Efficiency & Streamlining Following Implementation of the Core Laboratory

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Objectives

- Provide a brief overview on the implementation of the Core Laboratory
- Demonstrate how laboratory TAT and FTEs were affected following the implementation of the Total Automation System
- Discuss how the analysis of the TAT data helps identify potential areas for quality improvement.

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What is a CORE laboratory?

Consolidation of analytical instruments into a common area
of analytical instruments for various disciplines:

- Chemistry
- Hematology
- Coagulation
- Immunology

Automation of specimen processing (pre-post analytics)

- Transport
- Processing
- Reporting
- Archival

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How does the CORE laboratory work?

CURRENT MANUAL PROCESSES

Sample tubes received in lab
Tubes unpackaged, sorted
Bar codes read
Tubes examined
Tubes put in centrifuge
Centrifuge balanced
Tubes spun in centrifuge
Centrifuge unloaded
Aliquots made & labeled
Aliquots sorted, bar codes read

Tubes sorted & stored
Tubes unloaded
± Samples diluted & re-run
Tests run
Instrument programmed
Loaded into instrument
Sorted into test groups
Tubes examined
Received by technologist
Tubes sent to workstations

All of these steps will be automated

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Business Case

1. Improved Patient Care

- Laboratory able to deliver consistent, accurate results in a predictable timeframe to health care providers

- Faster turnaround of test results by standardizing workflow and eliminating many manual steps

- Improved patient safety
  - Reduced errors caused by fatigue
  - Reduced labelling errors
  - Fewer breakages

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Business Case

2. Sustainability of Laboratory Services

- Impending shortage of MLTs in Nova Scotia
- 146 technical staff at QEII (27%) were eligible for retirement with unreduced pension from 2012-2017.
- Automation allows MLTs to focus on areas requiring skill and experience
  - ➢Investigating abnormal results
  - ➢Quality Assurance activities

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Business Case

3. Improved Employee Safety

Minimize exposure of technical staff to blood-borne pathogens using enclosed automated system for:

- Decapping
- Aliquotting
- Centrifugation
- Transportation between instruments
- Recapping (sealing) for storage

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Business Case

- All routine Chem/Heme/Coag/Immuno testing in Central Core Lab
- Reduction of 29 FTEs system wide (achieved through attrition)
- Operational savings = $2.2M

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Pre Analytical Before

Pre Analytical After - Aliquotter

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Specimen Transport (VTS)

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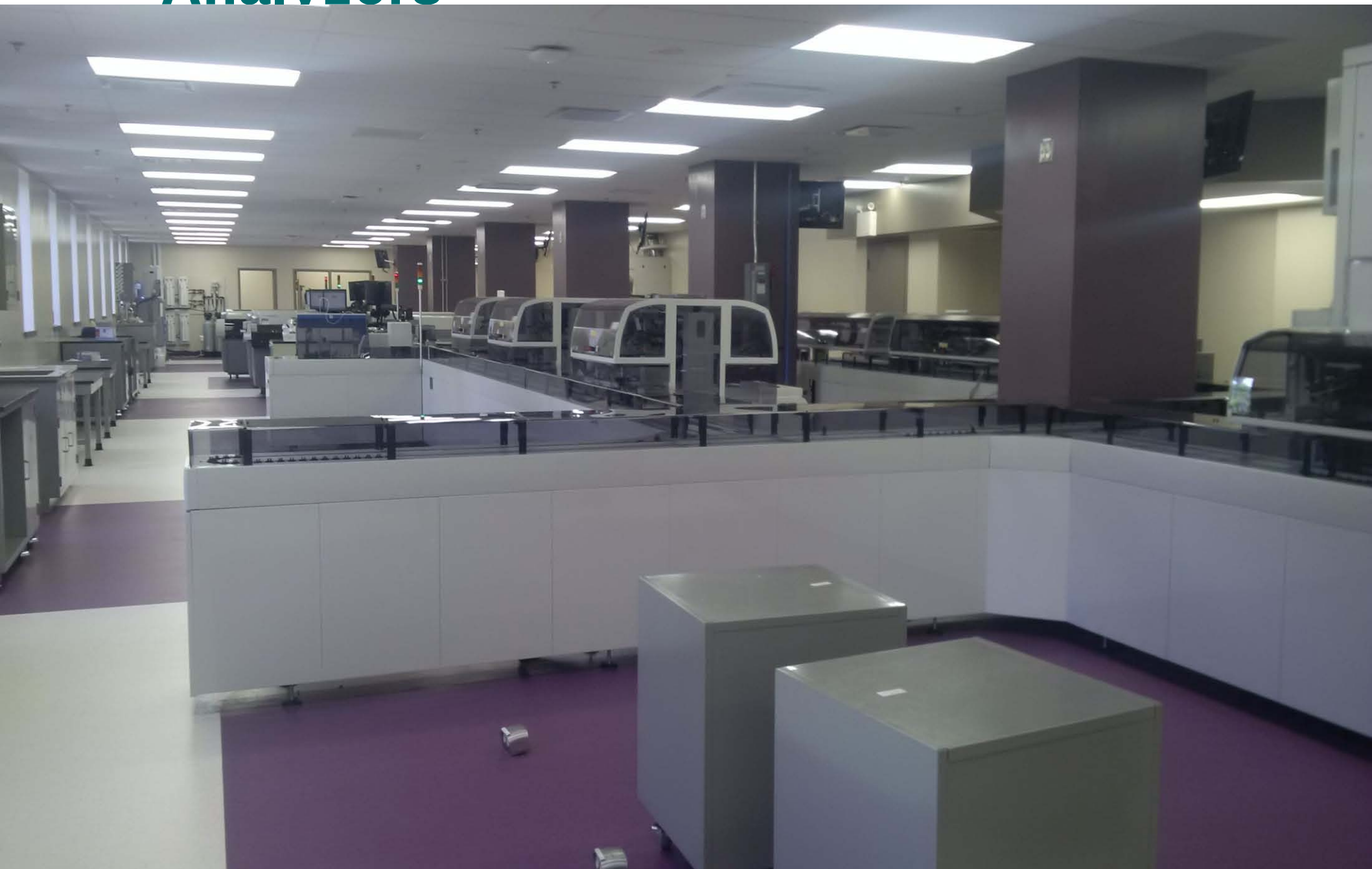
Analytical Before

Automated Track Connects to Analyzers



Sample Storage Before

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Automated Track Connects to Tube Storage Units

Change Management

- Multi-stakeholder engagement
- Involving end users in planning and design
- Communication
  - Frequent communications/updates
  - FAQs
  - Transparency
- Involve end users to implement the changes
- Provide support
- Celebrate milestones!

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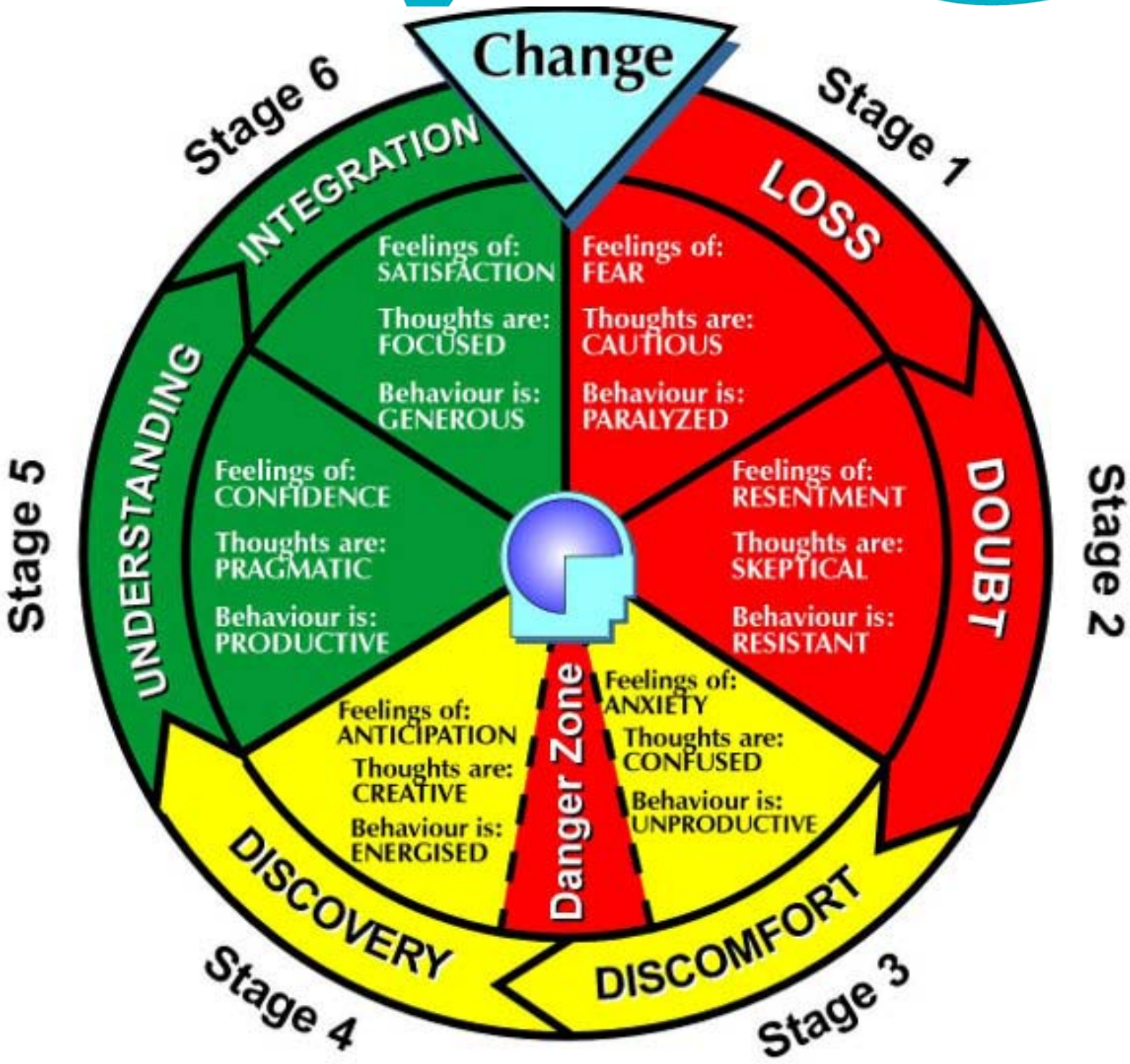
Change Cycle



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Turnaround Time (TAT)-

a Key Quality Indicator of Laboratory Performance

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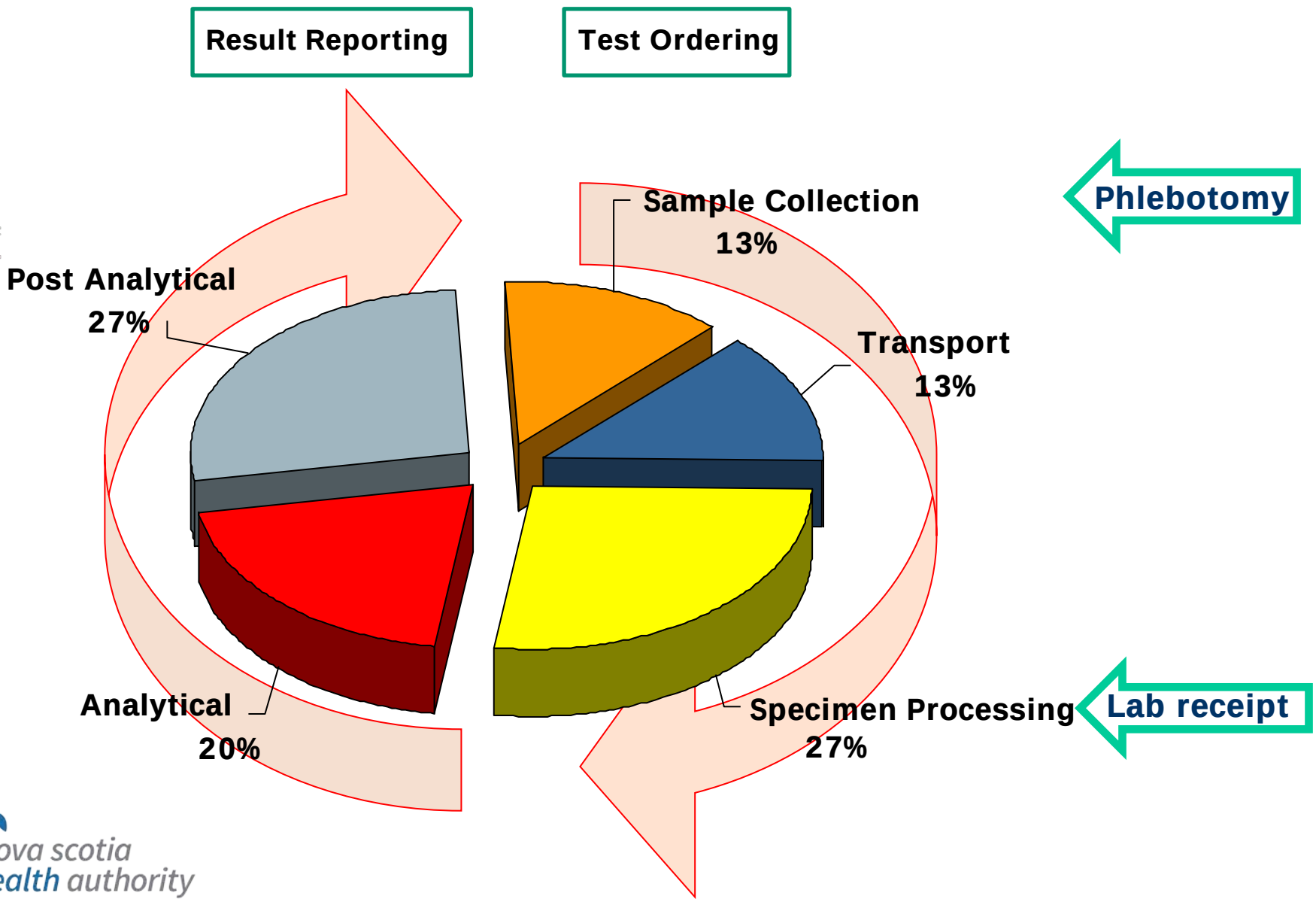
Turnaround Time- Total Laboratory Testing Cycle



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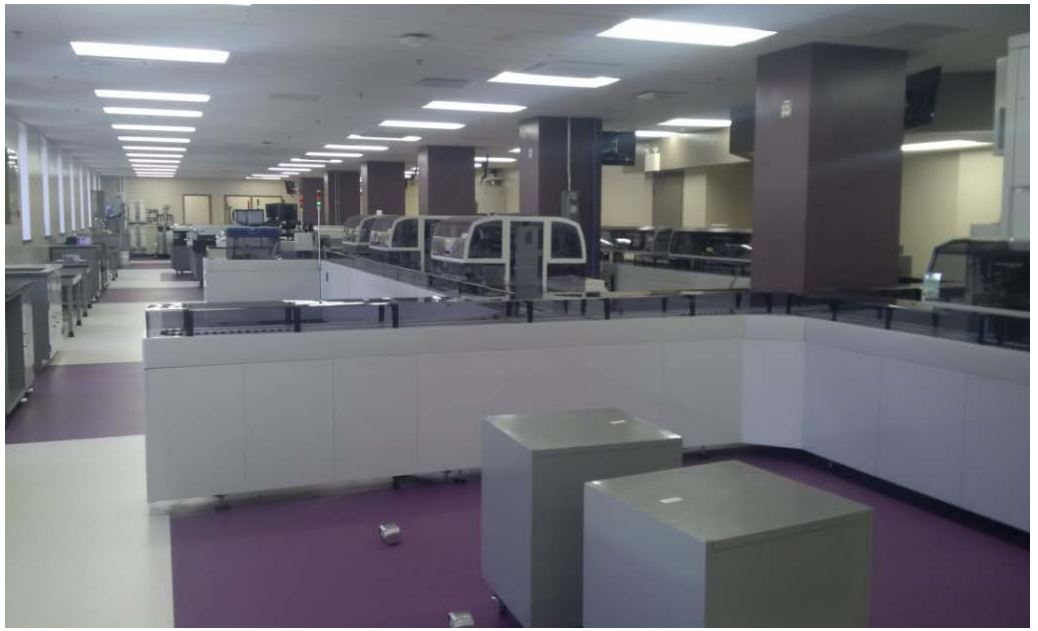
Improving Turnaround Time

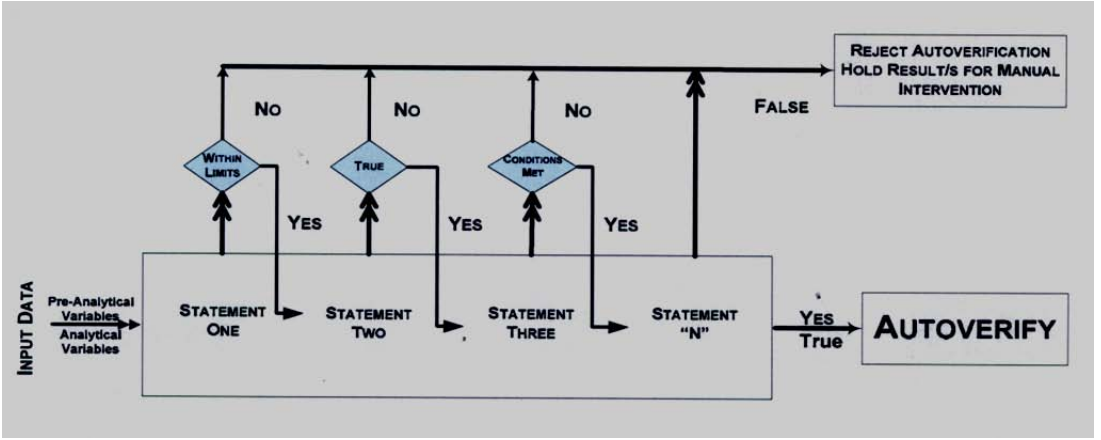
- Solutions to improve TAT
  - Pre-analytical
    - Electronic test order entry
    - Specimens transportation by pneumatic tube systems
    - Use of a high speed centrifuge
    - Use of plasma rather than serum specimens
    - Training of laboratory staff to expedite handling of urgent samples
  - Analytical
    - Consolidation of analytical platforms
    - Interfacing instruments
  - Post-analytical
    - Auto-verification of results

Core Laboratory Establishment Early 2013 - May 2015

Pre-analytical:
Electric Track Vehicle (ETV) System



Pre- & analytical:
Total Laboratory Automation (TLA)



Post-analytical :
Auto-Verification

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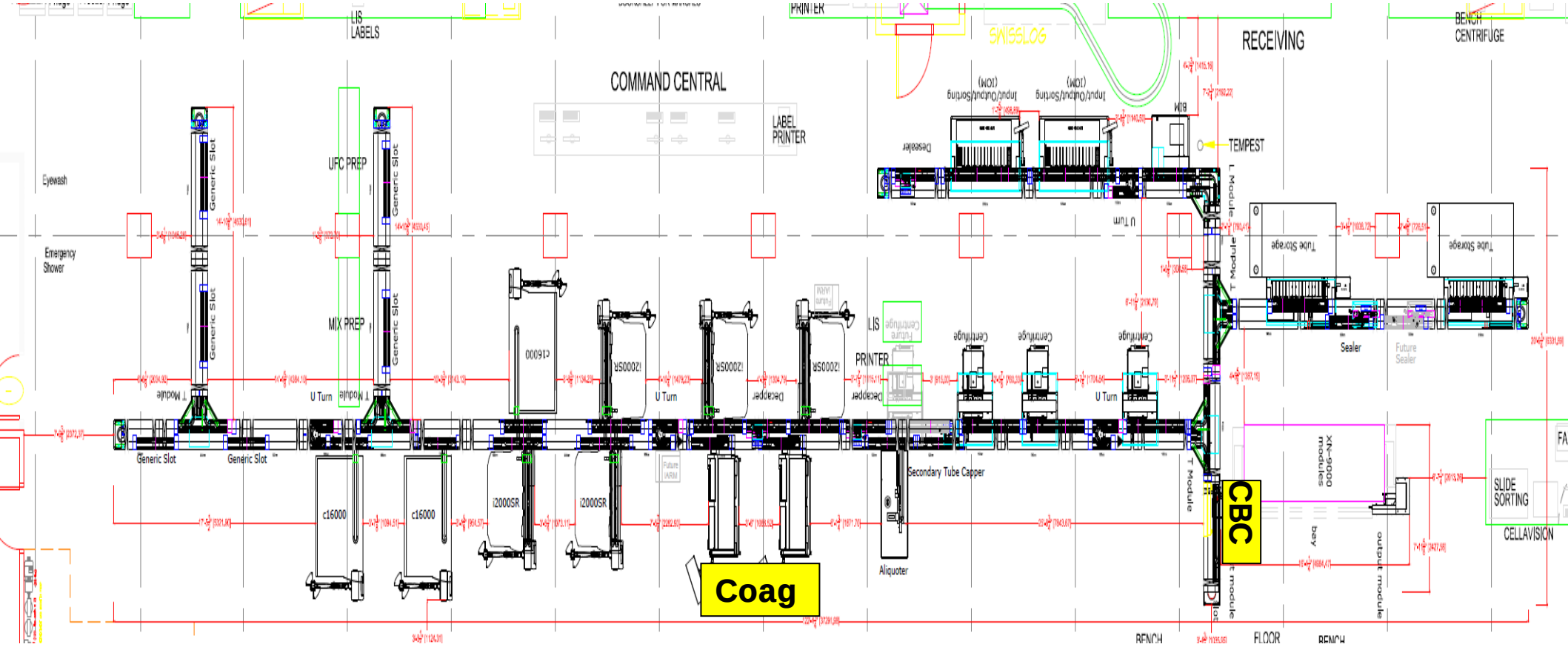
Total Laboratory Automation System Layout



Module	Number		Module	Number
Input/output module	2		Aliquoter	1
BIM (bulk Input module	1		Architect c16000	3
Centrifuge module	3		Architect i2000	5
De-capper module	2		Sysmex XN1000	3
Re-sealer	1		ACL TOP 700 (IL)	2
De-sealer	1		Tube storage module	2

- Processing 3600 tubes per hour
- Total distance traveled from IOM to Storage is 96.6 meters
- Total time traveled: 9.5 minutes.
- Total Track Footprint is about 3000 feet^2
- **The largest and most complex system in North America !!**

Outlines of the Studies

- **Evaluation of the TAT in VG Core Lab**
  - **Study I: Comparison of Total TAT (PR-TAT) between the pre- and post- core lab eras**
  - **Study II: Impact of ETV & TLA Systems on Total TAT**
    - **Delivery TAT (PI-TAT)**
    - **In-lab TAT (IR-TAT)**
  - **Study III: Impact of the Auto-Verification (AV) on In-lab TAT**
- **Impact of the Core Lab on other labs across the Central Zone**

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Study I: Evaluation of Total TAT (PR-TAT)

- Five representative analytes were selected:
  - General Chem: Potassium, Urea
  - Immunoassay: TSH
  - Hematology: CBC
  - Coagulation: Prothrombin Time (PT)
- Pre-core period:
  - October 2013 for Hematology
  - March 2014 for Chemistry
- Post-core period: March 2016
- Retrospective data (1 month) was extracted from LIS
  - The time of blood collection
  - The time that results were released by the LIS.

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Goals of Total TAT (PR-TAT) in Our Department

- Priorities of Test Requests
  - STAT 1 hr
  - Urgent 3 hrs
  - Routine 8 hrs
  - Outlier percentage rate <10% for each type of priorities

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Sample Processing Protocols Post-Core Laboratory

Protocols	STAT	Urgent	Routine
Applied Analytes	•STAT Chem: K and urea •STAT CBC	•STAT Coag: PT •All urgent requests	•All routine requests •TSH
Registration at the main floor	yes	yes	yes
Delivery through ETV	Immediately	Quick	when available
Sample check-in at core lab (2nd floor)	Manually Scan	automated online	automated online
Offline Centrifugation	yes	No, online centrifugation	No, online centrifugation
Sample introduction to the IOM on track	priority lanes CBC loaded on ins.	priority lanes	routine lanes

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Increase in Test Volumes from 2014 to 2016

Analyte	January - March 2014	January - March 2016	% increase in 2016 (naturally)	Routine samples referred-in to VG in Apr. 2015	% referred-in samples to total numbers
Potassium	44139	47983	8.7%	18962	28.3%
Urea	33973	36194	6.5%	12844	26.2%
TSH*	45886	47897	4.4%	NA	NA
CBC	52791	58971	11.7%	23733	28.7%
PT	14383	15938	10.8%	4819	23.2%

STAT:	1%
Urgent:	30%
Routine:	70%

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Results for Study I- STAT

		Pre-core laboratory					Post-core laboratory			
Priority type	Analyte	potassium	urea	CBC	PT		potassium	urea	CBC	PT
Stat	Sample number (n)	146	108	221	103		188	124	243	115
	Mean (min)	73.5	74.7	43.1	57.9		72.8	74.9	51	74.6
	SD	48.9	53	34.9	25.5		34.7	37.7	28.9	31.4
	Median (min)	63.1	63	33.5	50.4		63.2	67.8	45.6 *	68.9 *
	90% percentile TAT (min)	105.1	100.2	72.5	80		106.4	102.3	82.6	112.7
	OP-TAT 60min %	55.5%	55.6%	17.6%	28.2%		57.4%	63.7%	25.9%	66.1%
	OP-TAT 90min%	15.8%	13.9%	6.3%	5.8%		18.1%	16.1%	8.6%	23.5%

- PR-TAT was comparable for chemistry analytes, but delayed by 15 min for hematology tests
- 90% completion time for STAT requests was 1.5-2 hours!
- Outlier rates were worse and did not meet our goals

Results for Study I - Urgent

		Pre-core laboratory				Post-core laboratory			
Priority type	Analyte	potassium	urea	CBC	PT	potassium	urea	CBC	PT
Urgent	Sample number (n)	4165	3585	4464	2097	4569	4152	4674	1785
	Mean TAT (min)	141.1	141.2	117.5	139.8	121.1	119.6	103.6	116.6
	SD	61.8	56.5	61.2	63.2	49.9	47.5	59.1	50.5
	Median TAT (min)	133.1	133.8	108.3	127	111.2*	110.8 *	91.2 *	106 *
	90% tile TAT (min)	201.2	202.3	182.3	211.6	174.7	107.4	166	175.7
	OP-TAT 2 hrs (%)	62.8%	63.3%	41.4%	55.9%	40.0%	38.8%	25.7%	36.1%
	OP-TAT 3 hrs (%)	16.3%	16.4%	10.6%	19.1%	8.8%	8.0%	7.6%	9.4%

- PR-TAT was improved by 25 min for all urgent tests
- 90% completion times were < 3 hours
- Outlier rates at 3hrs <10% and reduced by 50%

Results for Study I- Routine

		Pre-core laboratory				Post-core laboratory			
Priority type	Analyte	potassium	urea	CBC	PT	potassium	urea	CBC	PT
Routine	Sample number (n)	10477	7669	15274	3625	11304	7801	14629	3395
	Mean TAT (min)	337	336	241	223	185	181	160	169
	SD	139	139	132	176	101	100	98	162
	Median TAT (min)	314	313	201	177	157 *	154 *	133 *	138 *
	90% tile TAT (min)	523	523	413	387	316	311	286	289
	OP-TAT 6 hrs (%)	39.5%	39.6%	19.4%	14.6%	5.6%	5.0%	3.8%	4.7%
	OP-TAT 8 hrs (%)	22.0%	16.5%	4.1%	3.3%	1.2%	0.9%	0.4%	0.7%

- The PR-TAT were improved by 50-150 min (30-50%) for all routine tests
- 90% completion time was < 6 hours and outlier rates <10%!

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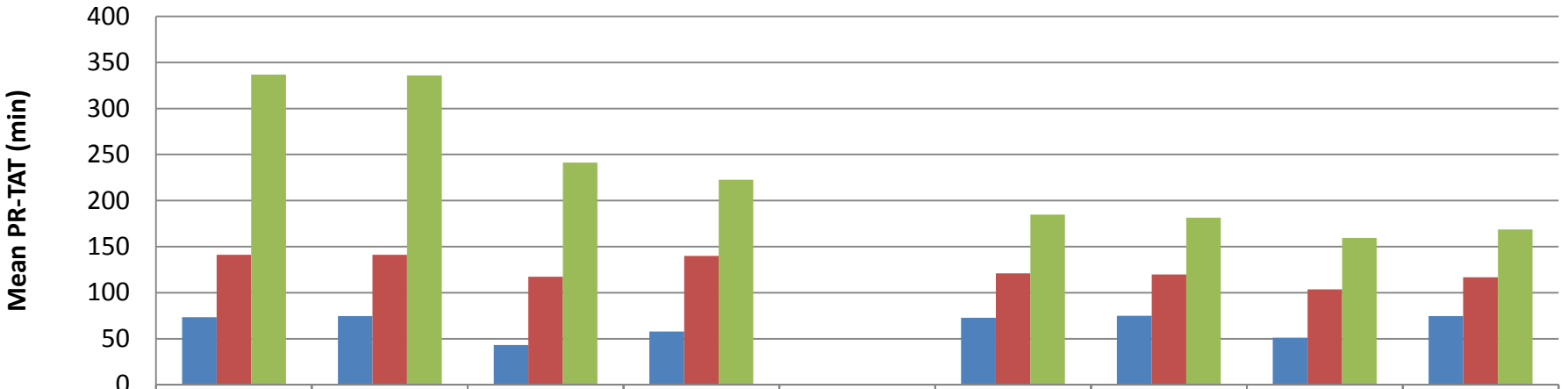
Summary for Study I



	Pre-core laboratory					Post-core laboratory			
	K+	urea	CBC	PT		K+	urea	CBC	PT
Stat	73	75	43	58		73	75	51	75
Urgent	141	141	117	140		121	120	104	117
Routine	337	336	241	223		185	181	160	169

- The PR-TAT were significantly improved for urgent and routine requests, given the volume were about 35% higher post-core laboratory.
- For STAT requests, mean PR-TAT has no change for chemistry analytes while it is delayed significantly for hematology testing. ***WHY ?***

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Study II: Impact of ETV & TLA Systems on Total TAT

- PR- TAT was divided into
  - PI - TAT (phlebotomy to in- lab, delivery) : Efficiency of the ETV system
  - IR- TAT (in- lab to reporting, in-lab): Efficiency of the TLA system
- Representative analytes were grouped:
  - Hem: CBC and PT
  - Chem: Potassium, Urea, TSH
- Pre-core period:
  - Hem tests: received, then processed in Hem lab
  - Chem tests: were centrifuged in ACS and then received in Chem lab
- Post-core period
  - Hem+ Chem samples were delivered through ETV
  - All samples are received, then processed in the core lab
- Retrospective data was extracted from LIS

Study II: Impact of ETV on PI- TAT (delivery)

CBC	pre-core (Oct-Dec 2013)			post-core (Jan-Mar 2016)		
	stat	urgent	routine	stat	urgent	routine
n	526	12460	40177	682	13997	44292
Mean (min)	29	73	136	38	84	152
SD	42	50	270	39	56	97
Median (min)	20	61	120	**32***	**74***	123
90% tile (min)	48	140	227	58	132	293
OP 60min	7.6%	50.9%	88.9%	8.5%	67.3%	92.5%
OP 120min	2.3%	17.1%	50.4%	1.9%	13.8%	51.9%
PT	pre-core (Oct-Dec 2013)			post-core (Jan-Mar 2016)		
	stat	urgent	routine	stat	urgent	routine
n	259	5730	9670	322	5322	10294
Mean	25	74	137	38	84	140
SD	20	73	166	23	59	120
Median	21	58	114	**34***	**73***	112
90% tile	43	139	245	59	131	274
OP 60min	6.2%	48.3%	84.8%	9.6%	66.3%	87.2%
OP 120min	0.4%	16.0%	45.4%	1.2%	13.6%	44.6%

- Median PI-TATs were delayed by 12 min for STAT and urgent, but comparable for routine
- 90% tile post-core delivery time was 59min (1hr), 131 min (2hrs) and 280 min (4hrs) for stat, urgent and routine respectively and no improvement for the outlier rates

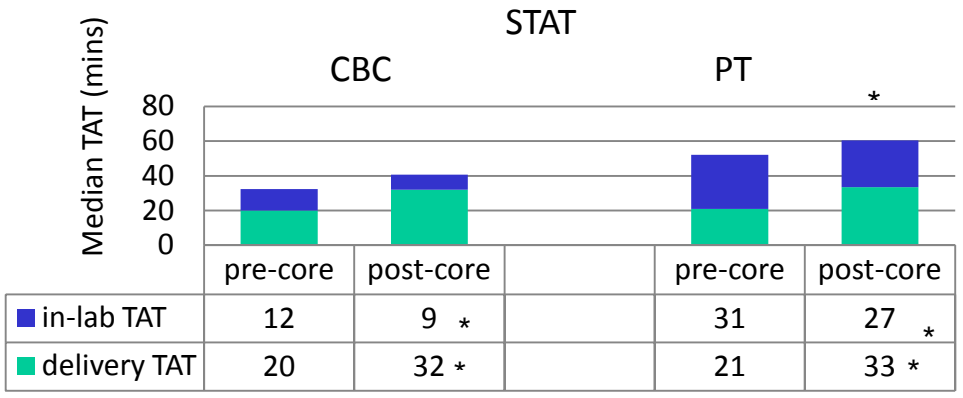
Study II: Impact of TLA on In-Lab TAT of Hema Analytes

Analyte	Parameters	Pre-TLA			Post-TLA		
		STAT	Urgent	Routine	STAT	Urgent	Routine
CBC	Sample number (n)	526	12464	40177	682	13997	44292
	Mean TAT (min)	20	43.2	95	16.4	21.5	16.8
	SD	23.6	40.3	111	33	27.7	26.4
	Median TAT (min)	12.4	34.1	43.5	8.7*	11.6*	11.3*
	90th percentile (min)	43.2	90.4	257.4	36.7	50	26.5
	OP-TAT 30 min (%)	15.6%	54.5%	59.1%	15.0%	18.3%	8.0%
	OP-TAT 60 min (%)	4.6%	25.8%	42.4%	3.1%	7.5%	2.6%

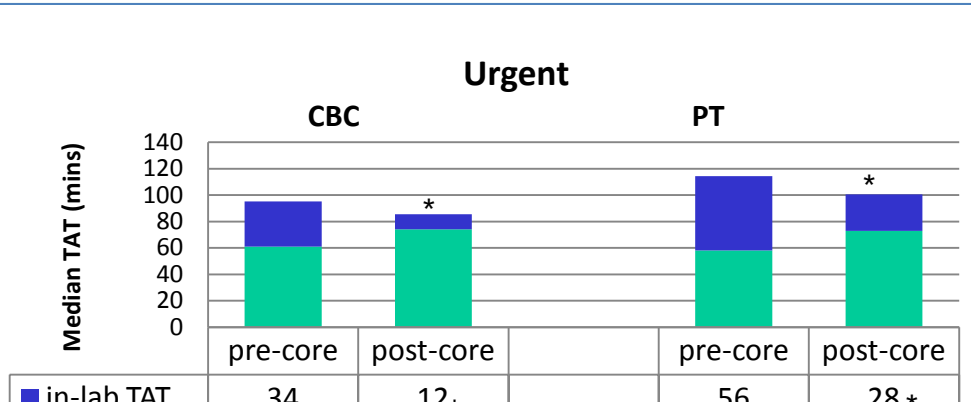
Analyte	Parameters	Pre-TLA			Post-TLA		
		STAT	Urgent	Routine	STAT	Urgent	Routine
PT	Sample number (n)	259	5730	9670	322	5322	10294
	Mean TAT (min)	35.4	64.3	80.9	34.3	34.4	31.9
	SD	14.6	40.3	98.2	24.2	22.1	19.4
	Median TAT (min)	31.1	56.4	42.8	26.9*	27.6*	27.1*
	90th percentile (min)	49	106	217.6	50.8	53.8	43.4
	OP-TAT 30 min (%)	54.8%	87.3%	80.8%	38.2%	35.3%	29.5%
	OP-TAT 60 min (%)	5.4%	45.6%	33.2%	6.5%	7.6%	4.8%

- All parameters for TAT were improved dramatically
- Median TAT reduced by 5min, 25min and 20 min for STAT, urgent and routine
- 90% completion time was <60min for both tests on all priorities
- OP –TAT exceeding 60 min <10%

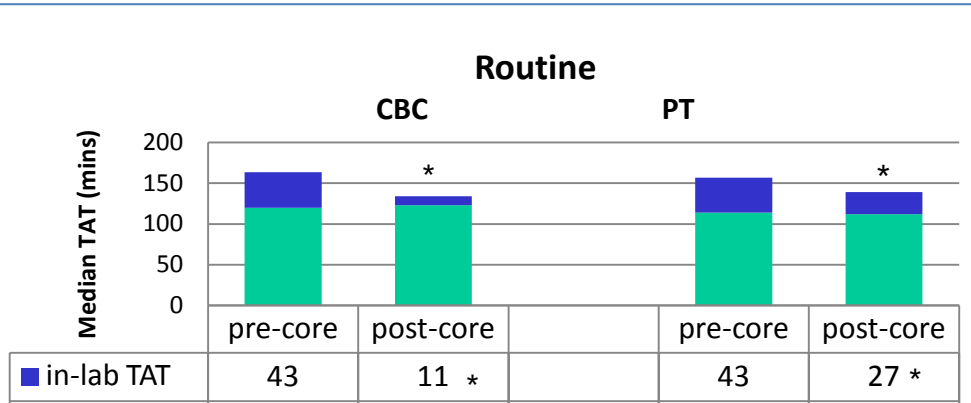
Summary for Study II on Hematology Testing



	pre-core	post-core		pre-core	post-core
in-lab TAT	12	9 *		31	27 *
delivery TAT	20	32 *		21	33 *



	pre-core	post-core		pre-core	post-core
in-lab TAT	34	12*		56	28 *
delivery TAT	61	74 *		58	73 *

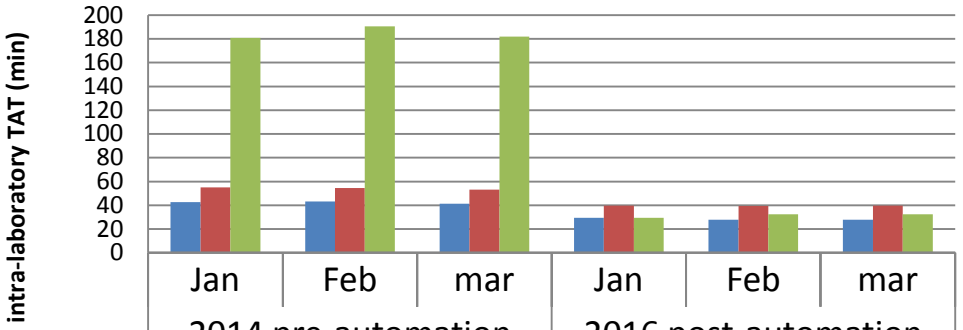


	pre-core	post-core		pre-core	post-core
in-lab TAT	43	11 *		43	27 *
delivery TAT	120	123		114	112

- Generally, delivery TAT > in-lab TAT
  - More remarkable in post-core lab
- ETV negatively impacted on delivery TAT
  - STAT: 12 min (60%)
  - Urgent: 14 min (23%)
  - Routine: no change
- TLA system significantly improved In-lab TAT
  - STAT :
    - CBC- 3 min (25%)
    - PT- 4 min (13%)
  - Urgent
    - CBC- 22 min (65%)
    - PT- 28 min (50%)
  - Routine
    - CBC- 32 min (74%)
    - PT- 17 min (40%)
- Total TATs were improved for both urgent and routine, but not for STAT requests due to the longer delivery TAT after the core

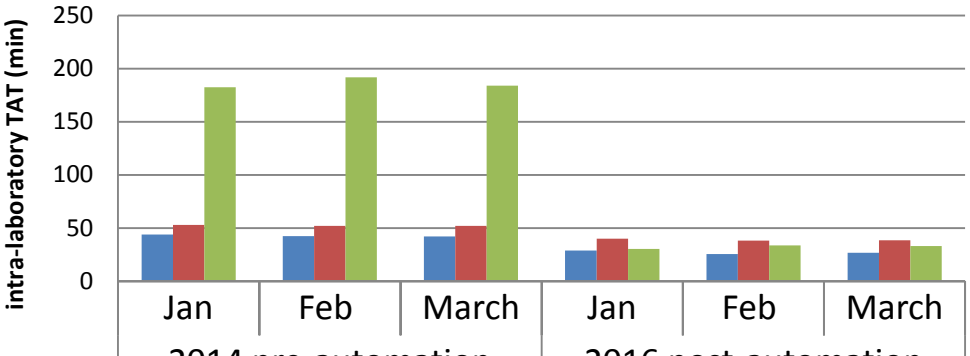
Impact of TLA on In-lab TAT of Chem Analytes

Potassium



	Jan	Feb	mar	Jan	Feb	mar
	2014 pre-automation			2016 post-automation		
stat	43	43	41	29	28	28
urgent	55	54	53	40	39	40
routine	181	190	182	30	32	32

Urea



	Jan	Feb	March	Jan	Feb	March
	2014 pre-automation			2016 post-automation		
stat	44	42	42	29	26	27
urgent	53	52	52	40	38	39
routine	183	192	184	30	34	33

- Compared to pre-automation TAT excluded the centrifugation time, post-automation TATs were still reduced by
  - STAT: 10min (24%)
  - Urgent: 14 min (26%)
  - Routine: 150 min (81%)

Impact of TLA on In-lab TAT of TSH Testing

TSH	2014 pre-TLA	2016 post-TLA
Sample number (n)	45886	47897
Mean TAT (min)	855	62
SD	976	55
Median TAT (min)	**453**	**52 ***
90% til (min)	**1715**	**82**
OP TAT 90 min (%)	98.0%	7.9%

- Represent a group of tests
  - Run during the day shifts, weekdays
  - Treated as routine tests by lab
- TLA changes the running pattern
  - Randomly and 24/7
- Median TAT reduction: 400 min (6.5 hrs)
- 90% completion: <90 min

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Lessons Learned and Followup Actions Made

- ETV system
  - When under the limit of the capacity of the ETV system, dedicated staff should be arranged for timely loading and unloading of the cars to achieve fast TAT.
    - Applied in June 2016
  - When over the capacity, ie peak time, manually delivery of super STAT samples should be considered to meet the required shorter TAT

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Lessons Learned and Followup Actions Made

- TLA system
  - Efficiently manage substantial amount of samples at a reasonable TAT no matter what types of priorities
  - To reach the shortest TAT, samples should be offline centrifuged and directly front loaded on to the analyzers
  - There are no benefit with the current practice for STAT Chem tests (off-line centrifugation then loading onto the IOM)
    - Practice has been changed for STAT Chem since Oct. 2016

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Study III: Impact of the Auto-Verification (AV) on In-lab TAT for Chemistry Analytes

- **Efficiency of the entire TLA track system**
  - **Pre-analytical**
    - Streamlining sample processing
    -
  - **Analytical**
    - Consolidating multiple instruments onto the track system
  - **Post-analytical**
    - Auto-verification- efficiency of result reporting

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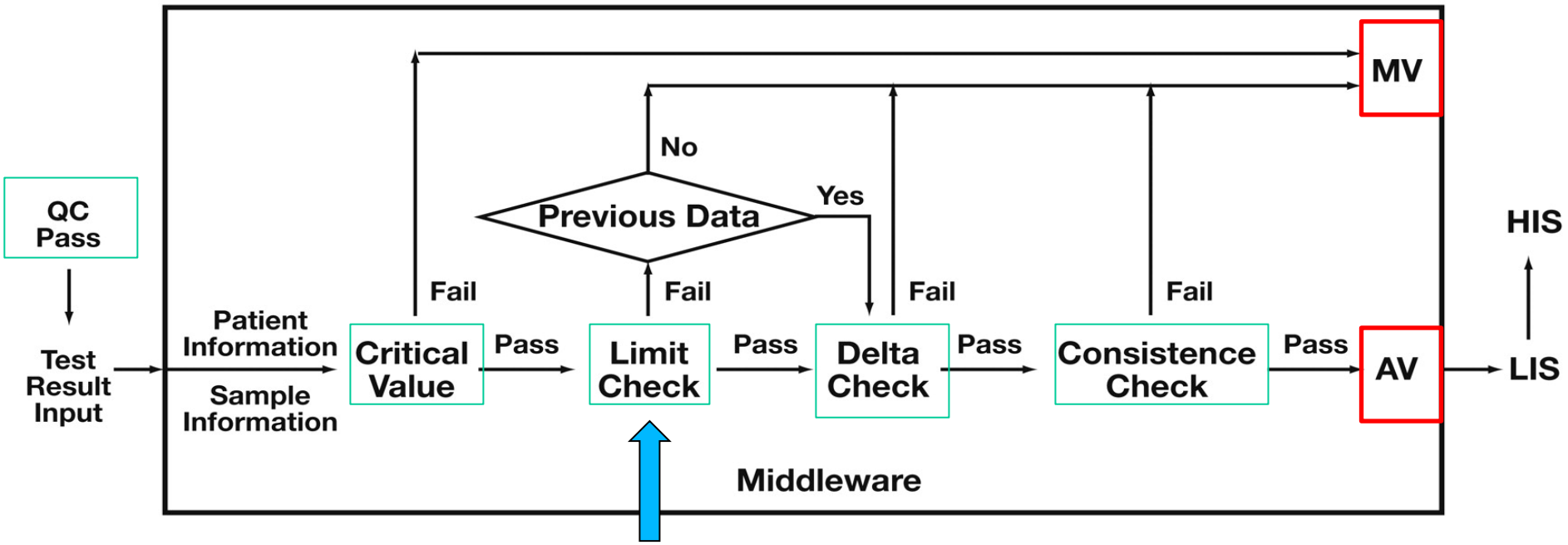
Introduction of Auto-Verification (AV)



- AV is a process of using computer-based rules to verify lab results without manual intervention
- Free up staff
- Improve the quality by standardizing the process of resulting
- Detect lab errors

Study III Approach

- Representative Analytes
  - Potassium and Urea
- Study periods
  1. Pre-AV period: before TLA
  2. AV-RR (Initial AV rules based on reference ranges):
     - Potassium RR: **3.4-5.0 mmol/L**
     - Urea RR: 2.5-9.2mmol/L
  3. AV-advanced
     - AV cutoffs- Potassium: **3.2-5.3 mmol/L**
     - AV cutoffs- Urea: **2.5-36 mmol/L**
- Retrospective data was extracted from the LIS
  - the time that samples were loaded onto the IOM,
  - the time that results were released by LIS

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Results: Impact of Auto-Verifications on In-lab TAT

Analytes	Parameters	AV - RR (Nov. 2015)			AV –advanced (Mar. 2016)		
		STAT	Urgent	Routine	STAT	Urgent	Routine
Potassium	Sample number (n)	159	4365	11434	165	4396	11229
	Mean TAT (min)	44.4	46.5	40.1	27.7	39.4	32.4
	SD	98.1	33.5	82.0	17.1	27.4	44.6
	Median TAT (min)	30.7	37.6	29.3	**23.6 ***	**34.7 ***	27.3
	90th percentile (min)	66.4	73.5	56.5	42.3	54.0	48.8
	OP-TAT 60 min (%)	14.5%	15.4%	8.5%	4.3%	7.6%	5.3%
Urea	Sample number (n)	116	3961	8117	124	4152	7801
	Mean TAT (min)	35.4	46.3	40.0	26.8	38.5	33.2
	SD	23.3	39.7	52.5	24.7	20.0	49.9
	Median TAT (min)	28.9	37.4	30.5	**22.3 ***	**33.4 ***	29.1
	90th percentile (min)	59.8	71.3	58.9	40.9	50.4	49.2
	OP-TAT 60 min (%)	10.3%	15.0%	9.4%	**2.4%**	**6.3%**	**5.3%**

- Median TAT were reduced by 6 and 4 min for STA and urgent
- 90% tile TAT were reduced by avg. 22, 20 and 9 min for STAT, Urgent and Routine
- OP-TAT 60 min for both tests were reduced from 38- 77% for different priorities, indicating improvement of reporting consistency .

Impact of the Core Laboratory on the Community Hospitals- DGH

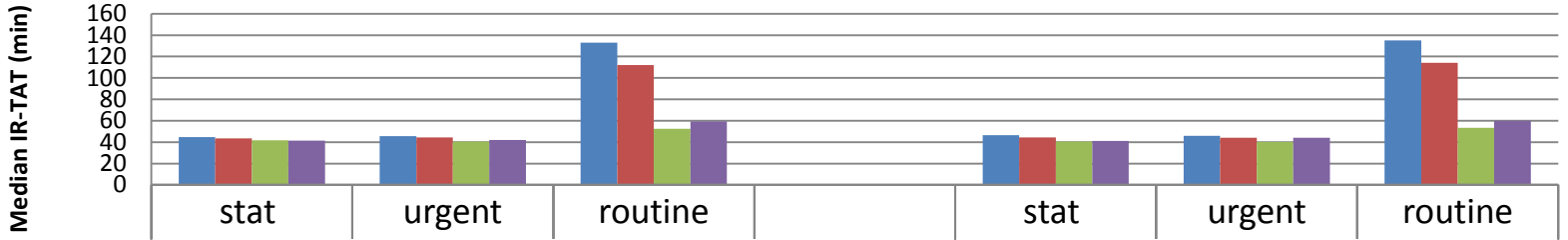
- What has been changed in other sites
  - Auto-verifications
  - Reduced routine test volume- referred to the core lab (65%)
  - Reduced FTEs- 1x tech-II and 2.5x tech-I (25% reduction)
- Impact of the changes on the in-lab TAT in DGH?
- Study periods

1. Pre-AV period: Oct. 2014
2. AV-RR: Mar. 2015
3. AV-RR + reduced test volume: Nov. 2015
4. AV-advanced + reduced test volume: Mar. 2016

Volume Changes in DGH

Volume	priority	2014 Oct. (pre-core)	2015 Mar (post-core+ AV-RR)	2015 Nov. (refer VG+ AV-RR	2016 Mar. (refer VG + AV-Adv.)	% diff Mar15-14	%diff Nov.15 -14	%Diff Mar.16-14
K	stat	77	93	102	82	17%	32%	6%
	urgent	2290	2277	2134	1848	-1%	-7%	-19%
	routine	5608 (70%)	4852	1322	1324	-16%	-76%	-76%
urea	stat	62	61	83	58	-2%	34%	-6%
	urgent	2168	2144	2034	882	-1%	-6%	-59%
	routine	4110 (65%)	3450	982	888	-19%	-76%	-78%
K+Urea	**Total monthly**	**14238**	**12784**	**6555**	**5000**	**-11%**	**-54%**	**-65%**

Median IR-TAT in DGH Site



		K				urea		
NO AV	2014 Oct.	45	46	133		47	46	135
AV-RR	2015 mar	43	44	112		45	44	114
AV-RR + Vol ↓	2015Nov.	42	40	53		40	40	53
AV-adv + Vol ↓	2016 Mar	42	42	59		41	44	60

1. *AV-RR improved TAT by 21 min for routine requests!*
2. *Decreased routine test volume shorten the TAT further by 1 hr*

Lessons Learned and Followup Actions Made

- **Auto-Verification**
  - Beneficial in
    - Free up staff
    - Improve the quality by standardizing the process of resulting
    - Reduce TAT
  - Troponin and other tests run on other platforms under the progress for auto-verification
  - AV rules should balance the error detection and fast TAT
    - Impact of AV rules on error detections under the progress

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Continue Monitoring TAT Across the Central Zone Following the Core Laboratory

- Review the goals
- Recommendations

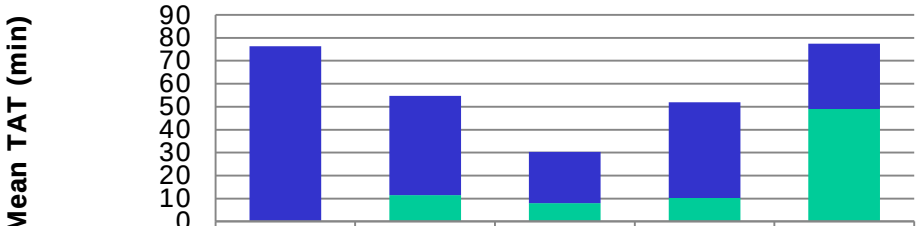
Test volumes for all the labs in the Central Zone (June, 2016)

Volume	STAT		Urgent		% Urgent	
	K +	Trop	K +	Trop	K +	Trop
CCHC Site	**2**	**3**	**1166**	**372**	100%	99%
DGH Site	**114**	**71**	**1898**	**773**	94%	92%
HCH Site	**1**	0	298	**123**	100%	100%
HI Site	**836**	**364**	**7365**	**1512**	90%	81%
VG Core Lab Site	**165**	**125**	**4707**	**276**	97%	69%

1. All routine requests is under the control of the VG Core lab with the TLA
2. TAT for STAT request – HI site
3. TAT for urgent requests should be the focus for all the sites

TAT review for STAT requests across the Central Zone (June 2016)

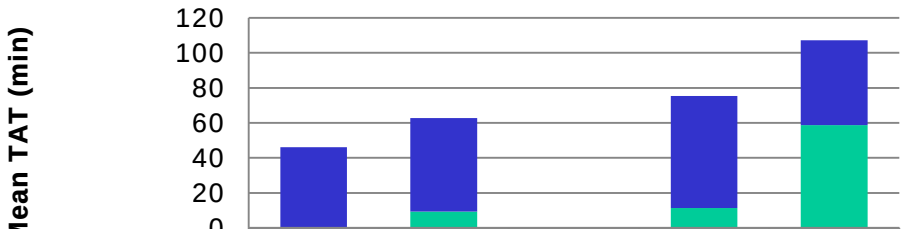
K+



	CCHC Site	DGH Site	HCH Site	HI Site	VG Core Lab Site
inlab TAT	76	43	22	42	29
delivery TAT	0	11	8	10	49

Mean total TAT	76	55	30	52	78
volume	2	114	1	836	165

Trop



	CCHC Site	DGH Site	HCH Site	HI Site	VG Core Lab Site
inlab TAT	46	53	0	64	49
delivery TAT	0	9	0	11	59

total TAT	46	63	none	75	107
volume	3	71	none	364	125

- Mean delivery TAT was only 10 min across all sites with the pneumatic system
- In lab TAT of HI site (ER) can be improved to reach the possible shortest mean total TAT.

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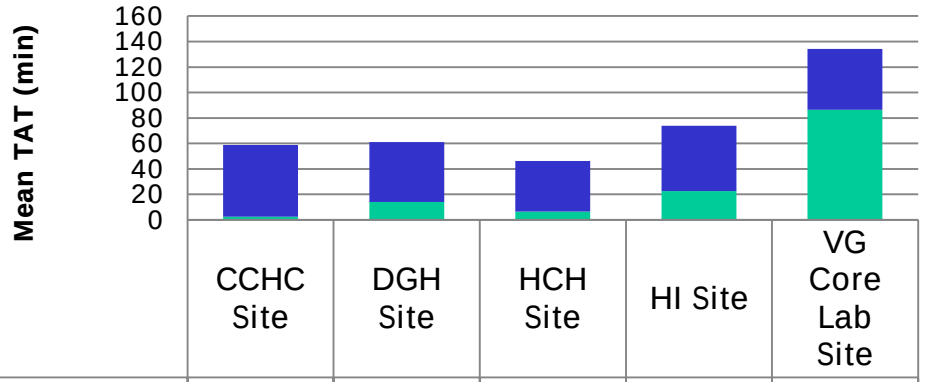
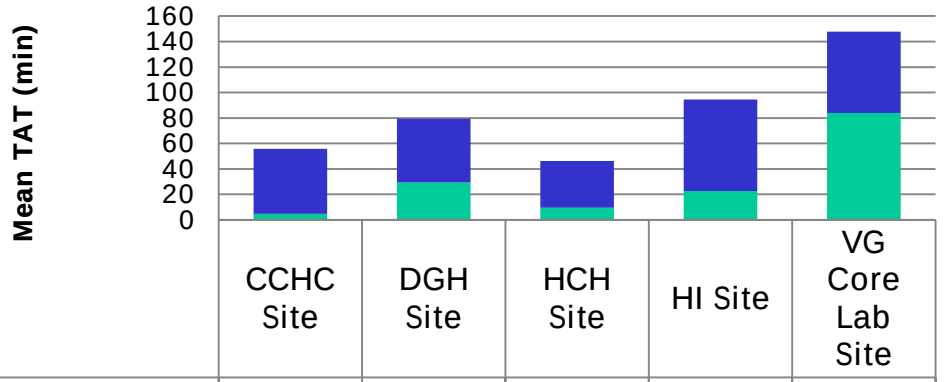
TAT Review for Urgent Request Across the Central Zone

Urgent K+



	CCHC Site	DGH Site	HCH Site	HI Site	VG Core Lab Site
inlab TAT	56	47	40	51	48
delivery TAT	2	14	6	23	87
total TAT	59	61	46	73	134
volume	1166	1898	298	7365	4707

Urgent Trop



	CCHC Site	DGH Site	HCH Site	HI Site	VG Core Lab Site
inlab TAT	51	50	37	72	64
delivery TAT	5	29	10	23	84
total TAT	56	79	46	88	148
volume	372	773	123	1512	276

- HI site shows the longest delivery, in-lab and total TAT for both K and Trop, which can be associated with the highest volume.
- By comparing the TAT across the sites, each lab should determine its own goals

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Recommendations:

Set new goals of TAT - Clinical needs & laboratory capabilities

- For VG
  - Do not service emergency; no pneumatic tube system; TLA implementation
  - One goal for all requests
    - Inlab - TAT: 1hr
  - Reduce outlier rate

- For HI & DGH & other sites
  - Pneumatic tube system
  - STAT for HI
    - Delivery TAT: 15 min
    - Inlab TAT: 1hr
    - Total: 1:15
  - Urgent for all sites
    - Delivery TAT: 20min
    - Inlab TAT: 1:15 hr
    - Total: 1:30 hr

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General TAT goal: 90% completion time for in-lab TAT of <60 min for common laboratory tests!

Summary

- Significant positive impact of Core Lab on the laboratory service as a whole.
  - Improvement of total TAT across all the labs in the Central Zone
  - Reduced workload on other community labs
  - Cost savings in FTEs
    - 25% reduction in the community labs
    - 13% reduction in the QEII

- Change in workflow has driven new considerations in monitoring TAT
  - Setting new goals of TAT based on the clinical requirements and the laboratory capabilities/limitations
  - 90% completion time and outlier rate of TAT are more effective measurements of TAT and can be a marker of greater value for lab services and related clinical outcomes.
  - Analysis of the different phases of TAT helps identify potential areas for continuous quality improvement

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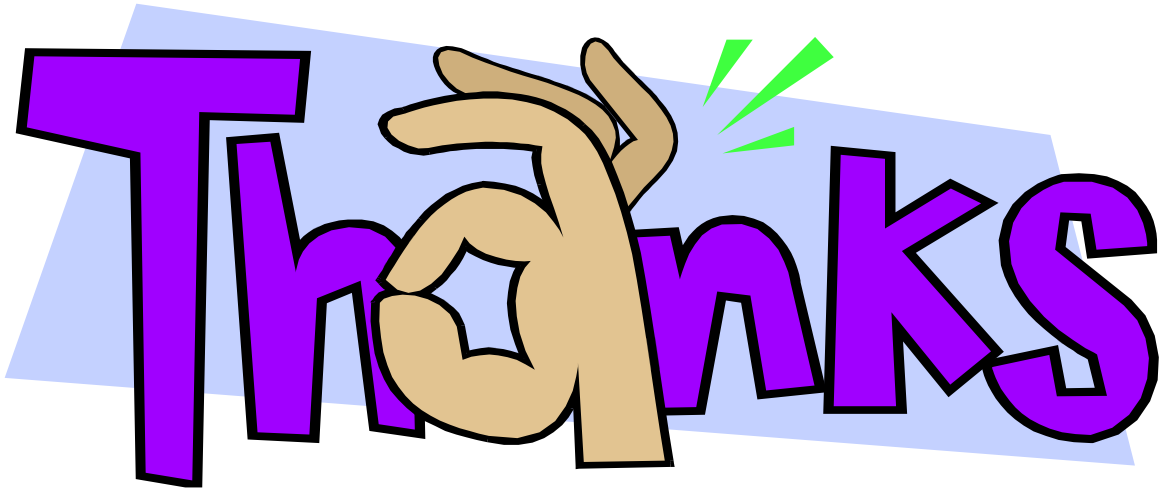

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Questions

1. For STAT requests, mean PR-TAT has no change for chemistry analytes while it is delayed significantly for hematology testing, WHY ?
2. Inlab -TAT for Urgent is longer than that of Routine although urgent samples were loaded on the priority lanes and routine samples were loaded on the routine lanes, why?
3. AV-RR is improved in DGH but not in HI, why?

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