



TEXAS
Health and Human
Services

Texas Department of State
Health Services

CQI Texas

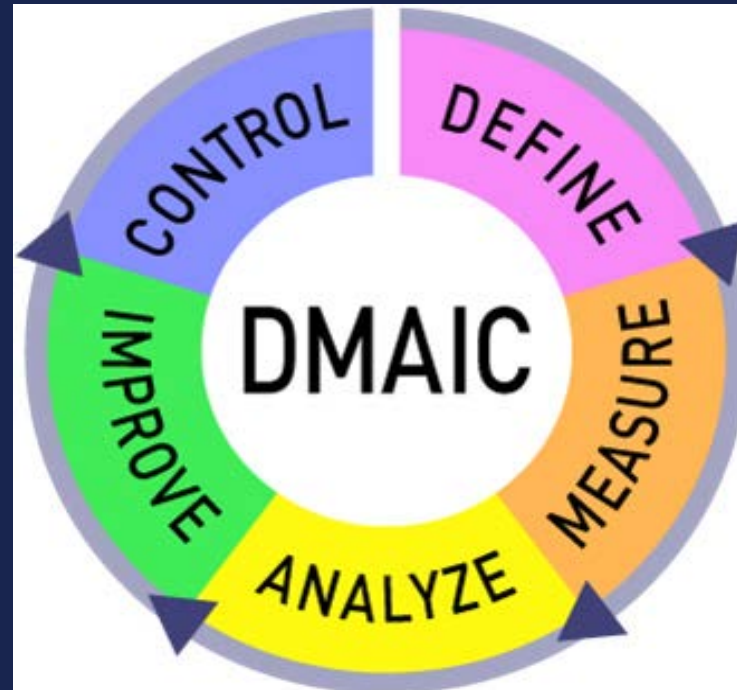
Improving Timeliness through a
Systematic Investigation of Process
Workflows

Lean Six Sigma



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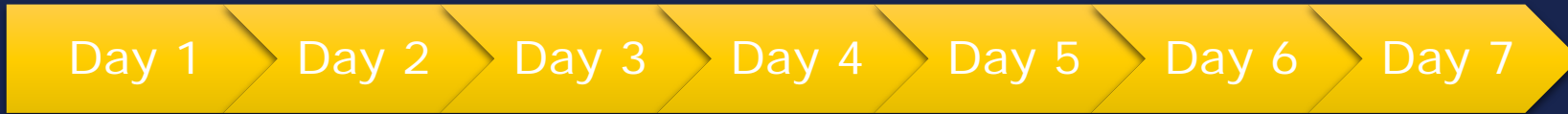


Define: Purpose



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Birth



Collection



NBS Lab



Time
Critical
Positives

29.8%



Time
Sensitive
Positives

71.2%



All
Results

12.1%

Goal = 95%

Define

Constraints Analysis



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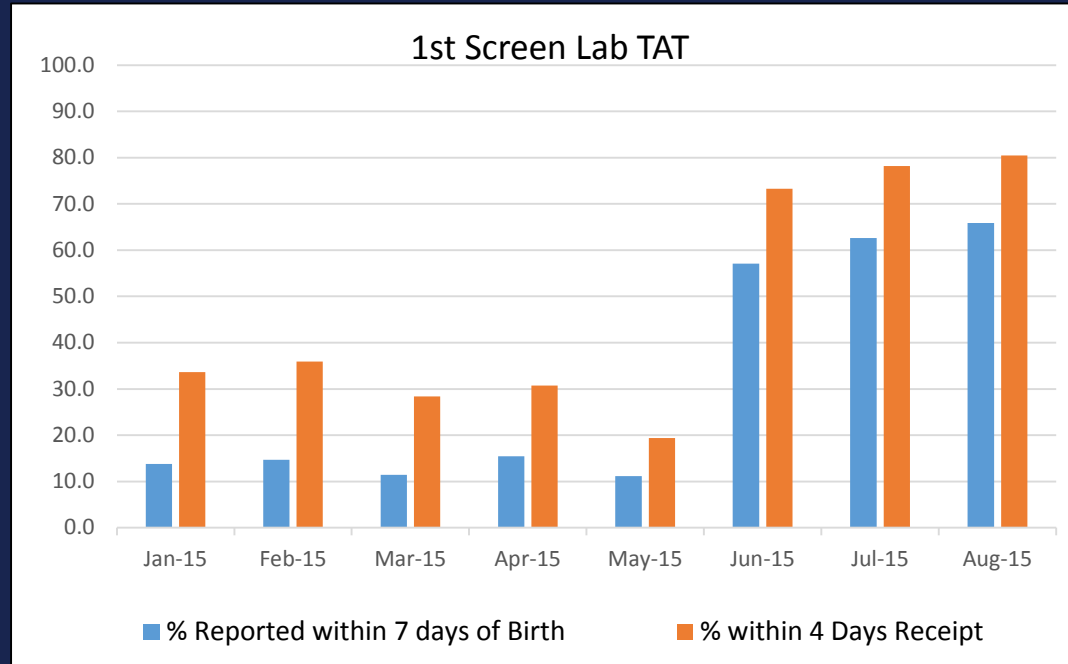


Low Hanging Fruit

Report Generation Time

8 am only

8 am and 3 pm



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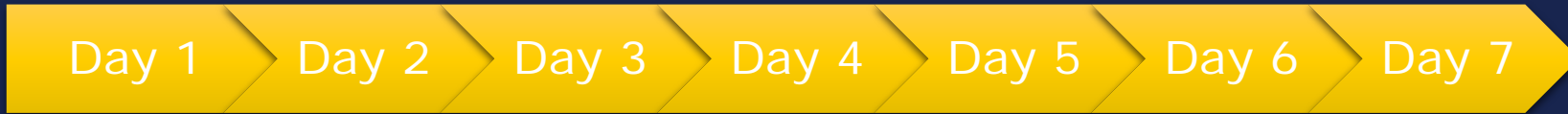
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Define: Purpose



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Time
Critical
Positives

29.8%



Time
Sensitive
Positives

71.2%



All
Results



58.1%

Goal = 95%

Define: Constraints Analysis



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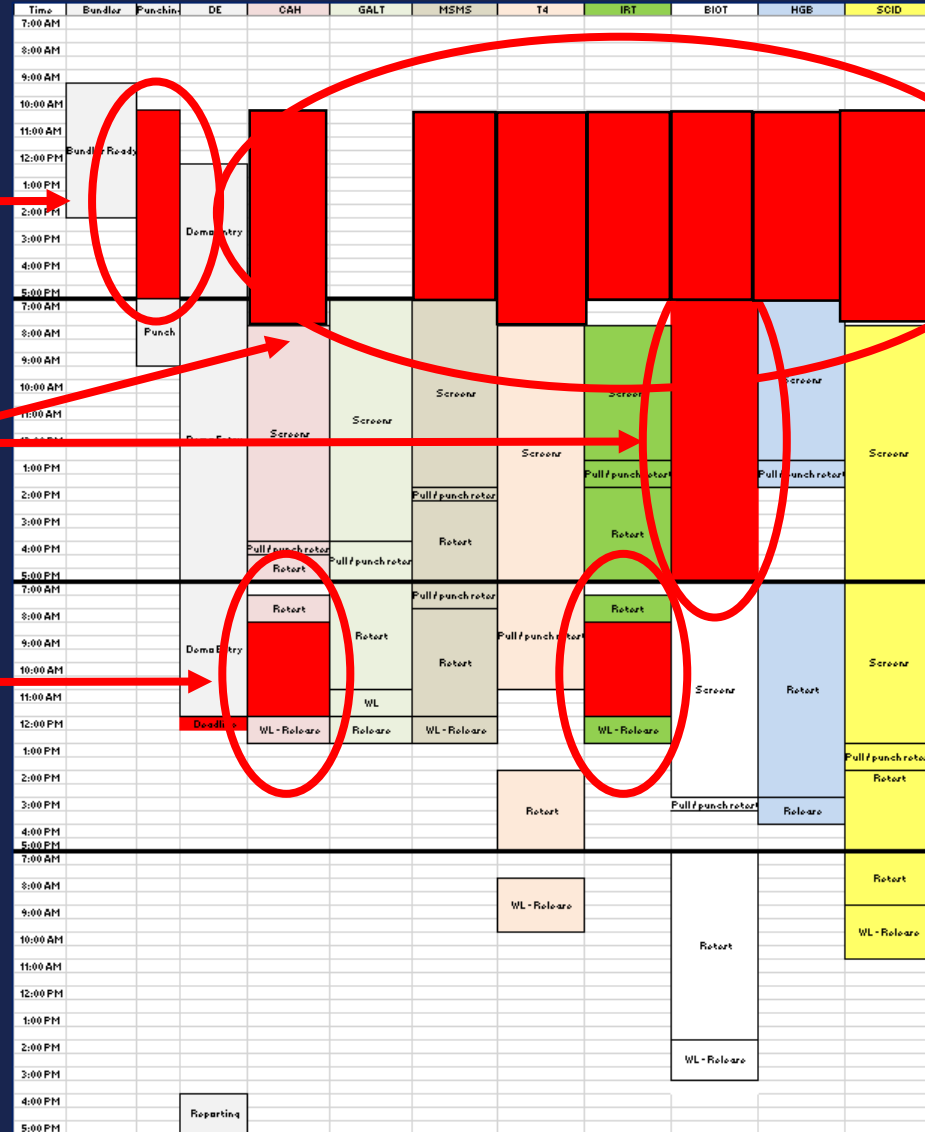
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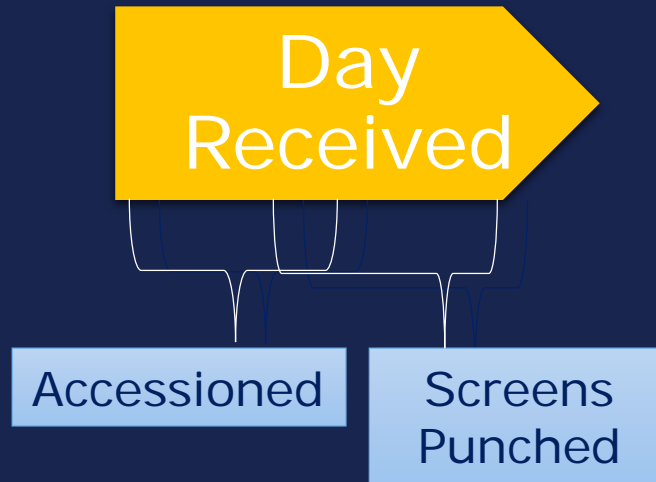
Initiation of
Punching

Start of testing

Data Entry
deadlines



Define: Goal



Goal

Increase the % of:

1. 1st screens punched same day. 16.3% → >50%.
2. Time critical positives punched same day. 12.1% → >75%.

Measure



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Measure: **Lean Assessment**

1. Courier delivery times
2. Check- In bundle ready times
3. Avg. specimen volumes by day of week
4. Punching completion times:
 - a. Multipuncher (2, 4, 6 plates)
 - b. Panthera (8 plates)



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Measure

Wisdom of the Org

1. Current / Projected workflows
2. Current / Projected staffing maps
3. Recommendations / Issues / Concerns



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Analyze



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Analyze

Workload
Models



Bundle
Availability

Time	% of Bundles Ready	Avg. Specimens Ready
10:30	21	515
13:00	61	1495
14:30	99	2426

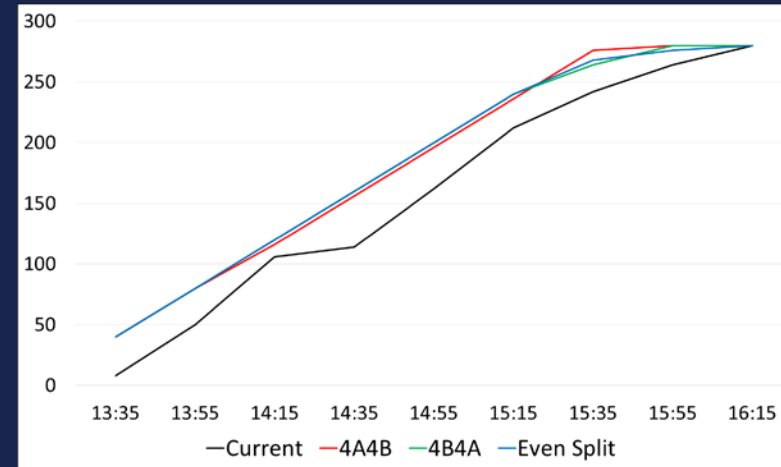


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Punching Models



Staff Maps – Puncher Availability

[illegible]

Improve



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Improve: Logistics

- Redefined accessioning deadlines
- Established continuous workflow
- Defined bundle pickup and delivery tasks / times
- Defined:
 - Punching oversight requirements
 - Communications



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Improve: **Test Categories**

Elimination of Requested Repeats (RRs)

- Systemwide inefficiencies
- No time benefit if all specimens punched same day.
- Specimens marked as Requested Repeat given accessioning priority



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Specimens marked test category 3 – Previous abnormal

Day Punched	Totals	Percent
Same Day	581	94.63%
2nd Day	22	3.58%
3rd Day	10	1.63%
4th Day	1	0.16%

Improve: **Staffing**

- 3 additional Positions
- Adjusted staff hours
- Additional Saturday staffing

Area	Pre-Chip	Full Workload	Reduced Workload
Endos	3	5	4
G&B	3	4	3
SCID	3	4	3
HGB	0	4	4
MSMS	4	4	4
Spec Log	0	2	2
Total	13	23	20



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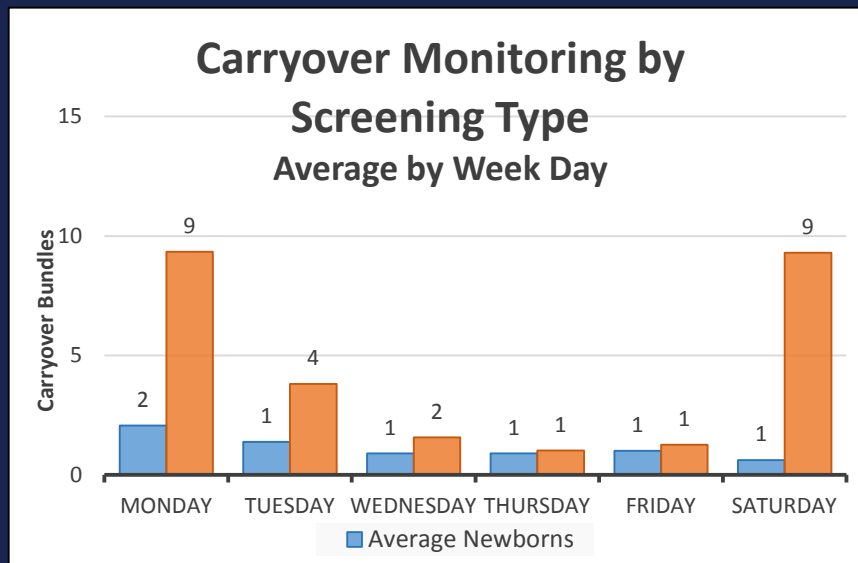


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Improve Reduced Saturday Workload

- No negative impact on 1st screens
- Normalizes Monday punching workflow
- Reduces weekend staffing
- Reduces time needed for demo entry to complete entry of workload received on Saturday



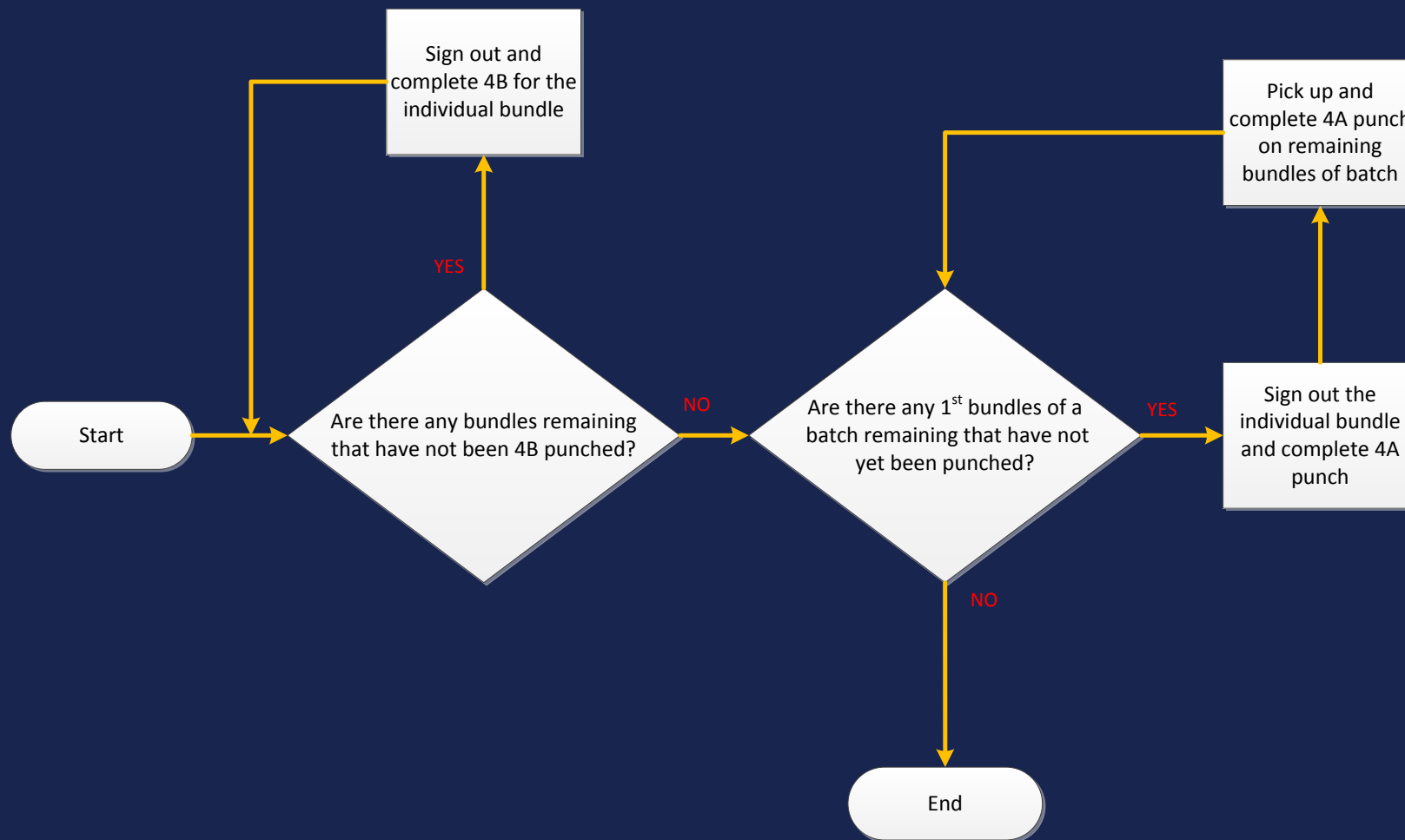
Change in Carryover %		
Specimen Category	1sts	2nds
Estimated	0	11.0
Actual	0.1	15.4



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Improve: Punching / Sampling





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Improve: Punching / Sampling

Time	Receiving	Punching	CAH Retest	CAH Data	CAH AD	IRT Retest	IRT Data	IRT AD1	T4 WL1	T4 WL2	T4 Retest	T4 Puncher 1	T4 Puncher 2
7:30 AM	Receive / Accession		CAH Screen Review	CAH Screen Review	CAH Plate prep & std and ctrl	IRT Screen Review	IRT Screen Review	IRT Plate prep & std and ctrl	T4 Screen Review	T4 Screen Review		T4 Plate prep & std and ctrl	
8:00 AM			Number + Punch	Pull CAH Retests		Number / Punch IRT Retest	Pull IRT Retests		T4 Numbering /Positive Mailed Report	T4 Numbering	Pull / Punch Retest		
8:30 AM			CAH Retests	Positive Mailed Report	Clean / Prep CAH Machines	Clean / Prep IRT Machines	Clean / Prep IRT Machines					Clean / Prep IRT Machines	
9:00 AM			Load CAH Retests			Load IRT Retest	Positive Mailed Report						
9:30 AM													
10:00 AM													
10:30 AM		Punch		Lunch	Lunch	Lunch		Lunch	Lunch	Lunch	Lunch	Lunch	Round 1 punch
11:00 AM													
11:30 AM													
12:00 PM				CAH Work List*	CAH Work List*		IRT Worklist*	IRT Worklist*					Lunch
12:30 PM													
1:00 PM			CAH Release*			Release IRT*	Lunch		T4 Worklist	T4 Worklist	Pull / Punch Retest	Round 2 punch	Round 2 punch
1:30 PM		Punch			Round 2 punch			Round 2 punch		*T4 Release			
2:00 PM			Clean / Prep CAH Machines						Clean / Prep T4 Machines		Load Retests		
2:30 PM													
3:00 PM													
3:30 PM			Load CAH Screens	Load CAH Screens		Load IRT Screens	Load IRT Screens			Load T4 Screens		Load T4 Screens	Load T4 Screens
4:00 PM													
4:30 PM													
5:00 PM													

Mon - Fri

10:00 - 12:15						1:15 - 3:45					
G&B	Endos	SCID	HGB	MSMS	Total	G&B	Endos	SCID	HGB	MSMS	Total
2	1	1	1	2	7	2	3	1	1	1	8

Saturday

10:00 - 12:15						1:15 - 3:45					
G&B	Endos	SCID	HGB	MSMS	Total	G&B	Endos	SCID	HGB	MSMS	Total
1	1	0	1	1	6	0	3	1	1	0	5

Control



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Control

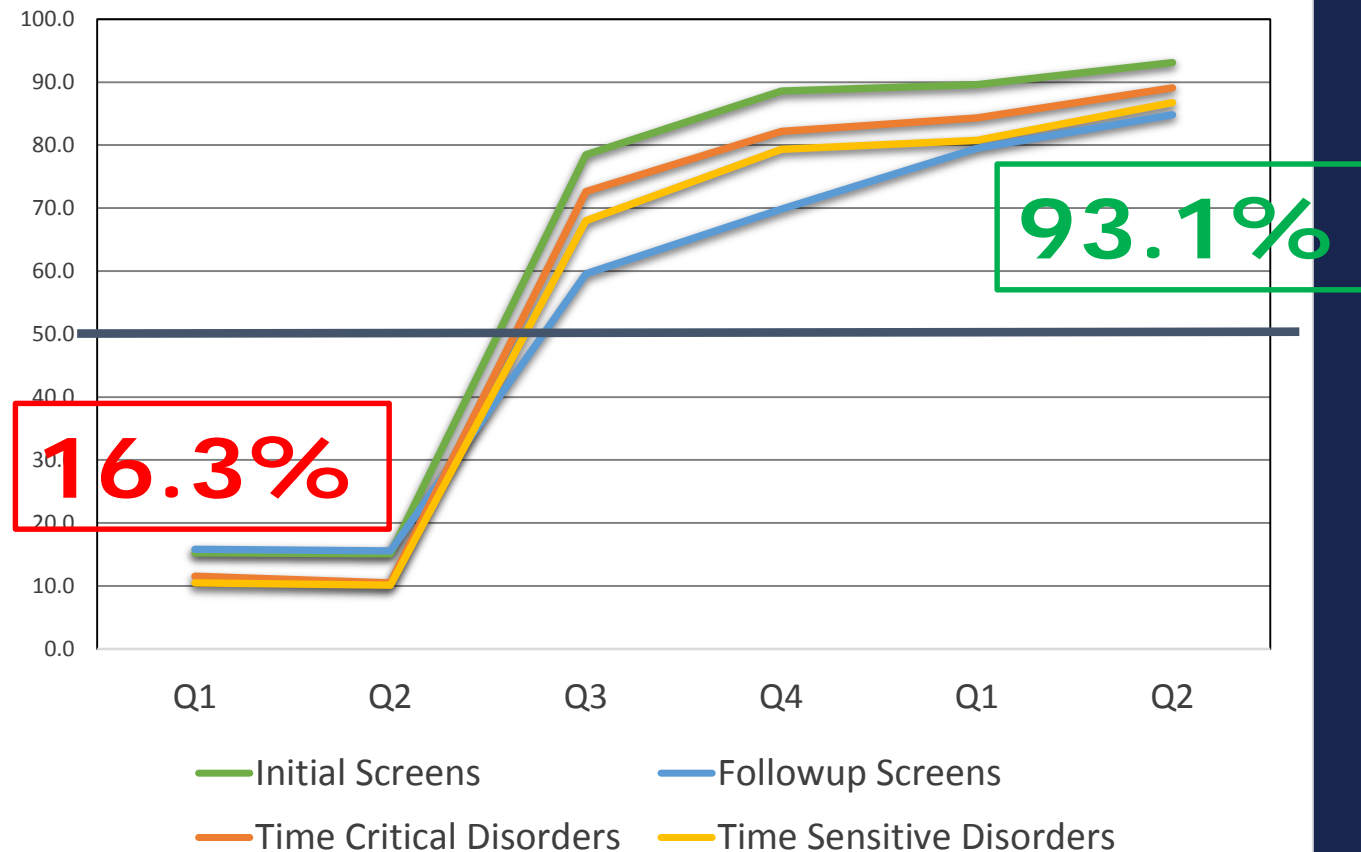
% Punched Same Day



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Percent Specimens Punched Same Day as Received



Control

Time Critical Disorders



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Baseline Process

Time	Bundles	Punching	DE	CAH	GALT	MSMS
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM	Bundles Ready					
11:00 AM						
12:00 PM						
1:00 PM						
2:00 PM						
3:00 PM						
4:00 PM						
5:00 PM						
7:00 AM		Punch				
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
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10:00 AM						
11:00 AM						
12:00 PM						

New Process

Time	Checkin	Punching	DE	CAH	GALT	MSMS
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM		Punch Round 1				
12:00 PM						
1:00 PM						
2:00 PM		Punch Round 2				
3:00 PM						
4:00 PM						
5:00 PM						
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
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9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						

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Time	T4	T5	T6	T7	T8	T9
7:00 AM						
8:00 AM						
9:00 AM						
10:00 AM						
11:00 AM						
12:00 PM						
1:00 PM						
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10:00 AM				</		

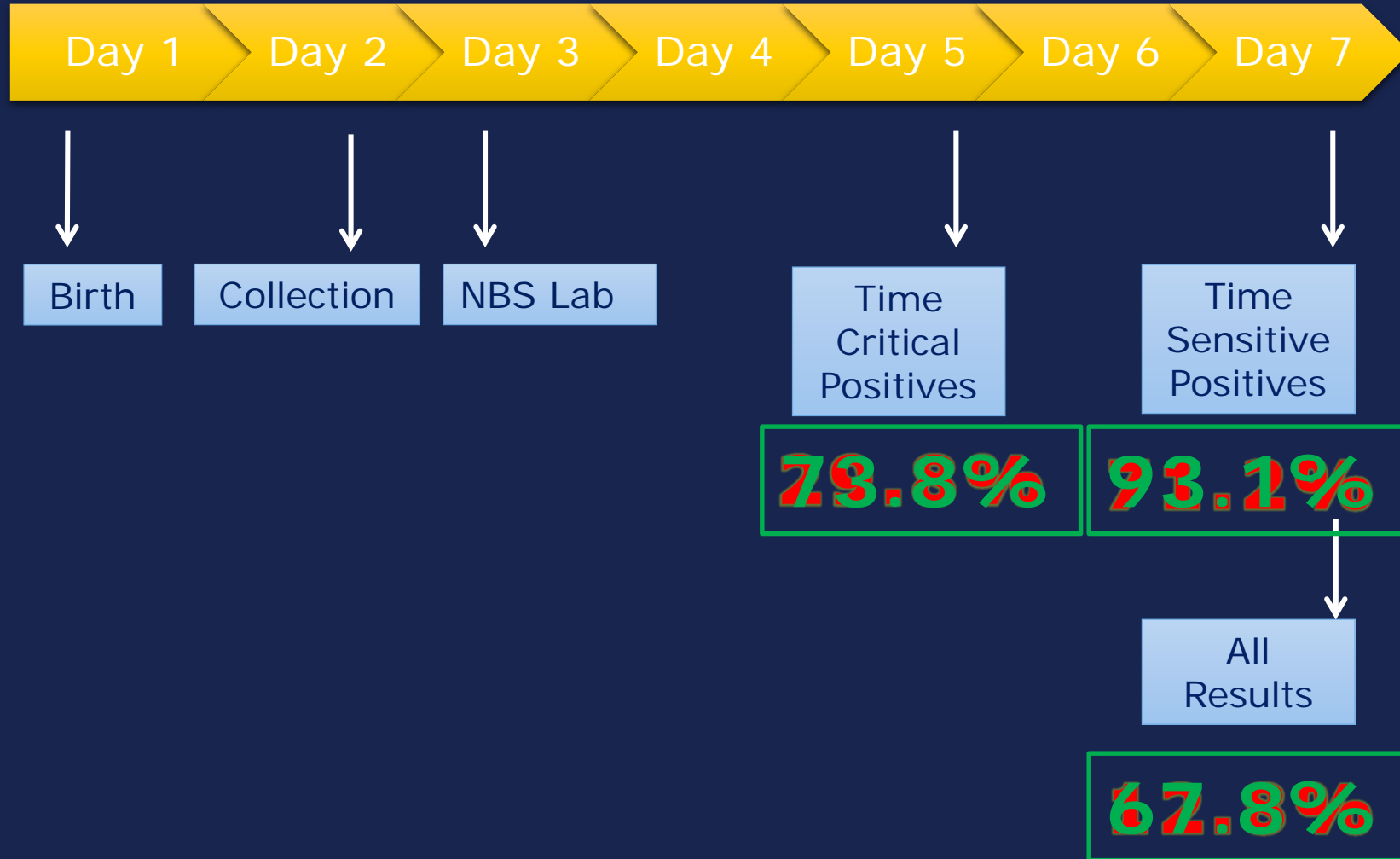
Time	T4	IRT	BOAT	HGB	SCD
7:00 AM					
8:00 AM					
9:00 AM					
10:00 AM					
11:00 AM					
12:00 PM	Screens	Screens			
1:00 PM					
2:00 PM					
3:00 PM					
4:00 PM					
5:00 PM					
7:00 AM	Screens	Screens	Screens	Screens	Screens
8:00 AM	Pull / punch retest	Pull / punch retest			
9:00 AM		Retests			
10:00 AM					
11:00 AM					
12:00 PM					
1:00 PM					
2:00 PM					
3:00 PM		Release			
4:00 PM					
5:00 PM					
7:00 AM	Retest	Retest	Retest	Screens	
8:00 AM	WL				
9:00 AM	Release				
10:00 AM					
11:00 AM					
12:00 PM					
1:00 PM					
2:00 PM					
3:00 PM					
4:00 PM					
5:00 PM					
7:00 AM			WL - Release	Release (except HPLC)	Pull / punch retest
8:00 AM					
9:00 AM					
10:00 AM					
11:00 AM					
12:00 PM					
1:00 PM					
2:00 PM					
3:00 PM					
4:00 PM					
5:00 PM					
7:00 AM					
8:00 AM					Retest
9:00 AM					
10:00 AM					WL - Release

Control: Outcome



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Additional Opportunities

- **HGB**
Process workflow
- **GALT / BIOT**
GSP
- **SCID**
New Extraction Protocol
- **Report Generation**
Automation



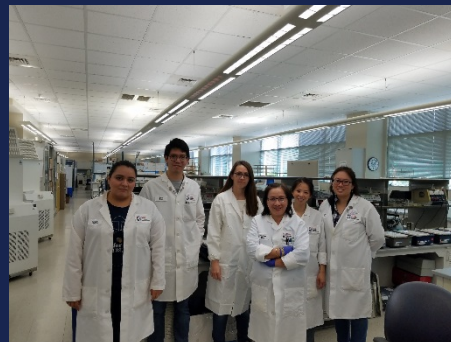
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Thank you!