Bilirubin turnaround time in an outpatient pediatric clinic:

improving efficiency of time-sensitive lab results

Samantha Curtis

Unified Quality Improvement Symposium

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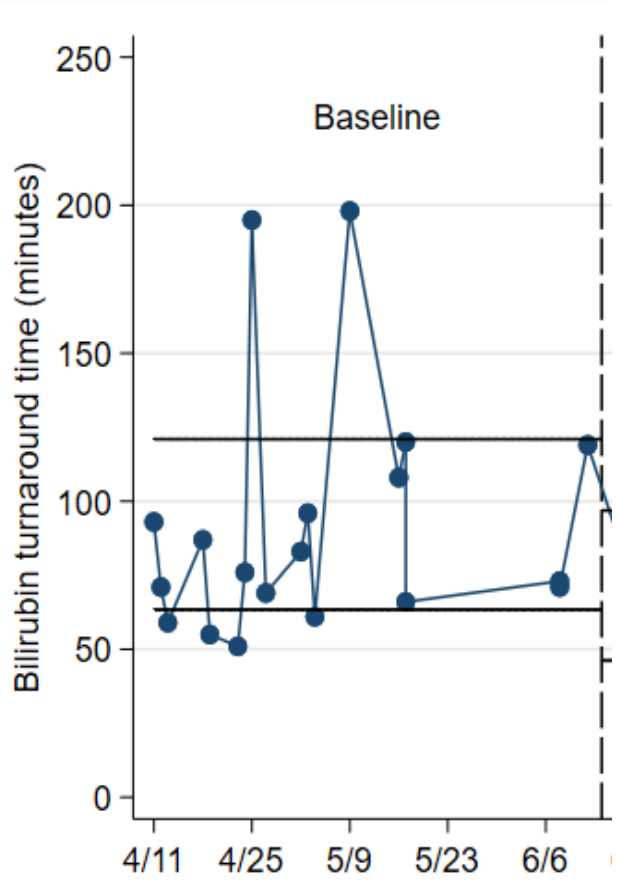
Collaborative Team Members

- Samantha Curtis, Medical Student
- Amanda Higginson, MD, Physician
- Dmitry Tumin, PhD, Research Associate Professor
- Fraley Greene, Mary Mayancsik, Laboratory Technologist
- Donna Spain, Nurse Specialist

Background

- 60% of newborn infants exhibit clinical jaundice annually
- AAP recommendation
- ECU's Outpatient Pediatric Clinic bilirubin specimen processing times

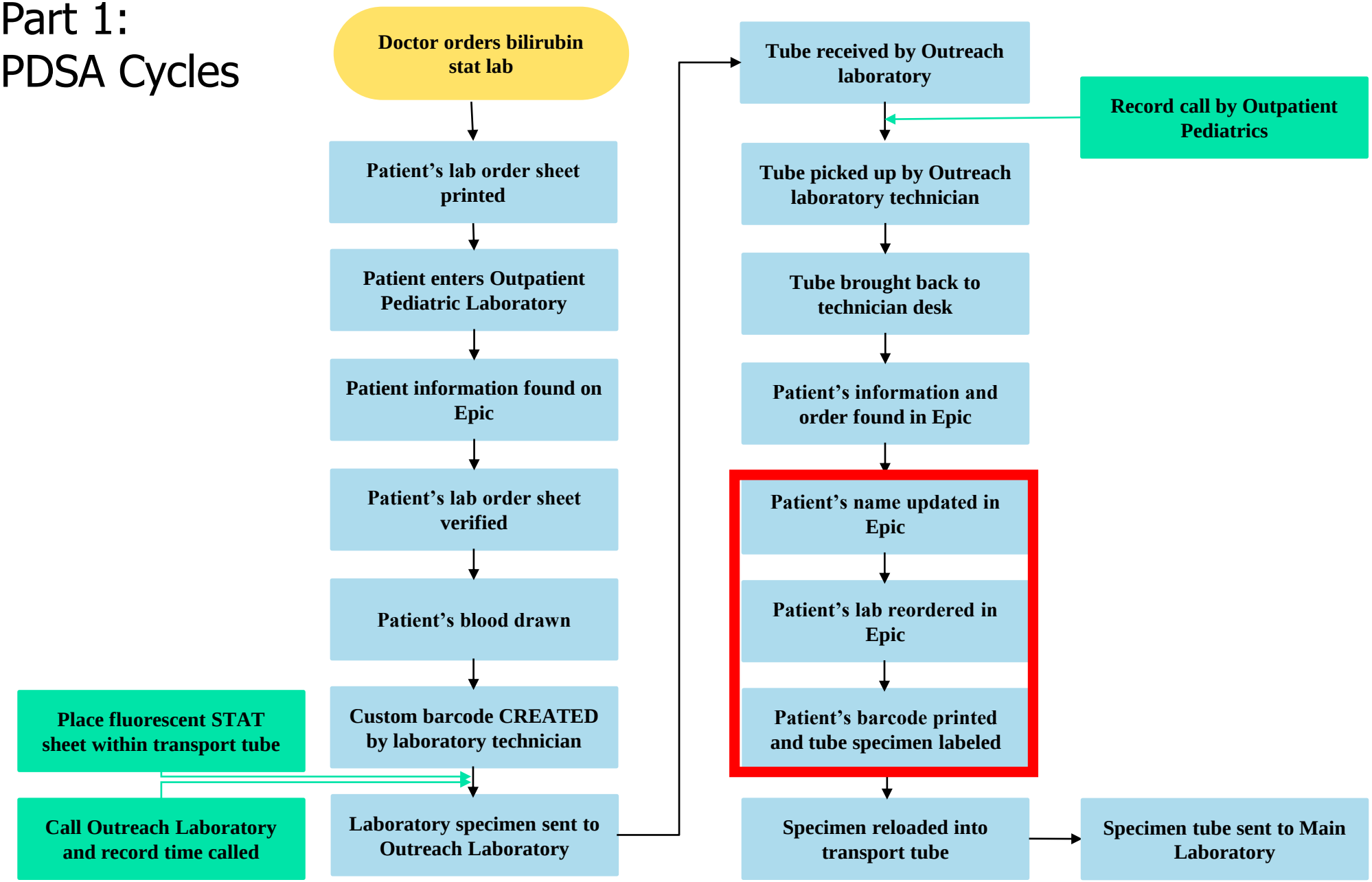


AIM Statement with Numerical Goals

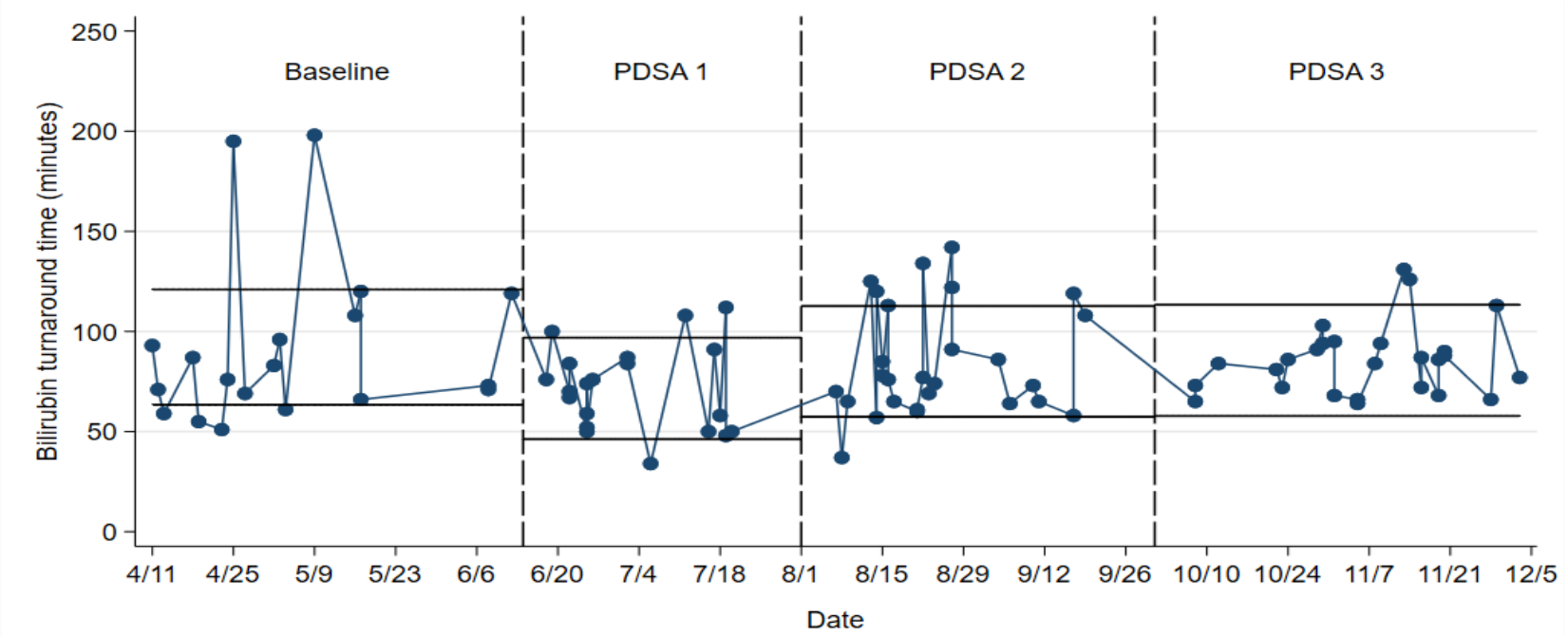
Part 1 Aim Statement (PDSA #1-3): To decrease the mean turnaround time (TAT) from bilirubin orders originating from the ECU Pediatrics Outpatient Clinic to result report in the outpatient electronic medical record (EMR) by 10 minutes over 8 months.

Part 2 Aim Statement (PDSA #4-5): To decrease the variability in TAT from bilirubin orders originating from the ECU Pediatrics Outpatient Clinic to result report in the outpatient electronic medical record (EMR) by 50% over 3 months.

Part 1:
PDSA Cycles



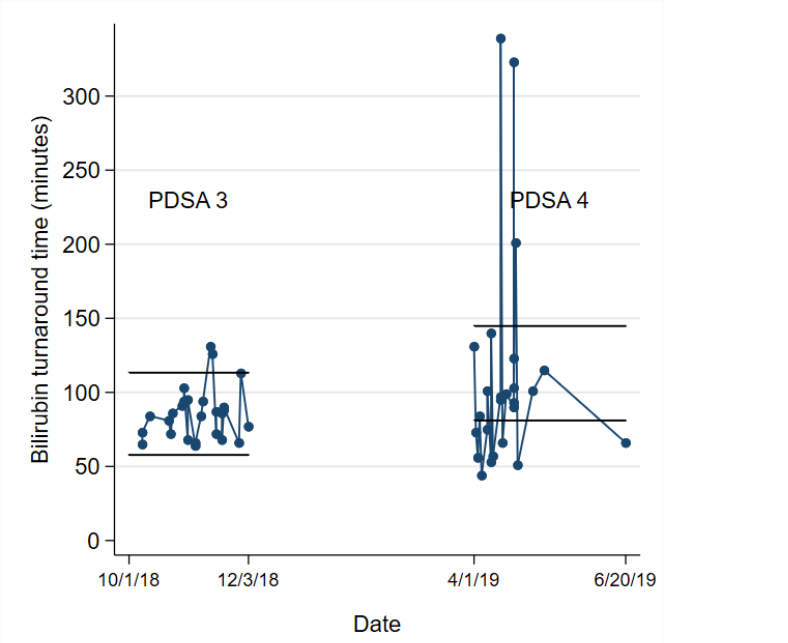
Outcomes for Part 1



- Pre-intervention: 92±42 minutes (n=19)
- Post-intervention: 81±23 minutes (n=73)
- Mean TAT was not statistically significant t-test p=0.144; 95% CI: -25, +3)
- Significant decrease in the standard deviation F-test of equal variances p<0.001

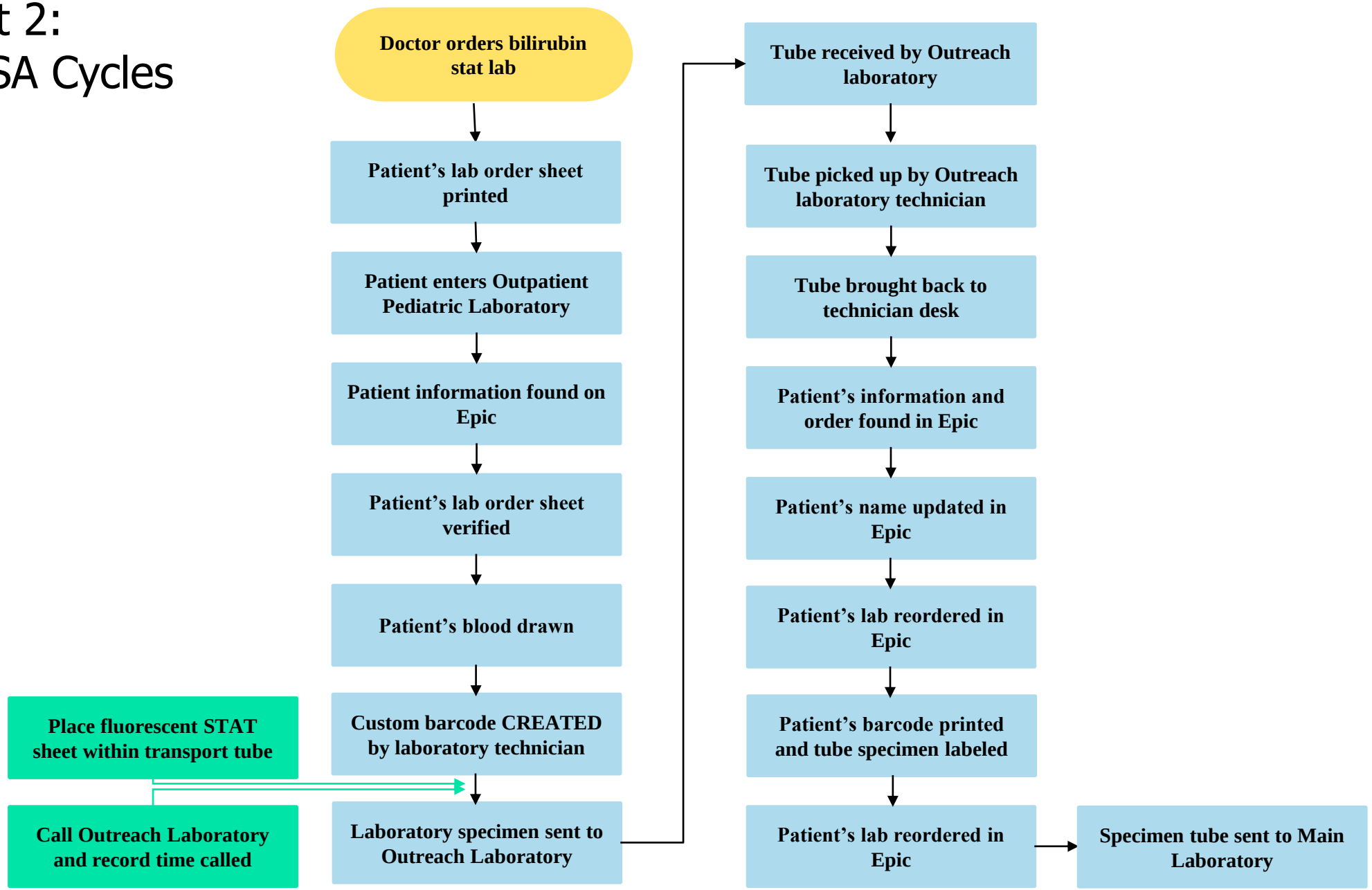
Development of Part 2

- Residents noticing increased TAT with ”stat” bilirubin labs
- High turnover of workers in the Pediatric Outpatient setting after implementation of PDSA cycles 1-3
- Assess the sustainability of PDSA cycles 1-3

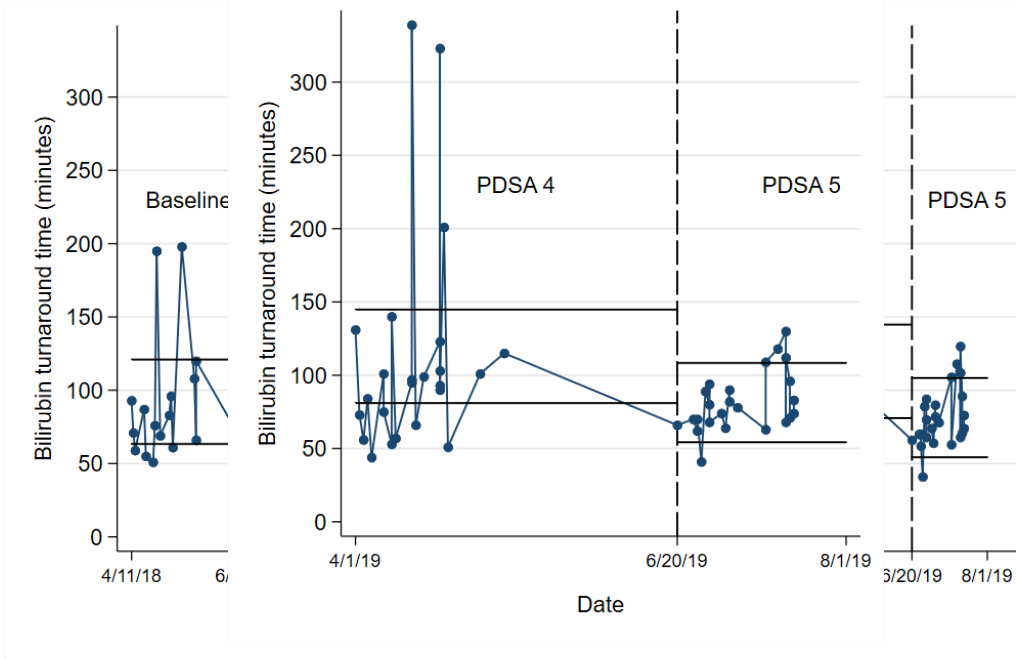


Part 2 Aim Statement (PDSA #4-5): To decrease the variability in TAT from bilirubin orders originating from the ECU Pediatrics Outpatient Clinic to result report in the outpatient electronic medical record (EMR) by 50% by December 2019.

Part 2:
PDSA Cycles



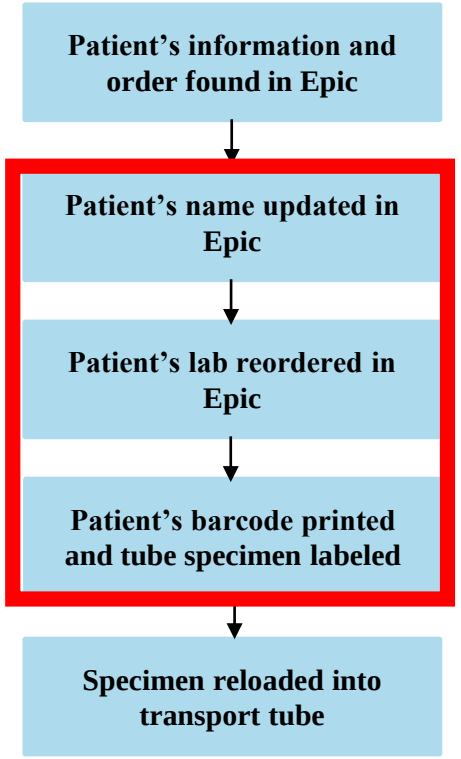
Outcomes for Part 2



- Pre-intervention: 113±75 minutes (n=24)
- Post-intervention: 81±20 minutes (n=24)
- Mean TAT was not statistically significant t-test p=0.054; 95% CI: -64, +1)
- Significant decrease in the standard deviation F-test of equal variances p<0.001

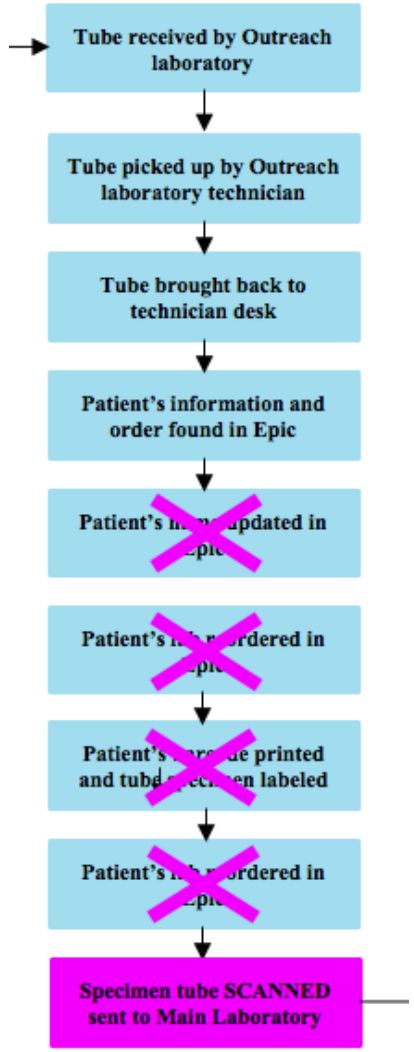
Lessons Learned Through QI Efforts

- Technological Barriers
  - EPIC vs. Sunquest
  - Time spent duplicating tasks
- Communication Barriers
  - Outpatient Pediatric Clinic Laboratory and Outreach laboratory
  - Project team and Outpatient Pediatric Clinic Laboratory



Next Steps

- Analyze the impact of Epic Beaker on bilirubin TAT
- Analyze the sustainability of previous PDSA cycles during PDSA 6
- Determine how current PDSA cycles affect other laboratory results



Questions?

Presenter Contact Information

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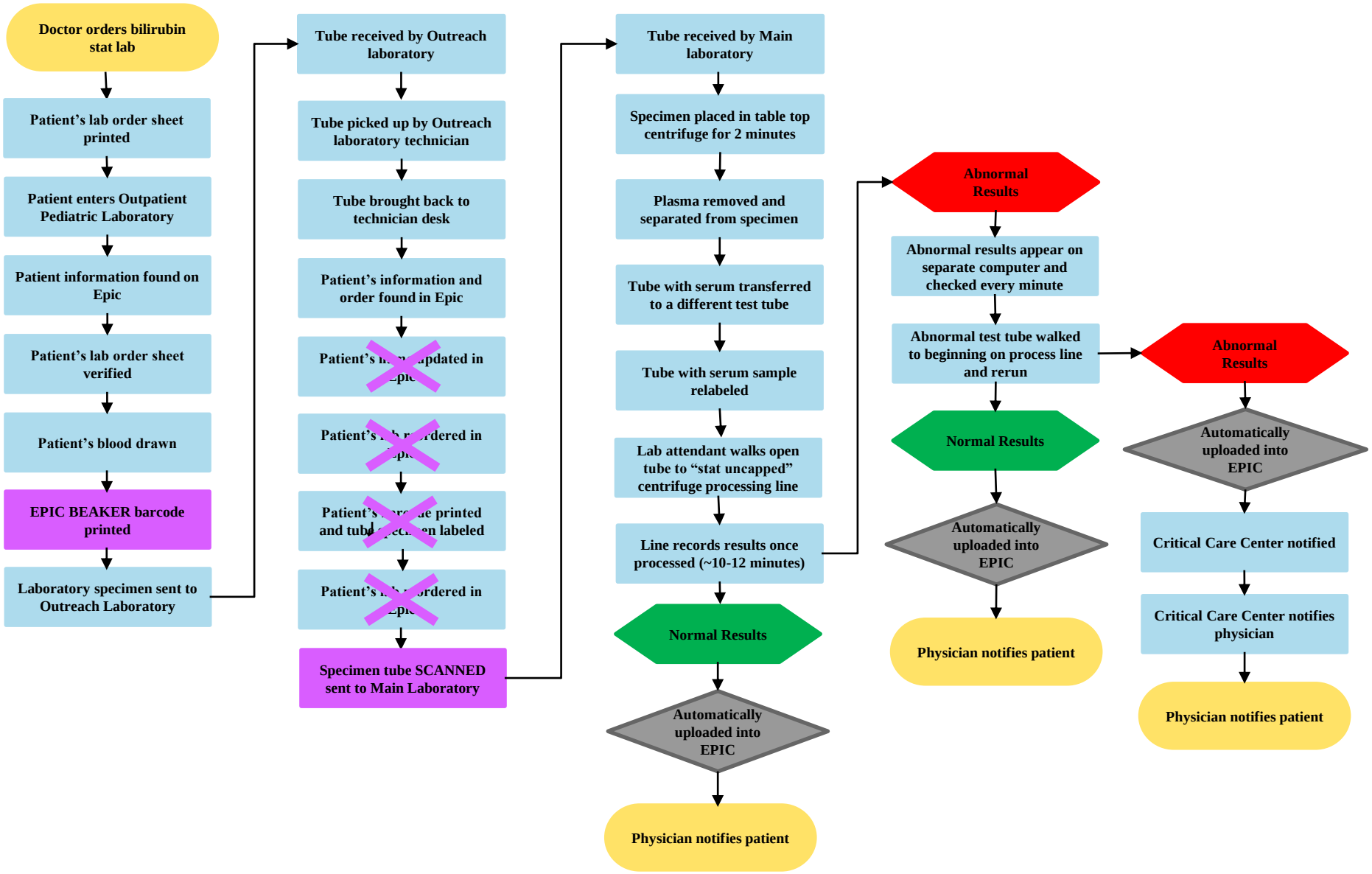
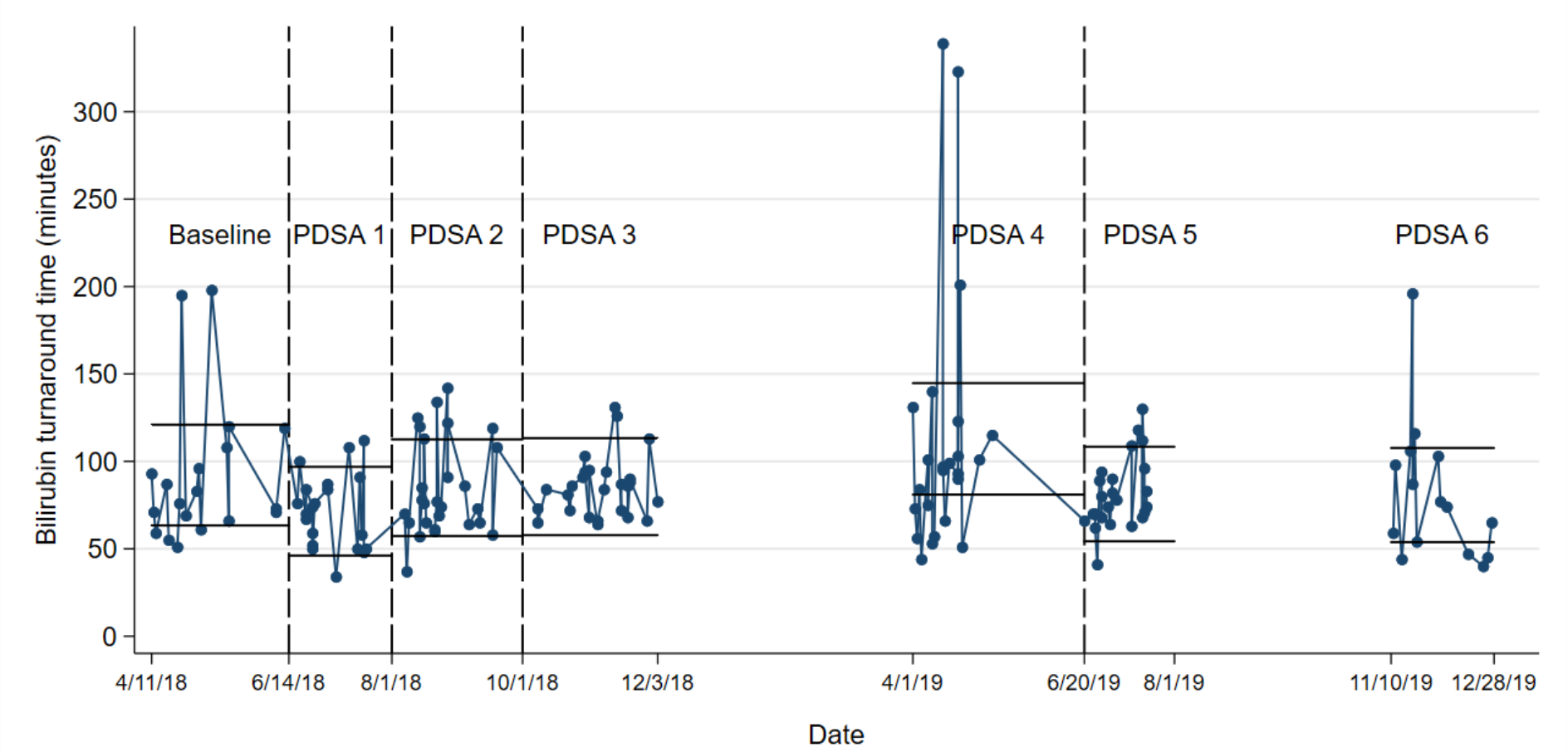
Changes with Epic Beaker





PDSA 6:

- Mean TAT: 81(40) minutes
- Comparing PDSA 5 vs. PDSA 6:
  - Test of means p=0.951
  - Test of variances p=0.004