

# MATER PATHOLOGY LEAN PROJECT SUMMARY – 26/02/2007

## AIM:

In August 2006, the Clinical Chemistry division installed new analytical instruments (Ortho Fusion analysers). The aim was to implement a platform which is compatible with robotic processing leading to a reduction in lead time for chemistry profiles.

As an adjunct to this implementation, the process from receipt and pre-analytical processing of specimens through to reporting was mapped using Lean tools.

These tools were selected to identify waste and opportunities for improvement in processes not directly related to the analytical process.

Urgent chemistry profiles were selected for examination using Lean tools with an overall aim to reduce the lead time from sample reception to reporting by 10% and the variation in lead time by 50%.

## STAFF ENGAGEMENT: Strategies included

- Director's message and commitment
- Divisional managers' education – power point, DVD
- Lean team education & training
- Presentation of metrics (current state) demonstrating improvement areas
- Area managers' regular attendance at team meetings
- Director's regular attendance at team meetings
- Regular progress reports to team
- Regular progress reports from Director to Executive
- Strong Executive commitment

## Observations:

- Young motivated reception & processing team keen for change (work environment overcrowded)
- Clinical chemistry involvement more conservative (more resistant to change)
- Area managers' commitment to the change process variable (can be closed to innovative ideas, unwilling to make unpopular decisions, unwilling to release staff for process improvement)

## **KEY WASTES:** (refer value stream map, Kaizen Blitz Actions)

- Movement in processing area
- Centrifuge waiting
- Data entry waiting
- Analyser loading delays
- Analyser unavailable due to QC / maintenance or off line due to faults
- Result authorization

## **Observations:**

- Both analysers were off line for maintenance / QC set up between 0700 & 0800 hrs (early peak period)
- Analysers underwent unexpected periods of downtime throughout the day due to breakdown
- Reception & processing area congested with personnel working around each other & cluttered with rarely used materials

## **INTERVENTIONS:**

### **IMMEDIATE** (refer charts)

- The maintenance / QC set up on one analyser was shifted to a late shift and the change evaluated in November 2006. The results were suggestive of an improvement in lead time and variation for that time period. A permanent change is now in place.
- Several analyser software modules causing intermittent failure have been replaced and upgraded.

### **SCHEDULED** (the outcome of brainstorming sessions)

#### **Reception & Processing**

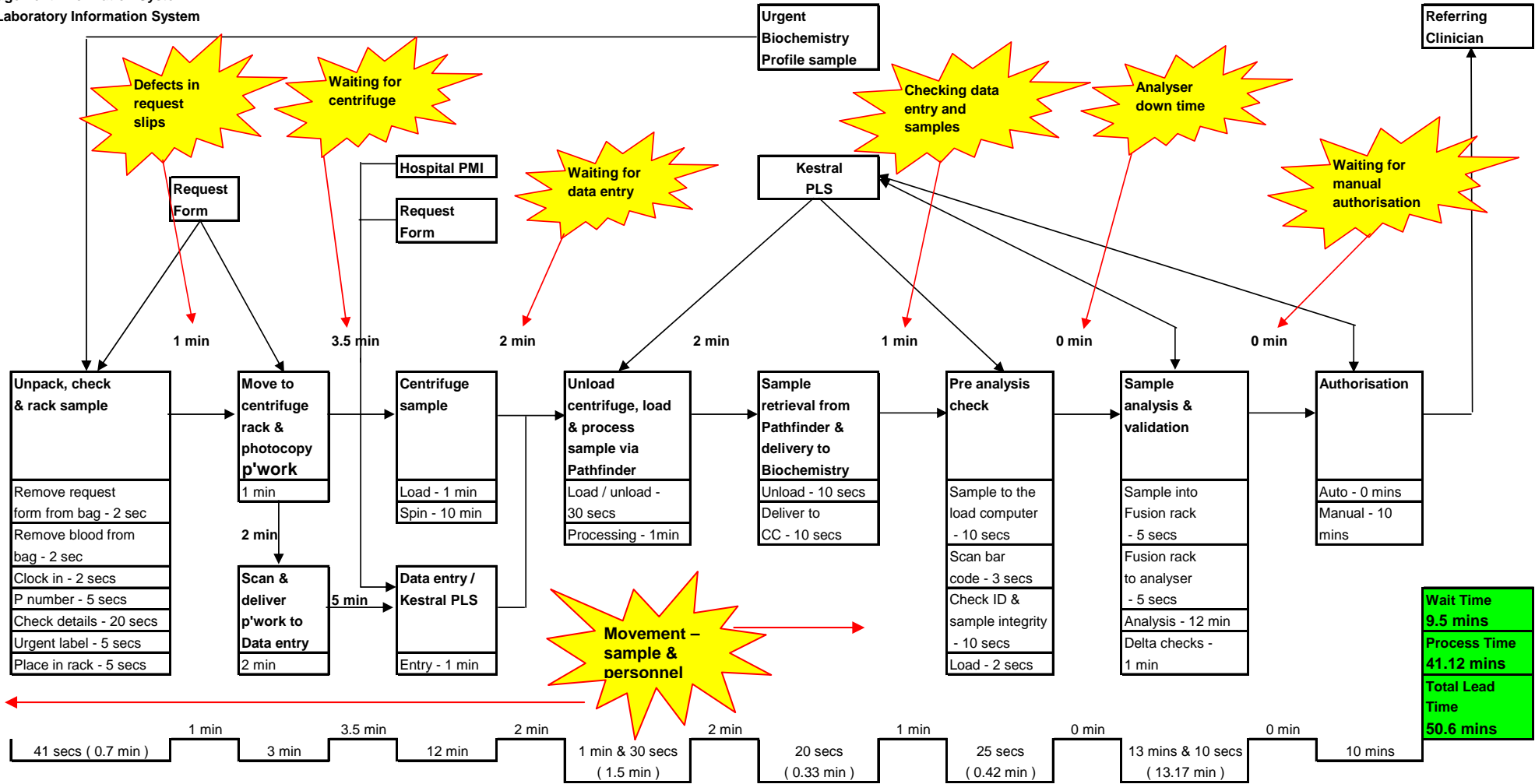
1. Sort & set in place (1S&2S)
2. Cessation of selected request slip photocopy functions
3. Relocation to other laboratory areas of selected work processes not directly associated with sample flow
4. Placement of an additional centrifuge pending step 3 and space availability

#### **Clinical Chemistry**

1. Sort & set in place (1S & 2S)
2. Improve the authorization process (reduce manual authorization, remove unnecessary interpretive comments)
3. Review classification criteria which assign “urgent” status to samples
4. Appoint an assistant to manage critical results (notifying clinicians)

**URGENT BIOCHEMISTRY PROFILE SAMPLE  
VALUE STREAM MAP 26/10/2006  
FUTURE STATE**

PMI = Patient Management Information System  
PLS = Pathology Laboratory Information System



**Real Time Data**

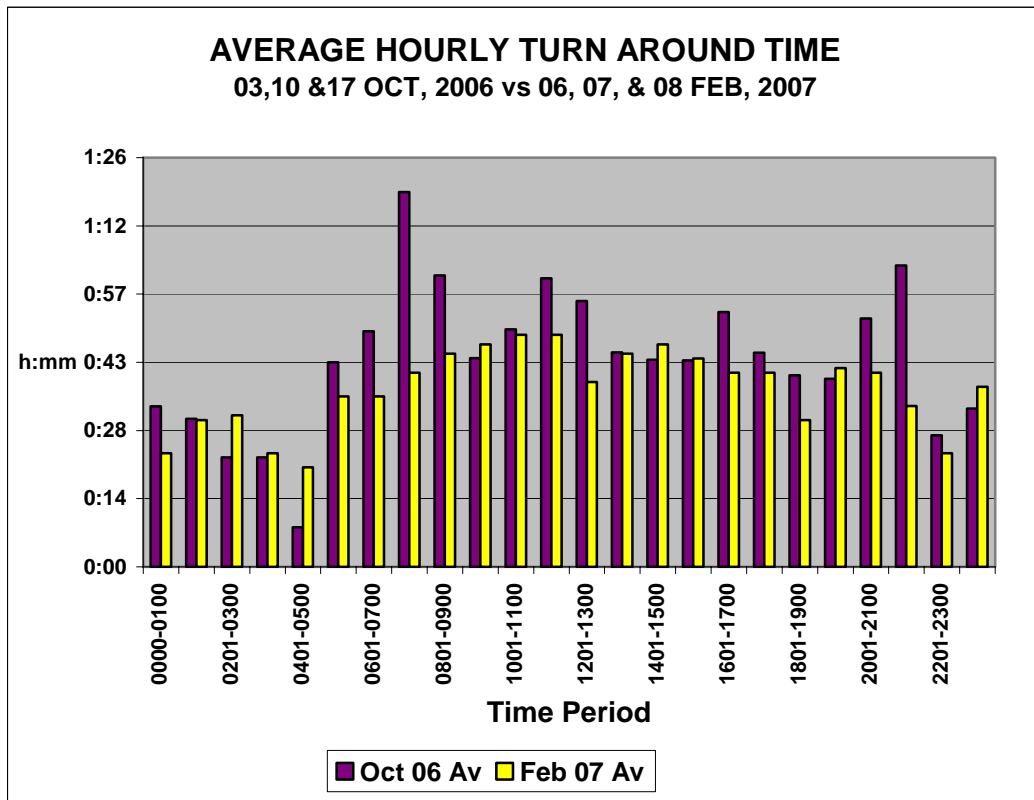
Predicted (mins)	0.7	1	3	3.5	12	2	1.5	2	0.33	1	0.42	0	13.17	0	10		
Actual (av)	0.5	1.4	0.3	3.8	11.2	1.5	4.5	2.2	0.6	1.5	2.5	0	16.6	0	2.8		
Range	0.4 - 0.8	0.1 - 2.5	0.1 - 0.4	0.2 - 9.0	10.3 - 13.0	0.1 - 4.3	0.8 - 12.8	0.6 - 3.1	0.4 - 1.0	0.6 - 2.4	1.1 - 6.4	0	9.0 - 27.0	0	0 - 11.0		
Lead time (av)																49.2	
Range																33.7 - 62.0	
Variability Issues				Centrifuge wait (staff)					Data entry wait				Loading delay	Analysers not available (QC)			Auto vs manual

# URGENT CHEMISTRY PROFILE

## LEAD TIME & STANDARD DEVIATION COMPARISON

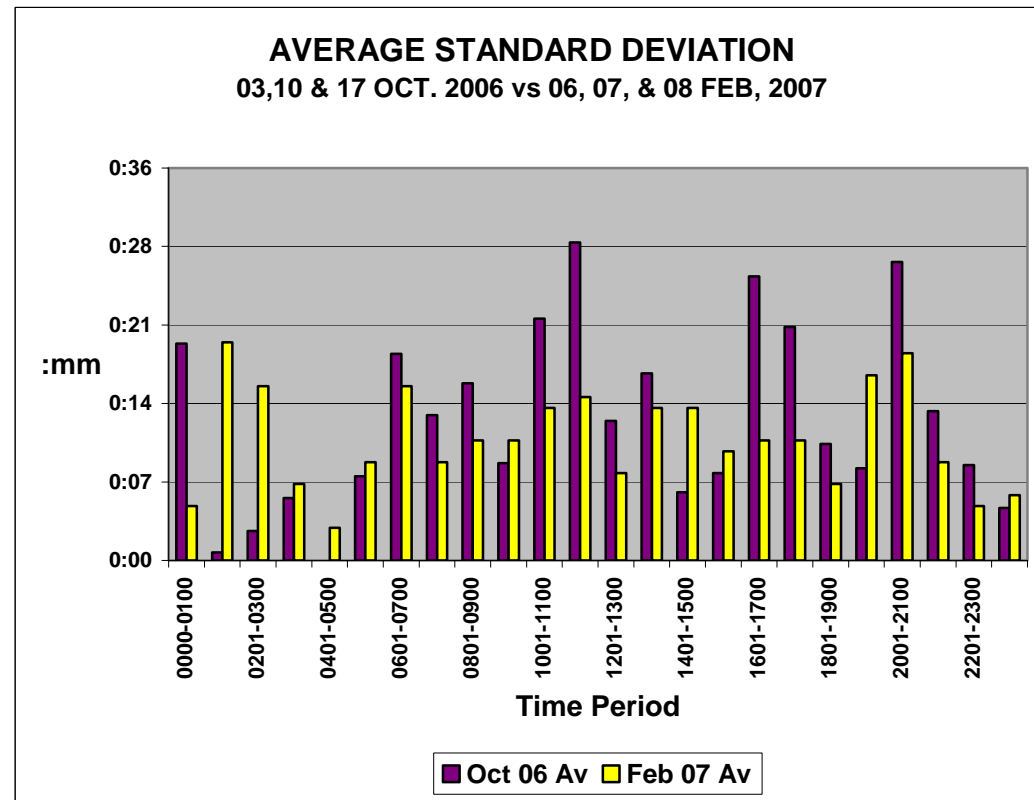
### 3 DAY PERIOD – OCTOBER 2006 vs FEBRUARY 2007

## LEAD TIME



	Previous Average	Current	Reduction
0601-0700 hrs	0:49	0:36	26%
0700-0800 hrs	1:19	0:41	48%
0800-0900 hrs	1:01	0:45	26%
<b>0000-2400 hrs</b>	<b>0:43</b>	<b>0:37</b>	<b>14%</b>

## STANDARD DEVIATION



	Previous Average	Current	Reduction
0601-0700 hrs	0:18	0:16	11%
0700-0800 hrs	0:13	0:09	44%
0800-0900 hrs	0:16	0:11	31%
<b>0000-2400 hrs</b>	<b>0:12</b>	<b>0:11</b>	<b>08%</b>