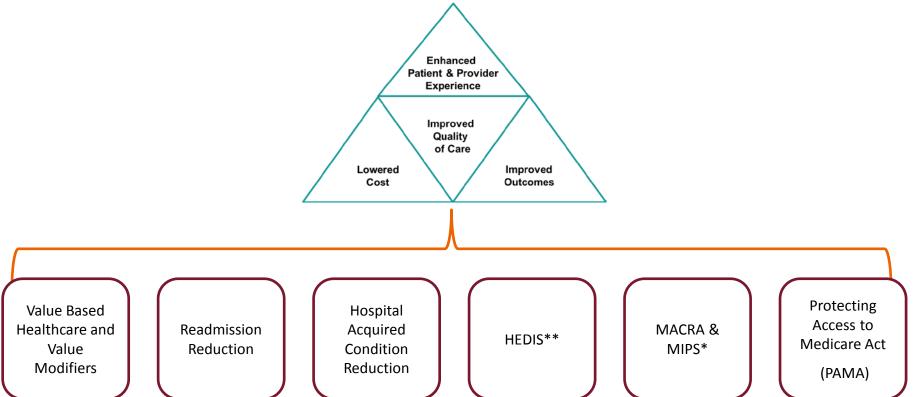
#### **Market Dynamics Continuing to Affect Lab Testing**



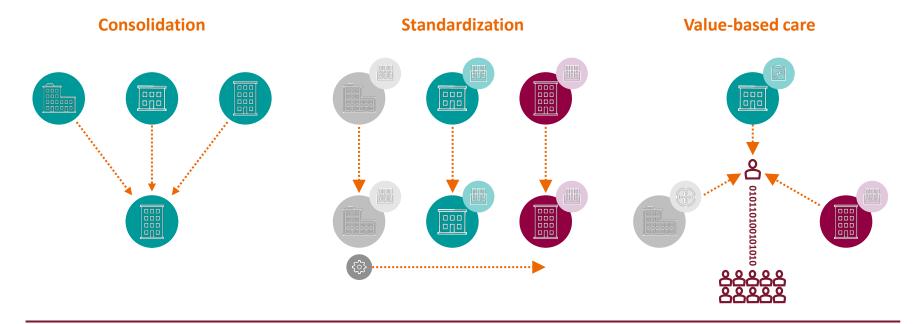
\*Medicare Access and CHIP Reauthorization Act (MACRA) and Merit-Based Incentive Payment System (MIPS)

\*\* Healthcare Effectiveness Data & Information Set (HEDIS)

#### Value-Based Healthcare and Alignment to Lab 2.0 Reduces Cost

Domain	Individual Measures		
Safety (weighted 25%)	<ul> <li>Catheter-Associated Urinary Tract Infection (CAUTI)</li> <li>Central Line-Associated Blood Stream Infection (CLABSI)</li> <li>C. difficile infection</li> <li>MRSA</li> <li>PSI-90</li> <li>Surgical Site Infections</li> </ul>		Laboratory  Labs positioned to reduce cost, errors and readmissions:  Excilitating test result
Clinical Care Outcomes (weighted 25%)	<ul> <li>(SSI)</li> <li>AMI 30-day mortality rates</li> <li>HF 30-day mortality rates</li> <li>PN 30-day mortality rates</li> </ul>	Readmission & HAI Penalties	<ul> <li>Facilitating test result availability</li> <li>Driving adoption of evidence- based and guideline compliant testing (Troponin, Procalcitonin, infectious</li> </ul>
Efficiency and Cost Reduction (weighted 25%)	• Medicare Spending per Beneficiary		<ul><li>disease testing)</li><li>Driving data integration and medical decision support</li></ul>
Patient and Caregiver Experience (weighted 25%)	<ul><li>HCAHPS</li><li>Coordination</li></ul>		

# Market trends are driving the need for digitalization in Healthcare



Driving the need for digitalization in Healthcare



#### Greenbelt Project to Move ER POCT to Core Chemistry platform:

"Using Lean, Middleware Analytics and New Instrumentation to Improve TAT, Cut Expenses, Improve Consistency"

> Jonathan Sy Tan, MLS(ASCP)<sup>CM</sup>SC<sup>CM</sup> Chemistry Technical Specialist Columbus Regional Hospital

# **Columbus Regional Hospital**

Jonathan Tan

Chemistry Technical Specialist Clinical Laboratory Operations 2400 17<sup>th</sup> Street Columbus, IN 47201

www.crh.org



- Nonprofit hospital servicing 10 counties in southern IN
- more than 2,100 employees, 225 physicians on medical staff and 250 volunteers.
- Indiana's first Magnet designated hospital for outstanding nursing care
- 255 registered beds
- Winner of the AHA's Quest for Quality Prize
- Aptio Automation with Atellica Diagnostic IT portfolio

# **Columbus Regional Laboratory**

□ 24/7 full service laboratory providing for:

- CRH 32 Service centers
- Inpatient admissions
- ✤ 38 Physician offices
- ✤ 8 nursing homes
- 20-bed Emergency Department
- CAP Accredited



#### THE FLOOD OF '08 \_\_\_\_\_ CRH recovery to take months; patients redirected

#### By Colo January 1997

al and the local dates

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## The Event



On June 7, 2008, Columbus Regional Hospital experienced a disaster on a scale few other hospitals have survived - a flood of historic magnitude severely damaged the hospital, prompting the evacuation of 157 patients, and forcing us to close our doors for the first time in our 90 year history. The flooding caused over \$180 million in damages and destroyed several critical functions, including our laboratory, pharmacy, information services, food services, and mechanical and electrical systems.

But on October 27, 2008, less than five months after the floodin Columbus Regional Hospital opened the doors to its new and improved facility and continued its commitment to excellence and serving the region.

And the process improvement journey began....

#### The New Laboratory

Fall 2008

- FEMA & Insurance replaced our chemistry instruments, but because of some restrictions we had to get like for like: 2 RXL Max, 2 Centaur XP
  - Add on: StreamLab Automation
- Before the flood happened the laboratory was in the process of acquiring new instrumentation

#### Fall 2017

The laboratory acquired new chemistry instrumentation: 2 Vista 1500, 1 Centaur XPT, Aptio Automation and the Centralink Data Management system

Our upgraded lab equipment was long overdue. At the time of the flood we felt we were already behind the times with our solution.

### Decisions, decisions.....

Because of the new integrated chemistry system and use of middleware our laboratory made the decision to improve our patient testing process

#### We decided to:

- Discontinue Point of Care (POC) Emergency Department testing on Stratus and Nova
- Move all Cardiac testing, Basic Metabolic Panels and Lactic acid from the lab dedicated ED POC bench to the Vistas in the core lab

# Emergency Department Bench Workflow Improvement Project

Columbus Regional Hospital Laboratory Green Belt Project Fall 2017

### **Project Overview**

- Workflow on the ED bench needs to be stream-lined and efficient to provide fast, consistent and high quality results to provide the best decision information to the ED providers for best patient care.
- This project is focused on creating a standard process of how specimens flow through the laboratory, utilizing the most efficient instrumentation, while balancing cost and turn-around time.
- During the flood we developed a close working relationship with the Emergency Department staff. We decided to utilize these relationships to collaborate for better patient care.

# Project Team

Matt Chaille	Champion
Darcy Hill	Green Belt
Marty Dominik	Team Member
Amy Herald	Team Member
Sara Moening	Team Member
Mariah Kinman	Team Member
Marty Plascak	Team Member
Jonathan Tan	Owner
Kathy Springhorn	Owner

# Green Belt Process/Steps

- SIPOC
- Murphy's Analysis
- Current Process Map
- Add Murphy's to current process map
- DOTWIMP (Waste)
- Create future process map
- Made separate maps for each specimen type
- Used maps to create Standard Work Instructions

# Green Belt Project Process

	Co	SIPOC	lth	
Who	What	Action	What	Who
SUPPLIERS	INPUTS	PROCESS	OUTPUT	CUSTOMERS
Patients	Doctor's orders	Receive Specimens	Lab Results	Patients
ED staff	Patient Specimens	Log-in Specimens	Quick Turn-around Time	Family Members
Lab Staff	Tracking Board	Process Specimens	Happy Doctors	Physicians
Instrument and Reagent Suppliers	Centrifuge Microscope Instrument Timers	Analyze Tests		Nurses
Lab and ED Management	Computers and Phones	Release Results		Lab staff

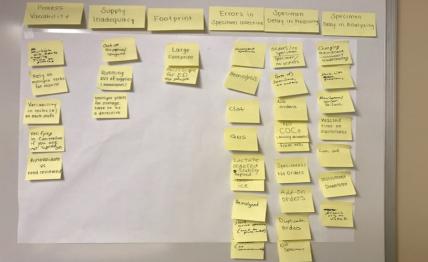
Columbus Pagional Health

## Kaizen Event



• Gathered operators, owners and managers of a process

#### • Murphy's Analysis



#### Current Process + Murphy's Analysis



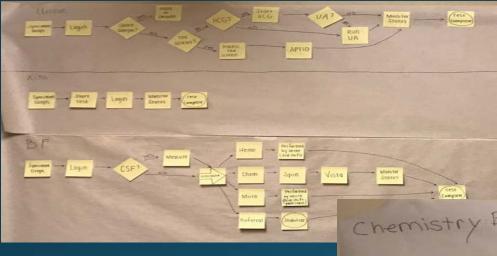


#### DOTWIMP Waste

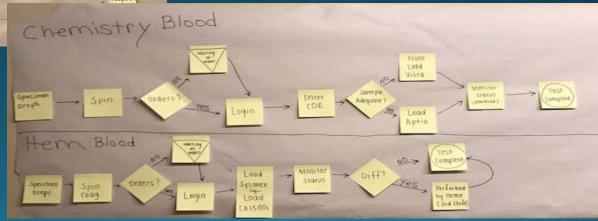
- Defects- errors, not meeting quality standard
- Overproduction more than is needed, duplicates
- Transportation of entities, primary or secondary
- Waiting- for something needed to move forward in process
- Inventory- extra raw materials, excessive work in progress
- Motion extra physical movement in place or place to place
- Processing- includes non-value added steps

Post-it	Eard Fad Tableus à fondies mobiles Block de Highe Repeationables
D	Instrument Errors, Dourshme, Shared Specimens, QNS Clothed etc.
D	Duplicable orders
T	Layout
W	Waiting for orders, Comparter Downtime
1	Membranes, Sonsers, Reputs
M	Layout of Lab, Muthple Departments.
P	Novas, structus

#### Future process map



- Improved on the process
- Obtained buy-in from all lab/ED stakeholders



# Standard Work Instructions

Standard Work Instruction Body Fluids
 Standard Work Instruction Chemistry
 Standard Work Instruction Hem
 Standard Work Instruction Kit Tests
 Standard Work Instruction Urine



# **Bench Modifications**

- Remove POC instruments
- Small centrifuges moving to bench
- Remove drawers on the right side next to tube station
- Add scope back for third shift
- One small refrigerator going to counter under Alere
- One small refrigerator for extra grey plasma
- Kit testing moved to cart

# **Control Plan Summary**

Columbus Regional Hospital Department Name/Process Control Plan Summary

H		-					
Purpose	Owner/Decision Maker	Control Tool	Measure/Monitor (What will be measured)	Frequency (How often and at what point)	How will it be measured (Include sample size etc)	Goal/Action Trigger	Response to Action Triggers (who will respond & how)
<u>Cardiac</u> <u>Testing</u> : Ensure results are verified in a timely manner	Tan Springhorn	Fusion Charts	The average time from receipt of specimen to time of verification Outliers above set threshold	Daily monitoring for first month. Once numbers stabilize, weekly.	All specimens tested will be included on the Fusion Chart	TAT <30 min Outliers < 10% per day	Owner: reviews daily TAT performance report, follow up with MT, coaching/mentoring if needed.
BMP: Ensure results are verified in a timely manner	Tan Springhorn	Fusion Charts	The average time from receipt of specimen to time of verification Outliers above set threshold	Daily monitoring for first month. Once numbers stabilize, weekly.	All specimens tested will be included on the Fusion Chart	TAT <30 min Outliers < 10% per day	Owner: reviews daily TAT performance report, follow up with MT, coaching/mentoring if needed.
Lactic Acid: Ensure results are verified in a timely manner	Tan Springhorn	Fusion Charts	The average time from receipt of specimen to time of verification Outliers above set threshold	Daily monitoring for first, month. Once numbers stabilize, weekly.	All specimens tested will be included on the Fusion Chart	TAT <30 min Outliers < 10% per day	Owner: reviews daily TAT performance report, follow up with MT, coaching/mentoring if needed.

# **Transition Complete**

On December 20<sup>th</sup>, 2017 at 9:00 am, the laboratory discontinued testing chemistry samples on the point of care instruments. Cardiac panel, Chem 8 and lactic acid previously run on the stratus and Nova (POC) are now performed on the Siemens Vista analyzers. This allowed the laboratory to streamline our testing process while utilizing the newest technology available.



COLUMBUS REGIONAL HOSPITAL

INTERNAL CORRESPONDENCE

10.	ED physicians and statt
FROM:	Darcy Hill, Manager of Laboratory Testing Services Dr. MaryAnn Bridge, Medical Director
DATE:	December 13, 2017
SUBJECT:	Discontinuation of POC testing

ED physicians and staff

TO

Beginning December 20<sup>th</sup>, 2017 at 9:00 am, the laboratory will discontinue testing chemistry samples on the point of care instruments. All testing will be performed on the Siemens Vista analyzers. This will include the cardiac panel, <u>chem</u>. 8 and lactic acid tests. This will allow the laboratory to streamline our testing process while utilizing the newest technology available.

All ED power plans will be updated to include the correct replacement orders. After the change when a saved favorite power plan containing this order is used, yournay receive an alert reminding you to ressve as a new favorite. See the conversion table below.

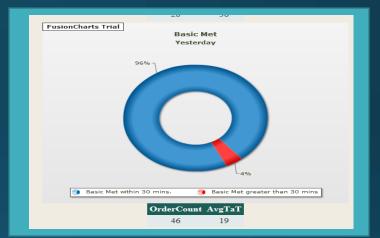
Remove from PP	Replacement order
POC BNP(NTprp) Request	NTproBNR.
ED POC BNP (NTprp)	NTproBNP.
POC Cardiac Series Request	Cardiac Series #1
ED POC Cardiac Series	Cardiac Series #1
POC Chem 8 Request	Basic Metabolic Panel
ED POC Chem 8	Basic Metabolic Panel
POC Creatinine Request	Creatinine
ED POC Creat	Creatinine
POC Critical Care Panel	Basic Metabolic Panel, Lactic Acid, Hemoglobin and Hematocrit
Request	
ED POC CritCare Panel	Basic Metabolic Panel, Lactic Acid, Hemoglobin and Hematocrit
POC Hgb and Hct Request	Hemoglobin and Hematocrit
ED POC Hgb+Hct	Hemoglobin and Hematocrit
POC Lactate Request	Lactic Acid
ED POC Lactate	Lactic Acid
POC Lates Request	Electrolyte Panel
ED POC Lytes	Electrolyte Panel
POC Sepsis Request	Basic Metabolic Panel, Lactic Acid
ED POC Sepsis Panel	Basic Metabolic Panel, Lactic Acid

Please contact Darcy Hill, laboratory manager with any questions at 812-376-5170.

**Emergency Department Bench** Workflow Improvement Project Tools used to monitor and achieve our goal: **ED Test Reporting Consistency** 

### Controls: What will be monitored?

- TAT for Troponin, BMP, Lactic Acid
- Outlier for specimens that are not
- completed within 30 minutes
- Investigation and follow up
- Tool to evaluate the new process
- Monitored daily at first



000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	AGAP.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	BUN.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	BUN/Creatinine.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	CO2.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	Calcium Level.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	Chloride Level.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	Creatinine level	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	Glucose Random.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	Hrs PP.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	Potassium Level.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98
000002017338001831	5551388970	12/4/2017 3:55:30 PM	Basic Met-	Sodium Level.	ST - Stat	Weesner MD, Carol	12/4/2017 4:26:00 PM	12/4/2017 4:33:16 PM	12/4/2017 6:11:53 PM	98

# Monitoring Dashboard

C30	▼ (* <i>f</i> x																																	
A	В	С	D	Е	F	G	Н	1	J	K	L	М	Ν	0	Ρ	Q	R	S	Т	U	۷	W	Х	Y	Ζ	AA	AB	AC	AD	AE	AF	AG	AH	AI
	Measure	Owner	Threshold															Day	of Mo	onth														
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	n	Jonathan																																
Troponin-I	In-Lab Avg TAT	Jonathan	<30 min																															
	% Outliers > 30 min	Jonathan	<10 %																															
	n	Jonathan																																
Lactic Acid	In-Lab Avg TAT	Jonathan	<30 min																															
	% Outliers > 30 min	Jonathan	<10%																															
	n	Jonathan																																
BMP	In-Lab Avg TAT	Jonathan	<30 min																															
	% Outliers >30 min	Jonathan	<10%																															
2																																		

# Centralink Data Manager

- Auto-verification rules and calculations are currently all built in CentraLink Data Management system vs LIS Auto-verification rate improvement from 73 % to 90 %
- Continuous improvement process in place for TAT. Create new rules in CentraLink or update rules to help with tube and sample management

Time interval to a	refresh at	15				L. Barris S. S. S.		
	Total	STAT	My counters					
Pending	73	5	STAT	4	9	ENDO	0	
Rerun	4	1	CTNI	1	N.	LAC	0	9
Scheduled	2	0	Review	0	9	ED	0	9
Review	0	0	Critical	0	9	2	0	
Validated	0	0	Ib_di	0	PI I	2	0	
Uploaded	102,481	27,592	pending ED gluc	0	4	?	0	
Omitted	8,279	1,059	24 hr uine	0	4.	2	0	
Unknown	10,240	65	Red	0	4	3	0	]]]r
Total	121079	28721						
					-	Reliesh P	urge	Close

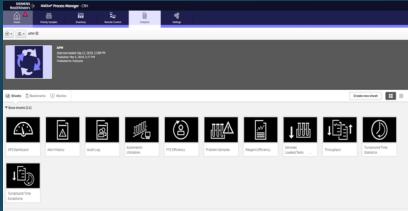
## Atellica Process Manager (APM)2.0



Implemented APM 2.0 March 2018 as the laboratory workflow and efficiency tool

# Current Use of APM 2.0

- Monitor STAT samples to improve TAT
  - Priority Alert rules, real time reporting analytics
- Instrument issue alerts
- Maintenance & reagent inventory alerts
- Remote Instrument Access
  - Communicate current testing times
  - Transmit test results
- Analytic Reports



Zone Designer Canned C	omente Aules Integrations Une Management System	
Default Sort	New Aule   Copy Aule Delete Aule	
Probled	THE .	Rule Type
~	Oversiting for several data to data	Concernable Investory Lower
~	Default Respect Expanded Rate	Respect Expection Alert Fule
	Respect Diversion Revel Alerts	Respect Inventory Levels Aler
~	Vista 1 Monthly Maintenance Reminder	User-Cefined Alert Rule
<b>X</b>	Vida 3 Meekky Maintenama Ramindar	User-Defined Alert Role
	Visita 2 Monthly Marchinance Removaler	Unar-Defined Akert Rula
	Vista 2 Weishly Automatice Elementation	than Onlined Alert Rule
4	Weekly Centaur XPT Shutdown & Xentup	user Defined Alert Rule

Apply this rule for the following comunities inventory: AE Carnet and Future Comunities Inventory Dams when Radied on ADVIA Centers XPT (FLLSCTUBD), Dimension Year 1000 (FV780178), Dimension

Show a warning abert if the consumable inventory level is less than 3 percent Show a critical alert if the consumable inventory level oncer this inventory alert is currently disabled

When this plant eccurs, send an annal to on one.

Excellete this elect if it is not acknowledged: never, this escellation option is currently disabled (scalare this elect if it is not resolved; <u>gener, this escalation, option is currently disabled</u>.

When this alsof excellates, send an email to <u>payone</u> Note that a second email will not be cent when a resoluted evaluation setting becomes valued while an acknowledged escalation setting is currently in volation

When this alert assolutes and is resolved, do not send an email notification

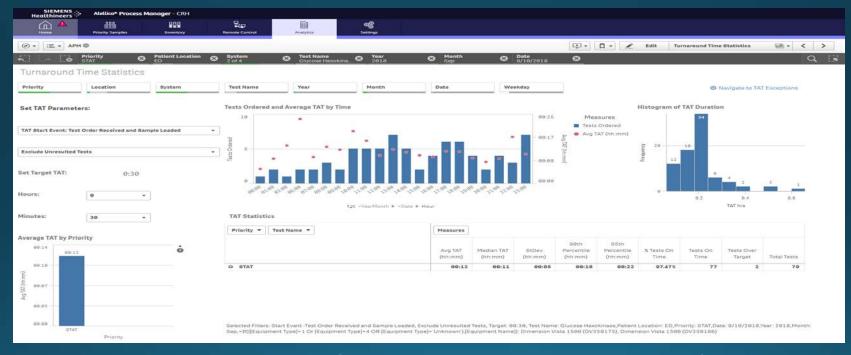
This rule is tilled <u>Chemistry Comparables Rule</u> and is <u>Enabled</u>

### Atellica Process Manager 2.0

Healthineers		·····o-·· -···						
Home	Priority Samples	חחה Inventory	Remote Contro	N Analytics	() Settings			
Default Sort	Stop Tracking (0)	✓ Display	/ On-Time STAT Sample:					
\land 🔺 Overdu	ie At Risk	Test Count	!	Sample ID	Elapsed Time	Patient Location		Last Seen On
• 0	0	1	002551056A		< 1 Minute	T3 (T3)	DCM	
• 0	0	1	002550591A		6 Minutes	ED (ED)	SRM	
• 0	0	1	002550626A		9 Minutes	T2 (T2)	SRM	
• 0	0	16	002550914A		25 Minutes	ICUA (ICUA)	SRM	
• 🔬 0	0	20	002551065A		2 Minutes		IOM	

#### Priority Sample Rules setup monitor and improve TAT

### APM 2.0 TAT Report



APM 2.0 TAT report used to monitor real time turn around times; report quarterly to ED colleagues

### APM 2.0 TAT Exceptions Report

- S.C S.	HA Priority Samples	Driventory	Remote Control		il) Hyrics	මලි Settings										<u>1</u>		
		Patient Location	3 System 2 of 4		est Name lucose Hexokina.	Year 2018	G	Month Sep	-	Date 9/10/	2019	Q.	₽•] ( ¤	- 4	Edit	Turnaround	Time Exceptions	@ • <
	ime Exceptions		2 014	La	Iucose Hexokina			1980		- 9/19/	2018							
Priority	Location	System	Test Name	Ye	ar	Month		Date		Weekday							© Navigi	te to TAT Statistics
TAT Exceptions																		
Date Q	Patient Location	Q Test Name		Q	Priority	Q, System			Q,	Sample ID	Q	Started		q	Ended	q	TAT (hh:mm)	Overage (hh:m
09/10/2018 09/10/2018	ED ED	Glucose Hexok Glucose Hexok			STAT		Vista 1500 (D'			002530681A 002530307A		09/10/2	018 10:31	AM.	09/10/2018	8 11:07 AM	00:36 00:31	00:06
AT Exceptions by S	ystem			ТАТ	T Exceptions by	y Test Name						та	TExcept	ions by	Patient Loca	ation		
T Exceptions by S	iystem			TAT	2	y Test Name						AT * Societions Economics	2	ions by	Patient Loca	ation		

ype]=1 Or [Equipment Type]=4 OR [Equipment Type]= 'Unknown'), [Equipment Name]): Dimension Vista 1500 (DV350175), Dimension Vista 1500 (DV350186)

# APM 2.0 TAT Exceptions report used to monitor real time turn around time exceptions; report quarterly to ED colleagues

### APM 2.0 Analytic Reports

SIEMENS	Atellica® Process Mar	<b>ager</b> - CRH								
Home P	Priority Samples	Enventory	Remote Control	Analytics	මා Settings					
<ul> <li>Ø ▼ IΞ ▼ APM Φ</li> </ul>										
	APM Data last lo Published to Published to	aded: Sep 12, 2018, 12:6 kar 5, 2018, 3:27 PM : Everyone	10 PM							
🗐 Sheets 🗍 Bookma	rks 📮 Stories								Crea	te new sheet
▼ Base sheets (11)										
KPI Dashboard	Alert History	Audit Lo		utomation tilization	FTE Efficiency	Problem Samples	Reagent Efficiency	Samples Loaded/Tests	↓ ŢŢŢ	Turnaround Time Statistics
Turnaround Time Exceptions										

Investigate problem samples pre-analytic, analytical and post-analytic phases of testing.

# **ED** Collaboration

- Identifying their champion and discuss the change.
- Attending ED section meeting. To answer any questions/clarifications they will have.
- Showing them data on how the change will affect them.
- Continuous communication even after the change has been implemented.

### Study: TAT Comparisons

#### TAT for BMP, Troponin and Lactate for POC and Vistas

Test Name	Average TAT*
POC Chem 8	10
Vista BMP	18
POC Troponin	20
Vista Troponin	18
POC Lactic Acid	9
Vista Lactic Acid	20

#### \* Time for Vista TAT includes the 3 spin time

#### Metrics

POC Analyzer Cost/Test	Vista Analyzer Cost/Test	Cost Difference		Monthly POC Test Volume	Potential Monthly Savings
\$ 5.83	\$ 0.21	\$ 5.62	BMP	154	\$ 866
\$ 12.69	\$ 2.27	\$ 10.42	Troponin	837	\$ 8,724
\$ 5.83	\$ 0.29	\$ 5.54	Lactic Acid	407	\$ 2,254
				Total	11,844
				Annual testing savings	\$ 142,128
			Telcor annual POC contract		\$ 7,274
				TOTAL ANNUAL	\$ 149,402

## **ED TAT Statistics**

Month	Percentage
February	46%
March	65%
April	83%
May	100%
June	83%
July	84%
August	90%

Tan, Jonathan S.
Mapes, Emily M.; Plascak, Martin J.; Spalding, Hope K.; Young, Mary M.; Delalamon, OmarJose I.; Cummings, Kimberly J.
Hill, Darcy R.
Weekend ED TAT 9/29 9/30

Hi Guys.

#### Great Job! 🕥

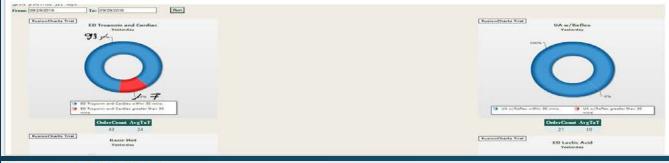
I did noticed that there were some samples that got delayed because it had an error "Unknown Tube type" on the line. It took some time before it was reintroduced back. I am working with Siemens to replace the whole cover for the camera to fix this issue.

In the meantime, we can catch this error by using the APM. The error will show up in your priority sample tab in red with the Unknown tube type error. I know it is hard to always look at the samples in the priority output rack.

We are still within our goal, but I usually check what the outliers is to investigate and try to find a solution for it.

#### Thank you guys!

#### Jonathan



From:	Tan, Jonathan S.
Fo:	ELAB_Medical Technologists
CC:	
Subject:	September ED TAT

	Measure	Owner	Threshold													Da	y of N	Aonth	SEP	TEMB	ER 20	18											
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	n	Jonathan		43	34	44	43	52	70	58	27	40	57	43	49	44	44	39	43	41	41	42	41	49	22	51	57	53	53	39	44	43	26
Troponin-I	In-Lab Avg TAT	Jonathan	≤30 min	19	19	20	19	21	20	19	19	20	19	20	20	22	19	22	22	20	21	20	20	20	18	20	20	19	22	21	19	24	19
	% Outliers > 30 min	Jonathan	≤10 %	0	2	2	2	5	1	1	0	5	1	6	2	3	2	5	7	7	0	0	0	0	0	4	1	1	8	5	0	7	0
	n	Jonathan	<u>1</u>	11	17	13	14	21	18	21	4	13	19	16	20	13	18	19	14	13	13	19	15	18	16	18	20	16	13	24	14	11	9
Lactic Acid	In-Lab Avg TAT	Jonathan	≤30 min	17	20	17	18	19	18	20	18	18	19	18	19	22	20	20	21	18	19	18	19	20	18	20	21	21	22	20	19	19	19
	% Outliers > 30 min	Jonathan	≤10%	0	5	0	0	4	0	4	0	0	5	0	0	15	0	0	7	0	15	0	0	0	6	11	10	6	7	8	7	0	0
	n	Jonathan	1	41	58	57	61	65	66	64	41	54	76	69	56	54	57	51	55	59	60	71	65	54	46	60	74	56	58	65	53	48	52
BMP	In-Lab Avg TAT	Jonathan	≤30 min	18	17	17	18	19	18	17	17	19	17	17	17	19	19	18	18	17	17	19	17	18	19	18	18	18	20	20	17	19	18
	% Outliers >30 min	Jonathan	≤10%	2	0	1	3	3	1	3	2	5	5	2	0	4	4	0	1	3	3	0	0	2	2	3	2	з	5	7	0	4	1

90% for the month of September! We made our goal for this month! Great Job everybody! ©

## Successes!

- Improved consistency
- SWI for techs to look up their questions and know how to run the bench
- We are better-able to answer questions from the ED regarding the status of their results. The tools we have in the APM and CentraLink allow us to stay at the bench to answer questions which improves our speed (before we had to physically go to the instruments).
- Post Green Belt, I feel there is a greater awareness between departments on TATs which leads to a more consistent reporting of results. This is a team effort to be good.

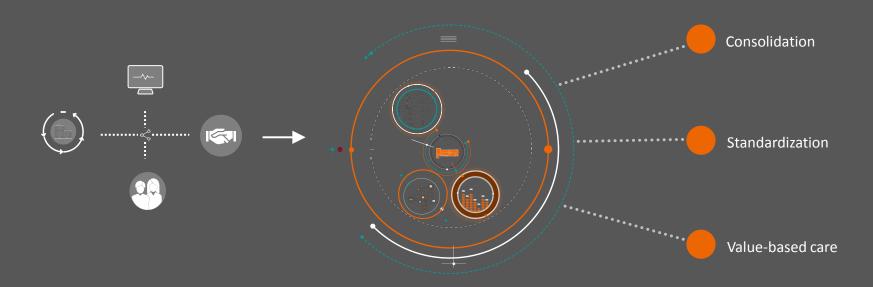
### Room for Improvement

- Better buy-in from techs regarding using the automation line for their ED samples. We should have emphasize it more or do some sort of activity to promote it better.
- By focusing on TAT, the ED person may sacrifice the use of the automated system for a quicker TAT by front loading specimens on the chemistry analyzers. By not utilizing tools available to us, we fall back on an individual effort to appear good rather than the team effort to consistently be good.

## ED Feedback

- It was a rough start. There was a lot of doubt whether we were really achieving our goal.
- Push back on our Stats and numbers.
- Key is always open constant communication and follow-up .
- Currently ED physician group has no problem with the new process.

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