

Reducing Patient Delays in an Outpatient Infusion Center

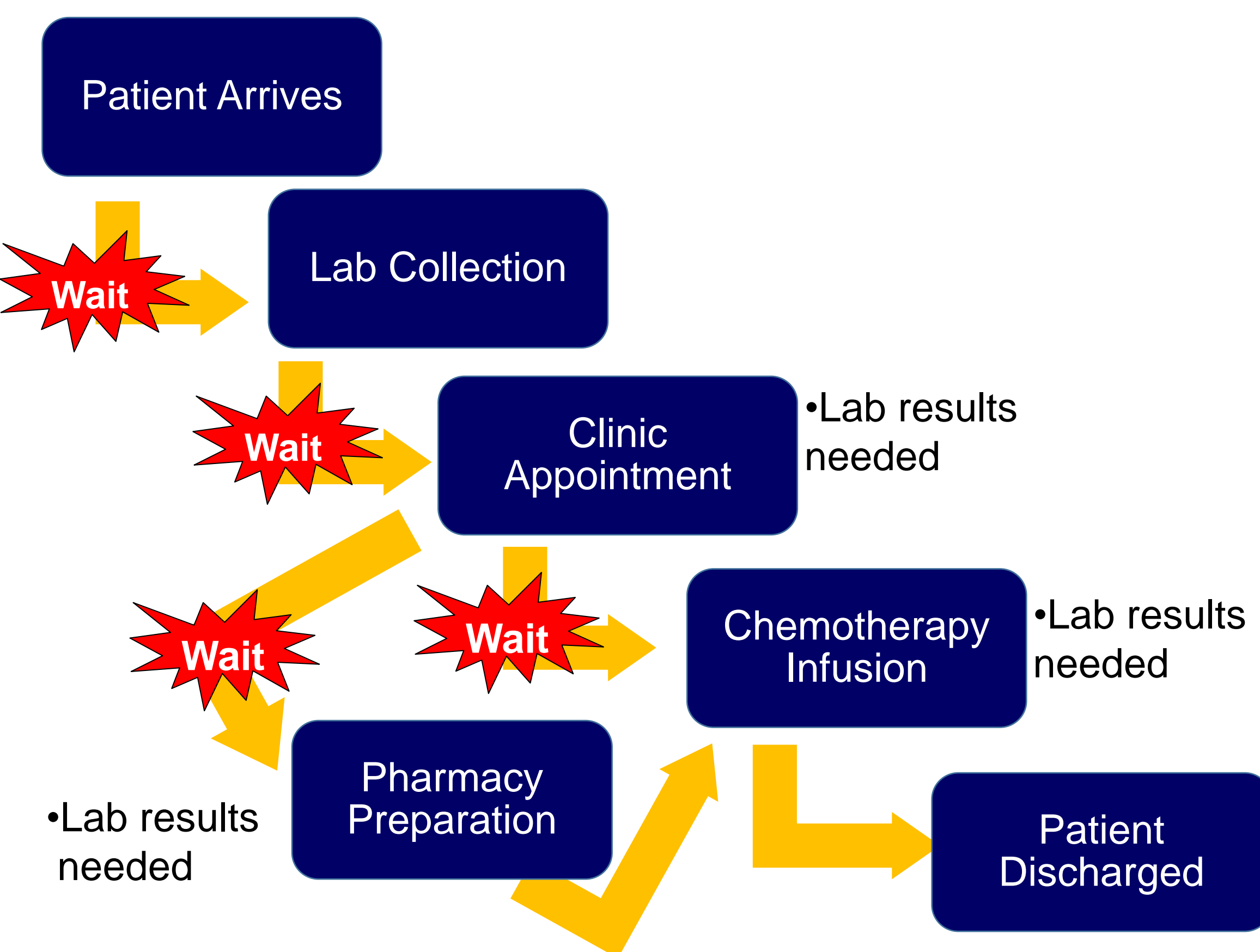
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Introduction

- Chemotherapy treatment demand exceeds ambulatory infusion capacity at University of Michigan's Comprehensive Cancer Center
- Receiving an infusion is a complicated process involving multiple departments with the potential for many process delays
- Frequently patients cannot proceed in the process due to a delay in receiving lab results
- Goal: Reduce delays in receiving lab results to improve patient flow through the outpatient chemotherapy infusion center

Background



Methods and Materials

- Observed current infusion center processes
- Analyzed administrative appointment data, electronic health record data, lab information system data, and patient demographic data
- Mapped processing for three frequently drawn infusion labs (CBCD, COMP, Type & Screen) which are processed in the three main clinical labs of Hematology Lab, Chemistry Lab, and Blood Bank
- Calculated patient travel time to Cancer Center and satellite lab facilities using Google Maps API

Results & Discussion

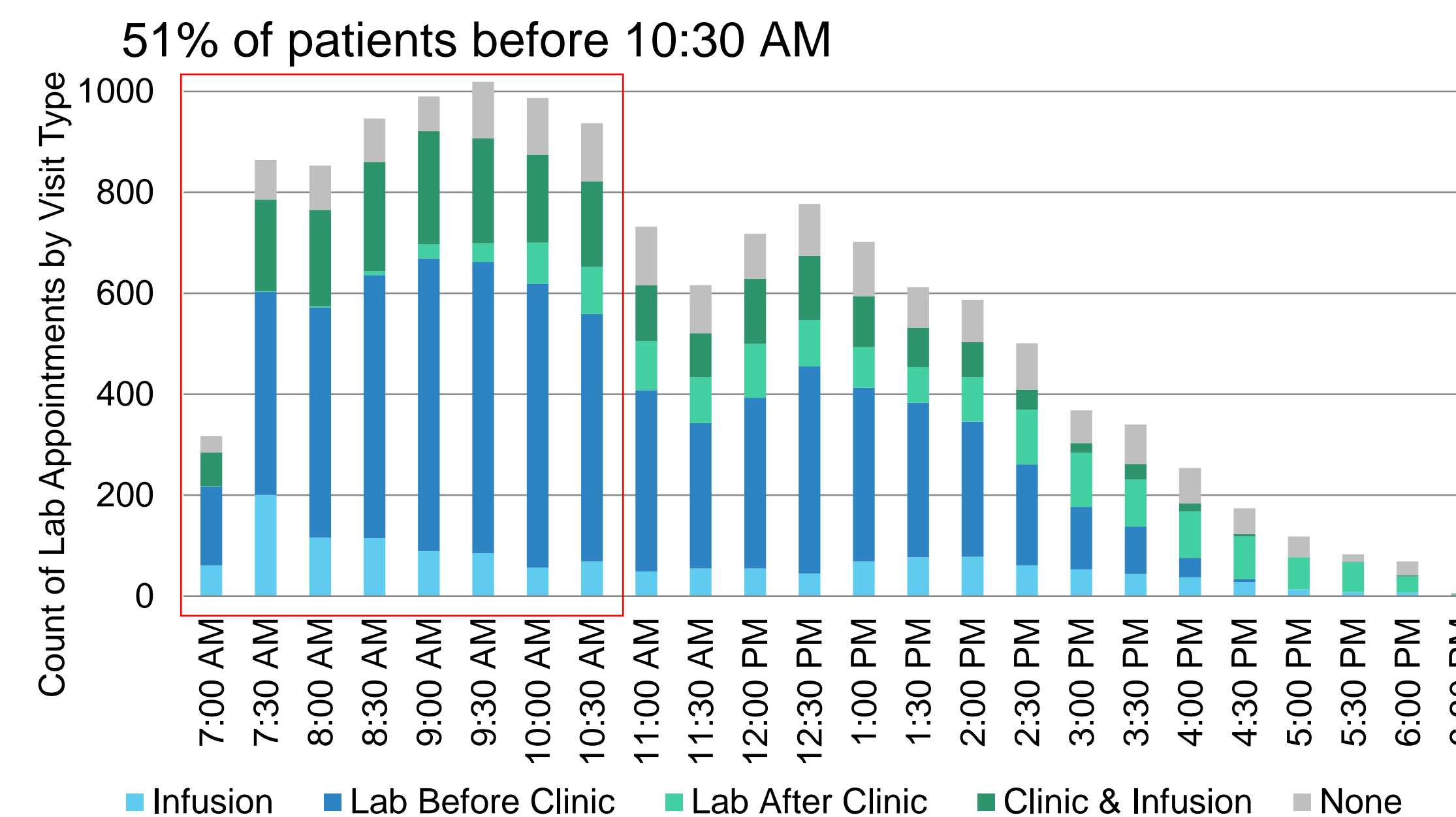


Figure 1. Cancer Center Lab Draw Volume Analysis

- Morning bottleneck exceeds lab draw station capacity and creates delays that propagate throughout the day
- Majority of patients utilizing the Cancer Center lab are patients only going to a clinic appointment (not an infusion appointment)
- Phlebotomist staffing peaks at 2 PM which is misaligned with patient demand

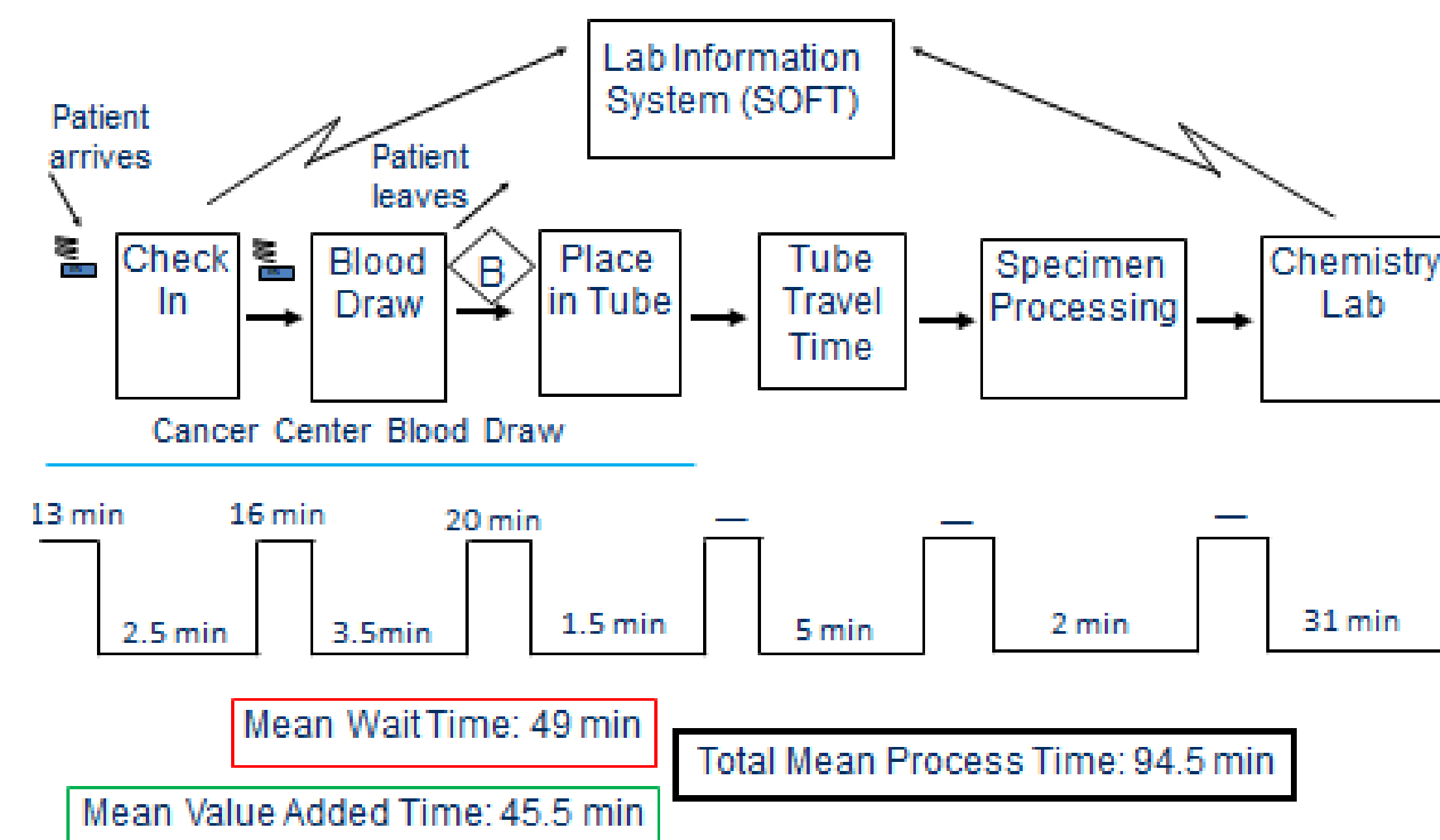


Figure 2. COMP Value Stream Map from Patient Arrival to Lab Resulted in MiChart

- 52% of total process time is wait time
- Delays occur in front end process of blood draw
- Current scheduling protocols mandate 1 hour between lab appointment and any following appointment
- Target turnaround time of 1 hour is not being met due to delays in blood draw

Table 1. Cancer Center Patient Travel Time Results

Driving Duration	Percent of Patients to Closest Lab Facility	Percent of Patients to Cancer Center
Less than 15 min	32%	10%
15 – 30 min	20%	19%
30 – 60 min	23%	36%
1 – 2 hours	15%	22%
2 – 4 hours	7%	9%
Over 4 hours	3%	4%

- With 32% of patients within 15 minutes of a lab draw facility uncoupling lab visits could be a feasible option for a significant amount of patients

Conclusions & Future Work

- Labs are delayed mainly in the blood draw portion of the process. We are working with blood draw management and front line staff to implement process improvements to reduce delays such as reengineering processes, adding staff, and reducing batching
- Uncoupling lab visits can be a solution to reduce patient wait time on the day of appointment and to potentially reduce the Cancer Center Blood Draw's peak workload in the morning.

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