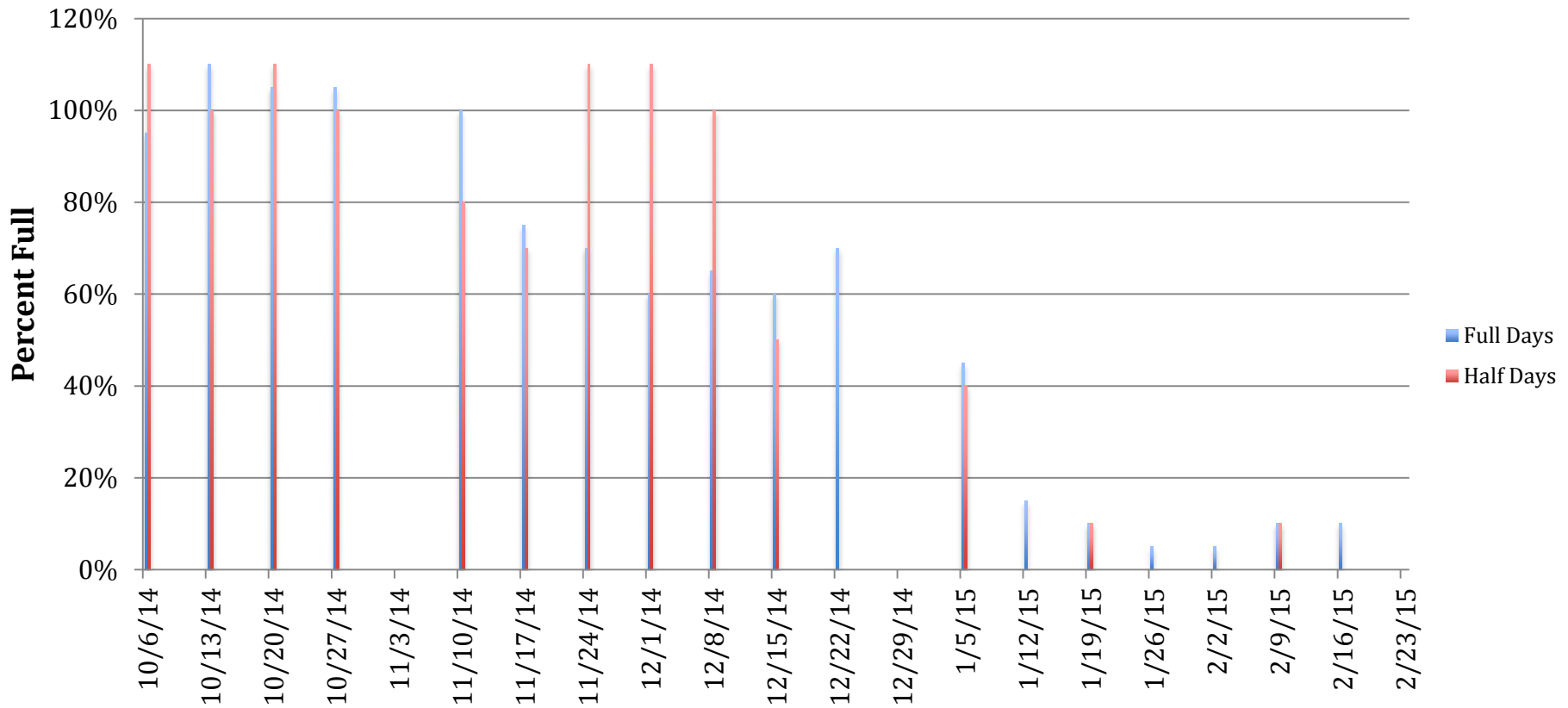
(N = 2975 ,7/2/12 - 11/3/14)



What is the capacity as of today?

Capacity as of October 6, 2014

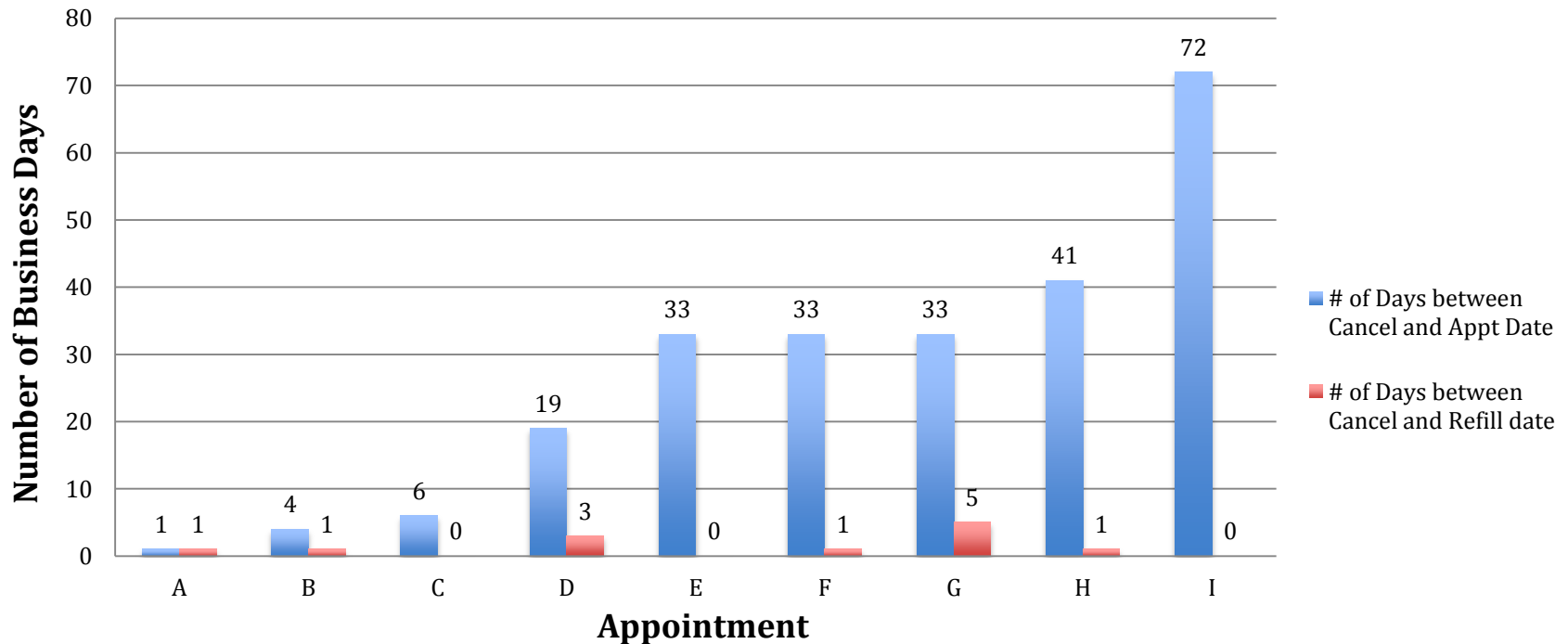
N = 51 Days



How often is a canceled slot refilled?

Number of Cancellations	Number of Cancellations without Refill	Number of Cancellations with Refill
24	15	9

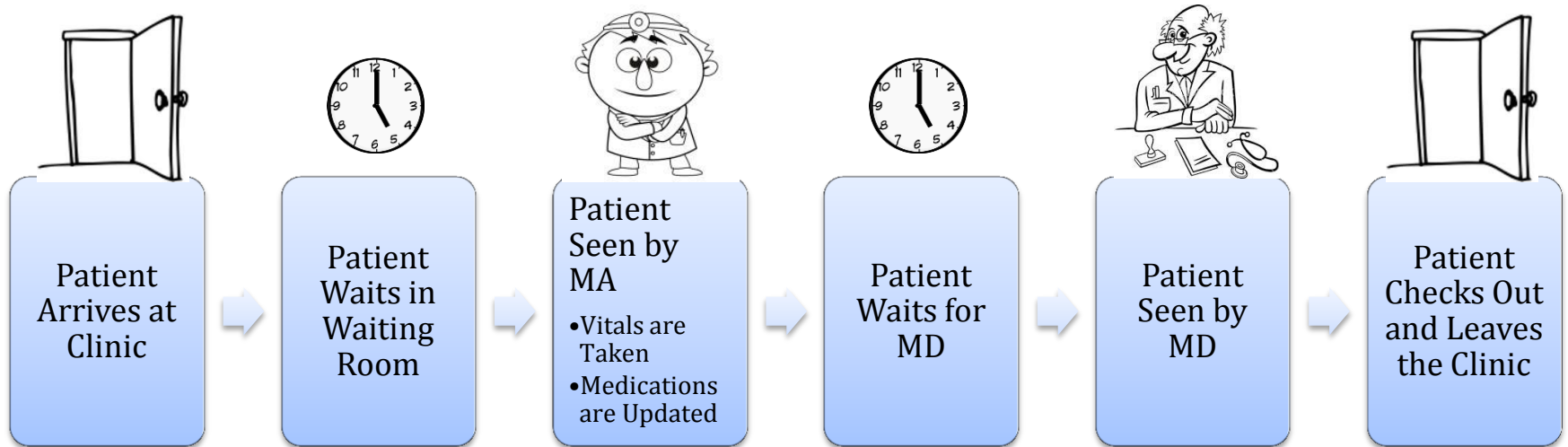
Cancellation Refill Rate



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Process



Simulation

Address the order in which patients are seen



Scheduling Scenarios

First Come First Service	<ul style="list-style-type: none">• Determined by arrival time
First Scheduled First Serviced	<ul style="list-style-type: none">• Determined by scheduled time• No-show if 30 minutes late
Hybrid	<ul style="list-style-type: none">• Determined by scheduled time unless late• Protected threshold

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Conclusion

- Weight Management Program
- Ability to look into the past and the future
- Observed patterns in WMP

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Future Work

- Database
 - phpMyAdmin
 - Larger scale analyses
 - Changes over time
- Optimal Scheduling procedures
 - Actual vs. requirements
 - Double booking
 - Distribution of slots
 - Reminder system
- Waitlist
 - Procedure
 - Refill canceled slots

Acknowledgements

- Center for Healthcare Engineering and Patient Safety (CHEPS)
- The University of Michigan Metabolism, Endocrinology, and Diabetes (MEND) Clinic
- The Seth Bonder Foundation
- The Doctors Company Foundation

CHEPS and the HEPS Master's Program

- **CHEPS:** The Center for Healthcare Engineering and Patient Safety
- **HEPS:** Industrial and Operations Engineering (IOE) Master's Concentration in Healthcare Engineering and Patient Safety offered by CHEPS
- CHEPS and HEPS offer unique multidisciplinary teams from engineering, medicine, public health, nursing, and more collaborating with healthcare professionals to better provide and care for patients
- For more information, contact Amy Cohn at amycohn@umich.edu or visit the CHEPS website at: <https://www.cheps.engin.umich.edu>



Feedback and Questions

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