

# Improving Patient Care Through Reduction in Medication Dispensing Turnaround Time

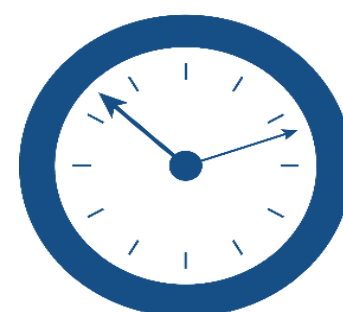
Red Deer Regional Hospital Pharmacy

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## The Opportunity



On average **1000** medication orders are processed at Red Deer Regional Hospital Pharmacy each day.



It took pharmacy an average of **3-hours** to process a single medication order for a patient.

**Problems** we experienced with a 3-hour medication turnaround time:

- Missed or late doses;
- High volume of calls from nursing;
- Staff frustration and overtime hours.



Using **lean methods**, we engaged our frontline staff and leadership in an idea generation activity. **38-ideas** and opportunities for improvement were identified.

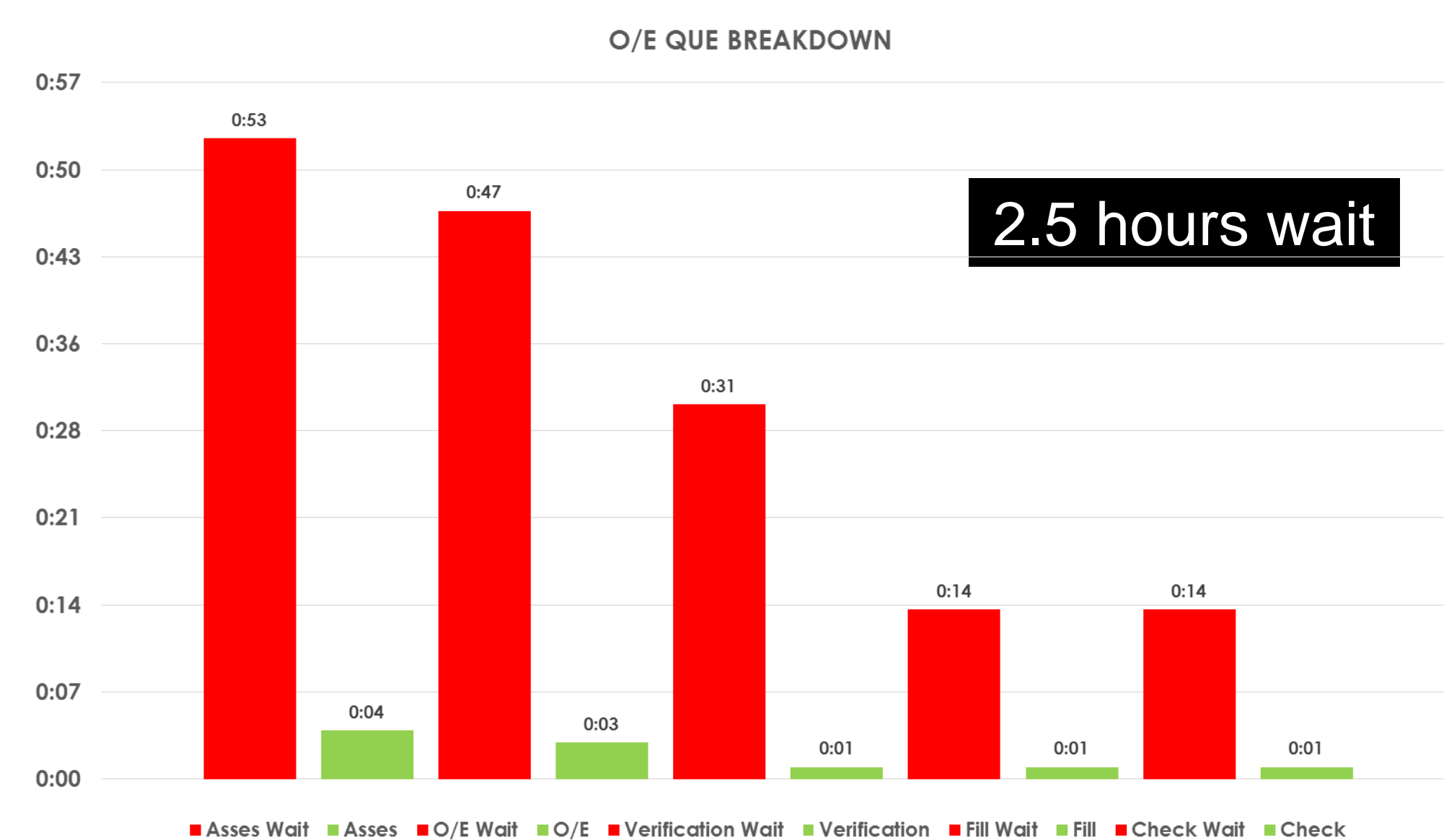
## Our Target

The frontline staff set a goal of **75-minutes** for medication turnaround time.



## Our Discovery

Our system had high wait times compared to the actual processing time.

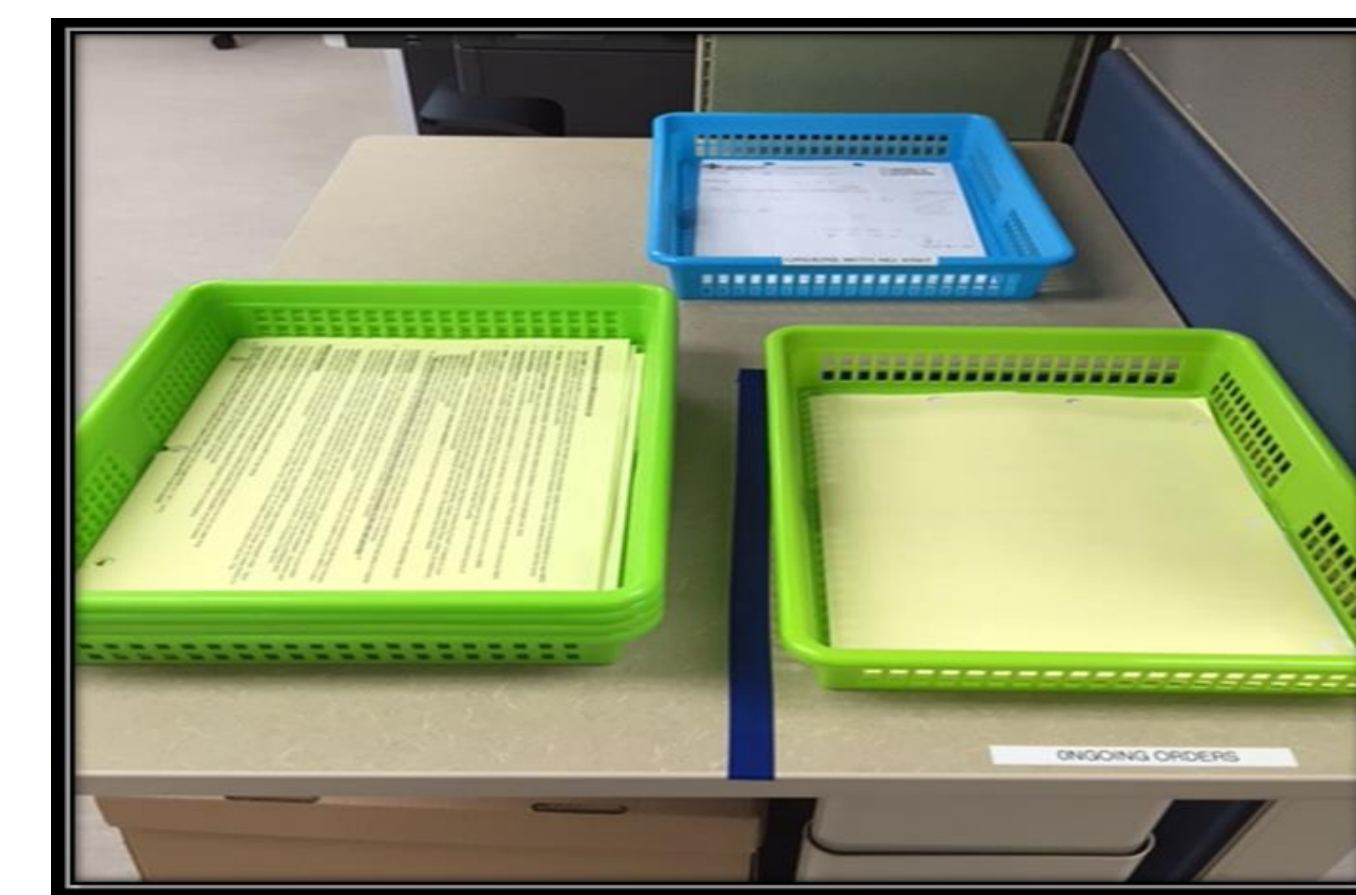


## The Method

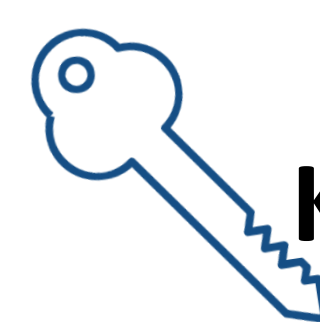
**TAKT time** and **First-in First-out (FIFO)** were used to reduce wait times.

TAKT time was calculated to be 65 medication orders every 30 minutes to meet the current demand.

The TAKT time system was used to create **30 minute** work bundles that allowed staff to visually track workload.



**5S** The team standardized resources and redesigned the work-area. This facilitated a POD/CELL style layout design that paired a Pharmacist and Technician to facilitate workflow.



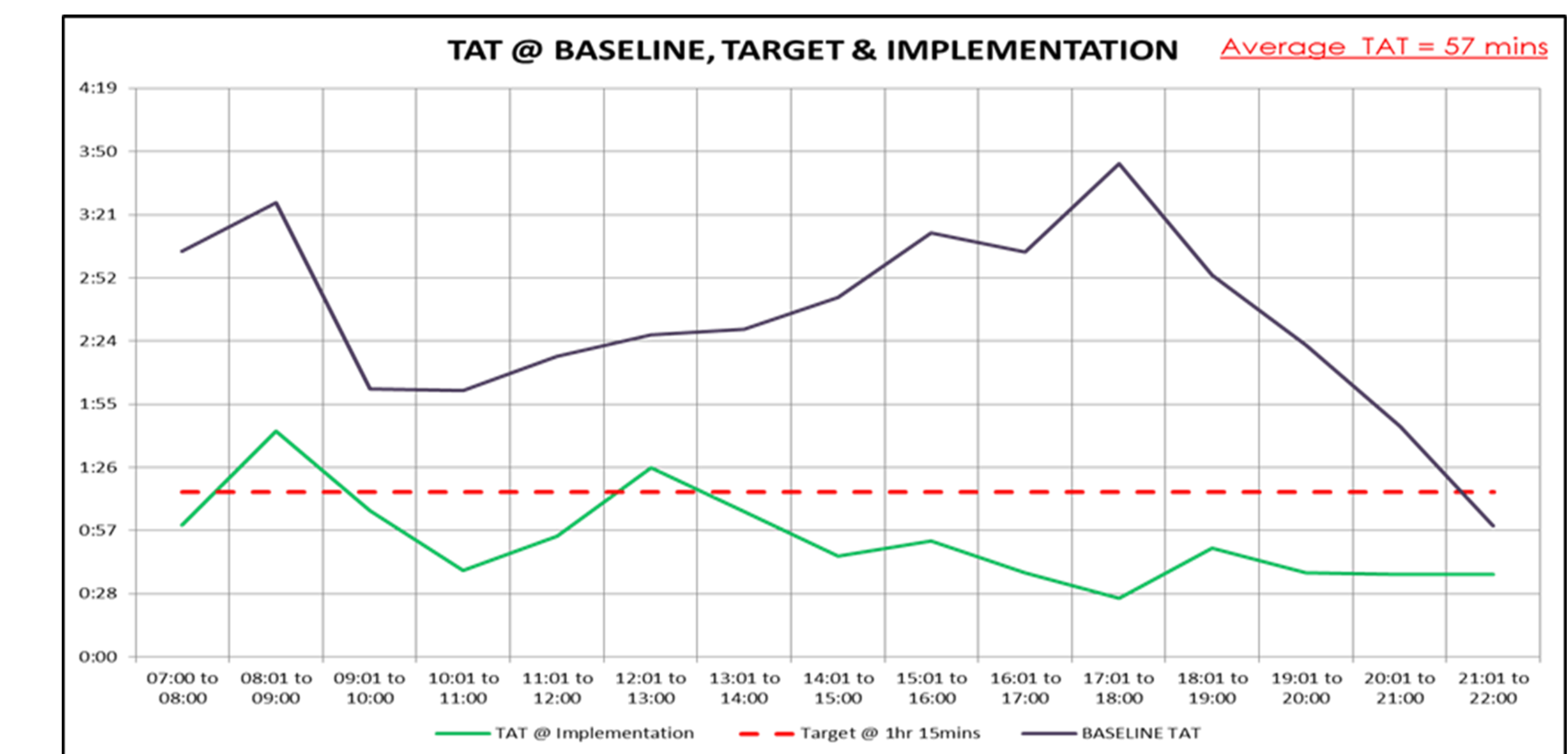
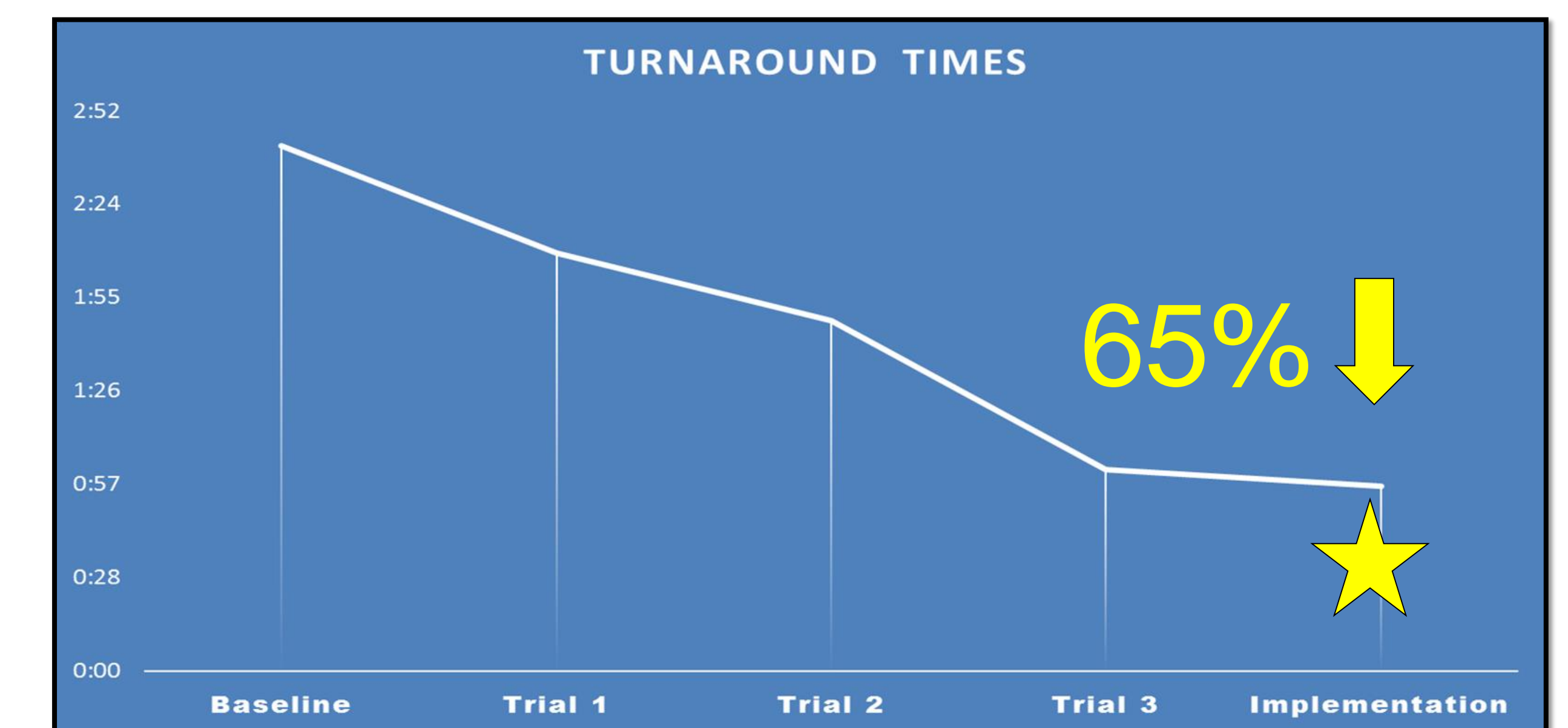
## Key Issues and Implemented Solutions are Organized Below

Issue	Symptoms	Solution implemented at trial	Observation
Consolidation of Activities	Excess order wait times	Resequencing the process by combining two activities into 1 Reallocation of staff to create a third processing team.	Eliminated 35 mins of wait-time.
In-balance of workload and resource	Backlog build up	Introduced a 3 work-cell operation system during peak hours.	Balanced Demand against Capacity.
Excessive Wait in the system	High wait times (2.5 hours) compared to processing time of 10 minutes	Introduced the concept of TAKT time. Color coded Bin system to control inventory of unfulfilled order and facilitate work flow	Reduced backlog build up in the process build up. Allowed work to be done at steady rate. Concept of team effort
Excessive Sorting	Wasted time	Introduced First In First Out (FIFO) processes	Reduced wait in the system

## The Results



The **team** achieved a progressive decline in turnaround time over the course of the 3 trials using PDSA cycle. At implementation, **65%** reduction in turnaround time was achieved.



## Conclusion



The application of lean methods such as TAKT time, cell, FIFO, one piece flow, resource and workload balancing, **resolved the high medication turnaround time** at the Red Deer Regional Hospital Pharmacy.



**Patients and Nursing** staff benefited from improved service due to the significant reduction in turn around time.



The pharmacy also **decreased overtime costs** although this was not reported as part of the project deliverables.