

# Laboratory Medicine – October 2021

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November 22, 2021

# Bridgeport and Milford Campuses Turnaround Time Goals

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- Mean determined from median TAT across the Yale New Haven Health System delivery networks
  - Bridgeport and Milford Campuses – Bridgeport Hospital, Greenwich Hospital, Lawrence Memorial Hospital, Westerly Hospital, St. Raphael and York Street Campus – Yale New Haven Hospital and Shoreline Medical Center
- Standard Deviation calculated
- 2 SD Range established and represents the upper and lower limits
  - If data set within control range, no corrective actions are necessary

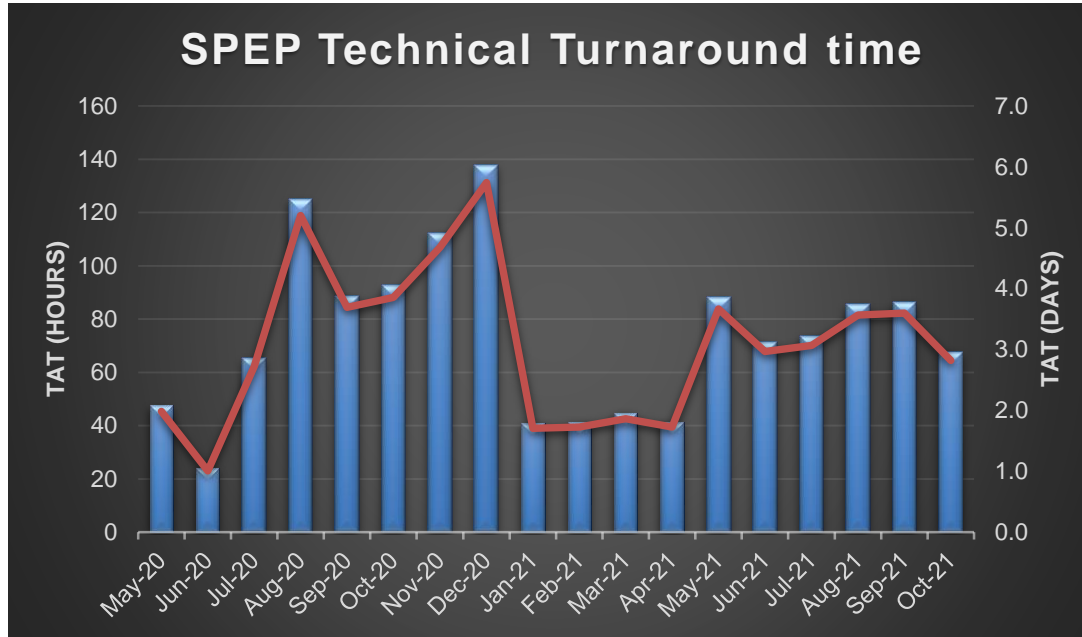
# FY21 vs. FY22 Baseline Comparison

Test Name	TAT			% Compliance		
	FY21	FY22	Change	FY21	FY22	Change
Procalcitonin	63	62	-1	53.5	57.1	3.6
Troponin	31	32	1	84.7	83.6	-1.1
BMP	29	29	0	88.4	87	-1.4
CBC	7	7	0	92.7	92.3	-0.4
PTINR	19	18	-1	87.8	89	1.2
D-dimer	23	21	-2	79.9	82.1	2.2
Type and screen	56	58	2	53.9	55.6	1.7
COVID Panther	317	298	-19	98	99.6	1.6
COVID Cepheid/Liat	63	57	-6	46.9	85.8	38.9
Legend						
Good						
Neutral						
Bad						

Changed from 60 to 90 minutes due to assay reformulation

# SPEP Outcome Metrics: Technical

## Establish Target & Stretch Goals



Threshold (FY22)	Target	Stretch
Baseline Median	25%	50%
4 days	3 days	2 days

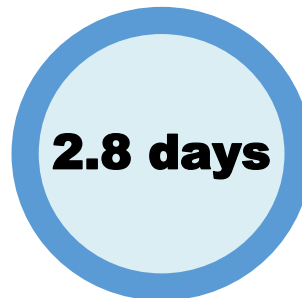
## Post Intervention

% Improvement	TAT (days)
Oct 2021	2.8
YTD	2.8

**Original Baseline:  
May 2020 – Dec 2020**



**FY21**

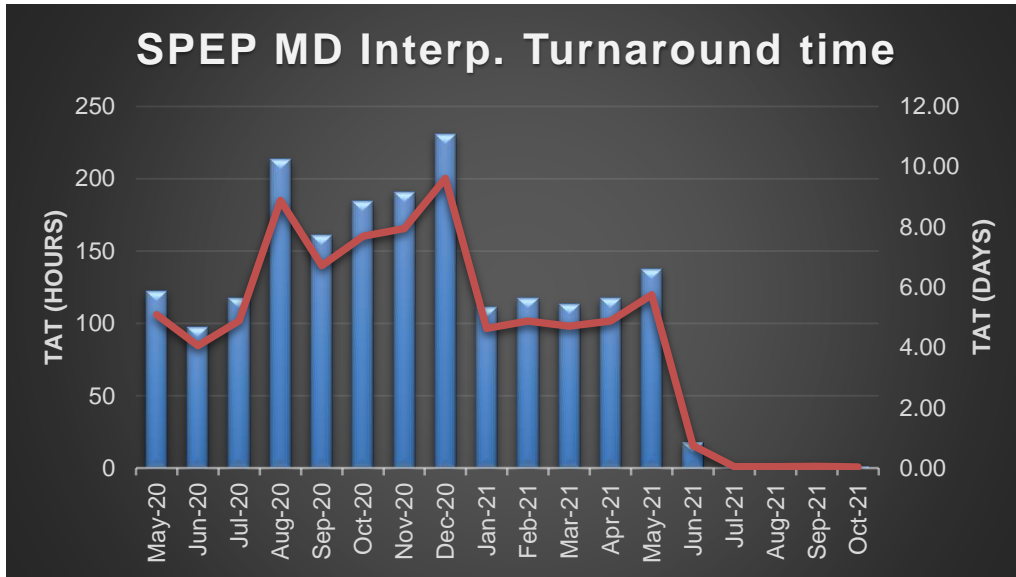


**FYTD22**



# SPEP Outcome Metrics: MD Interp.

## Establish Target & Stretch Goals



Threshold (FY22)	Target	Stretch
Baseline Median	25%	50%
3 days	2.3 days	1.5 days

## Post Intervention

% Improvement	TAT (days)
Oct 2021	0.04
FYTD	0.04

**Original Baseline:  
May 2020 – Dec 2020**



**FY21**

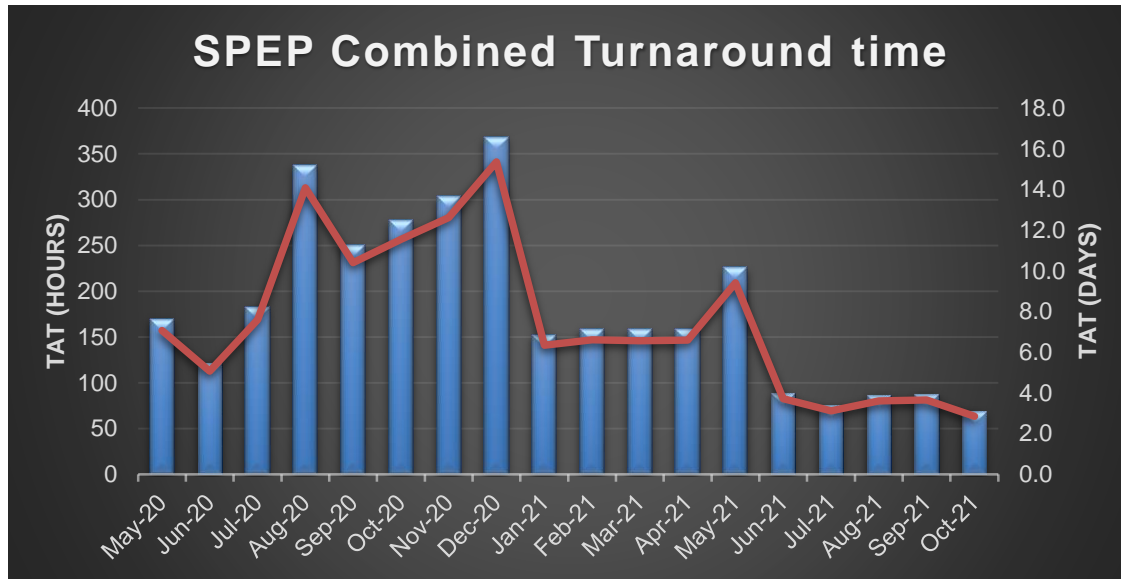


**FYTD22**



# SPEP Outcome Metrics: Tech + MD Total

## Establish Target & Stretch Goals

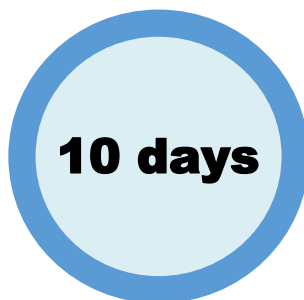


Threshold (FY 19)	Target	Stretch
Current Median	25%	50%
7 days	5.3 days	3.5 days

## Post Intervention

% Improvement	TAT (days)
Jan 2021	2.86
FYTD	2.86

**Baseline:**  
May 2020 – Dec 2020



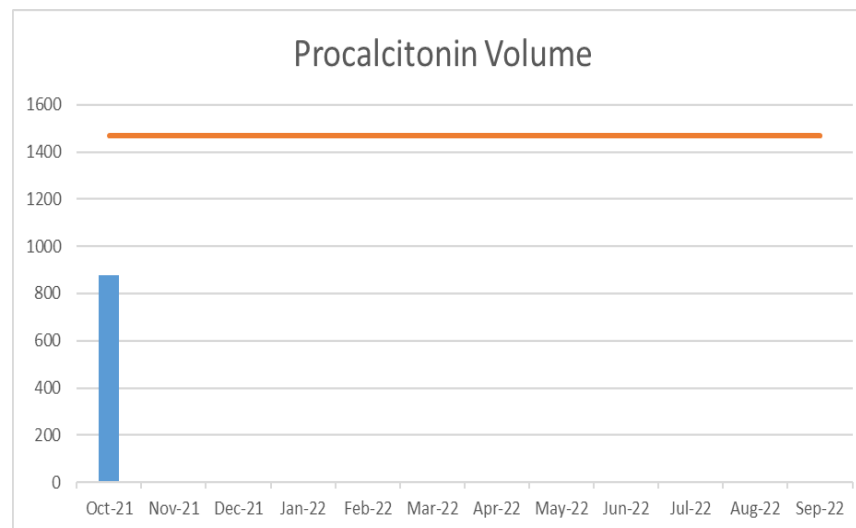
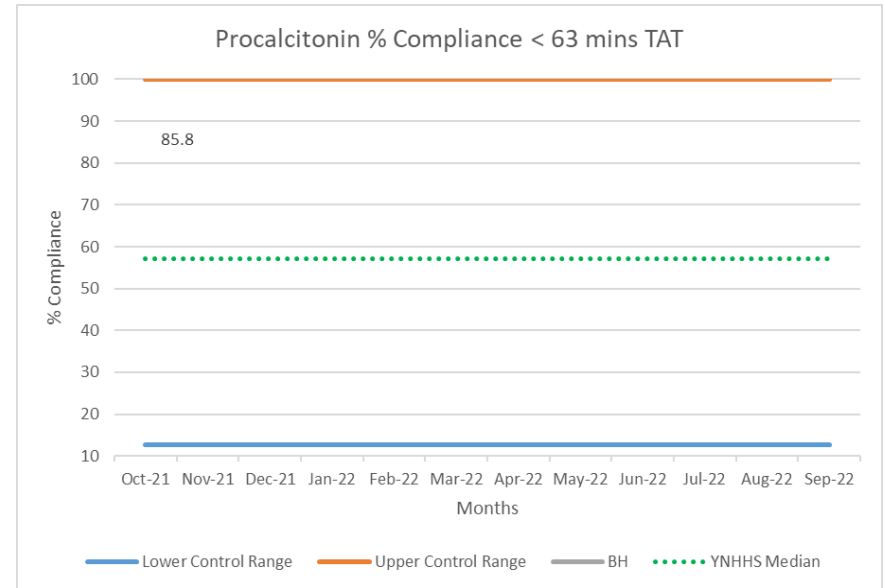
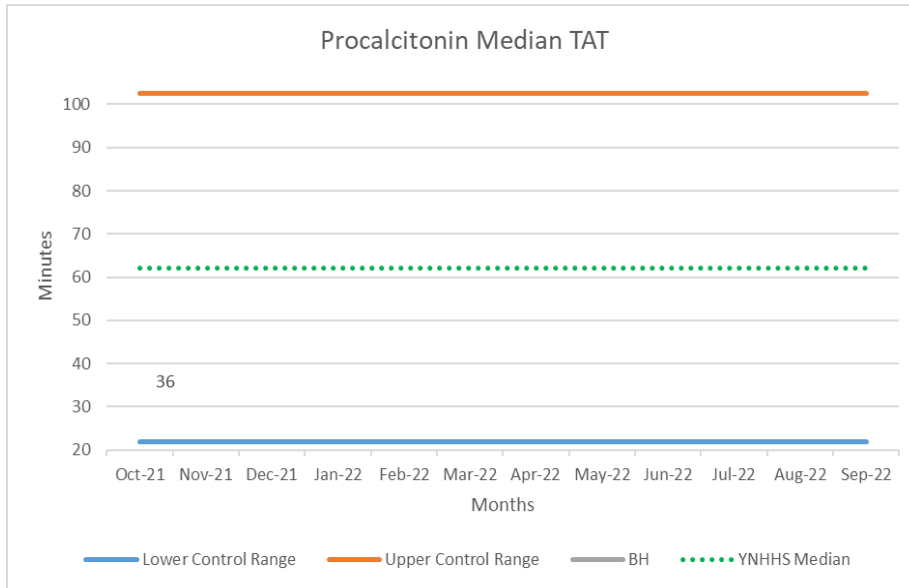
**FY21**



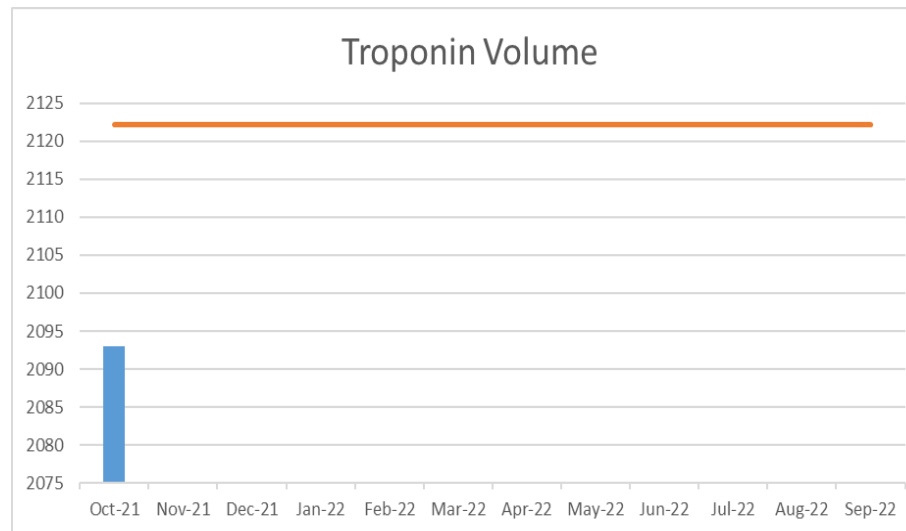
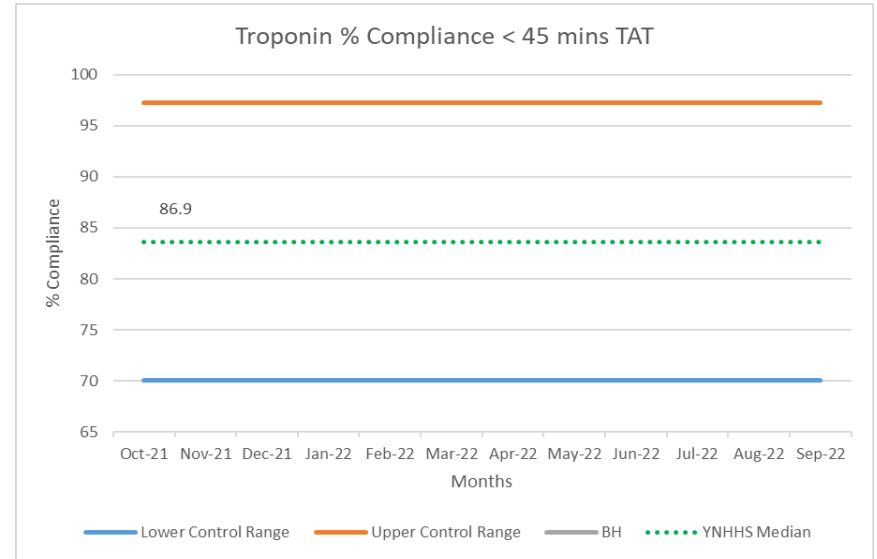
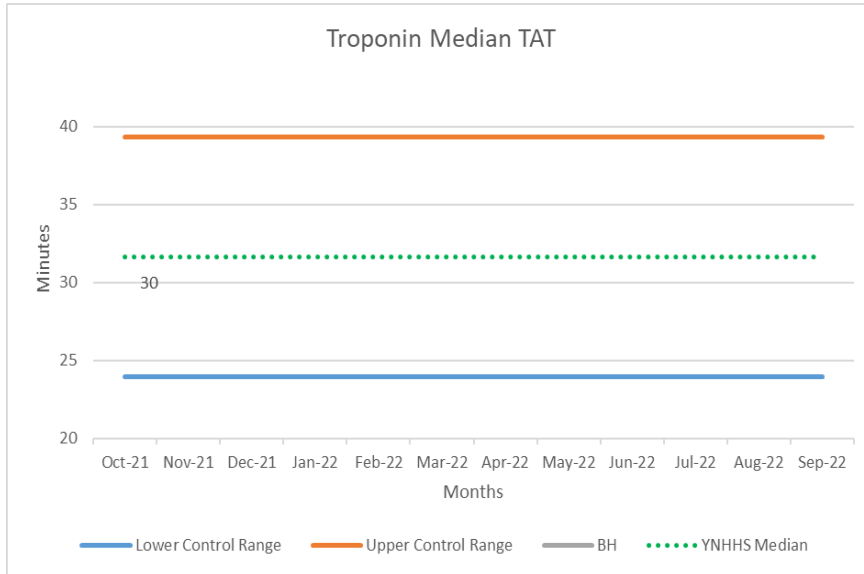
**FYTD22**



# Bridgeport Campus – Procalcitonin

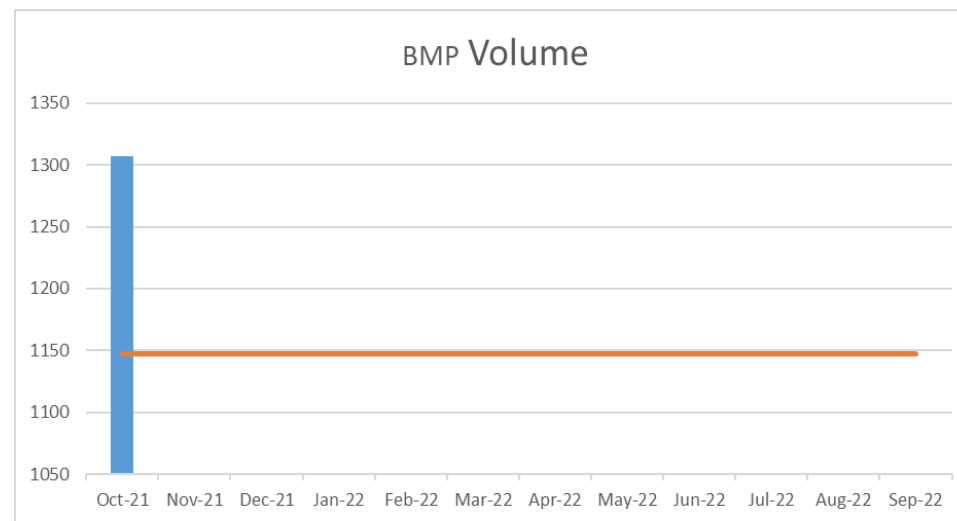
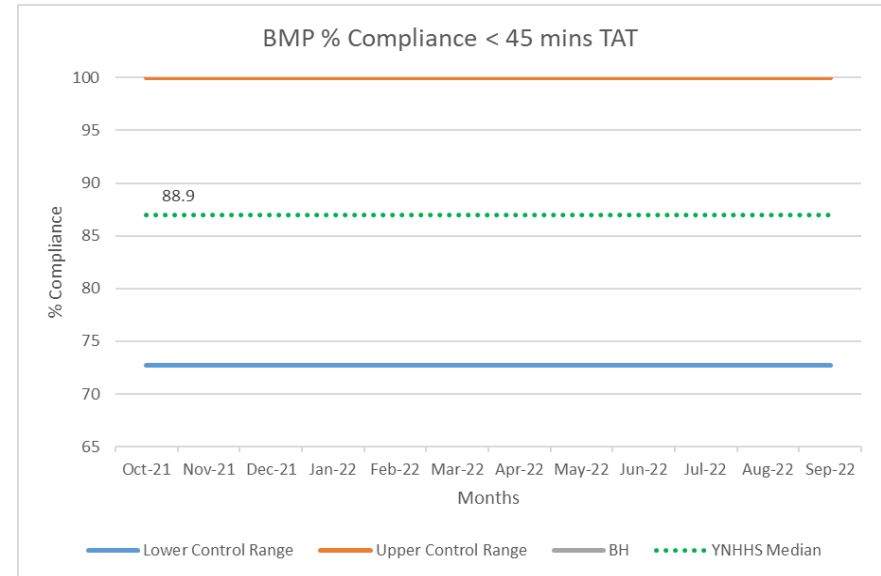
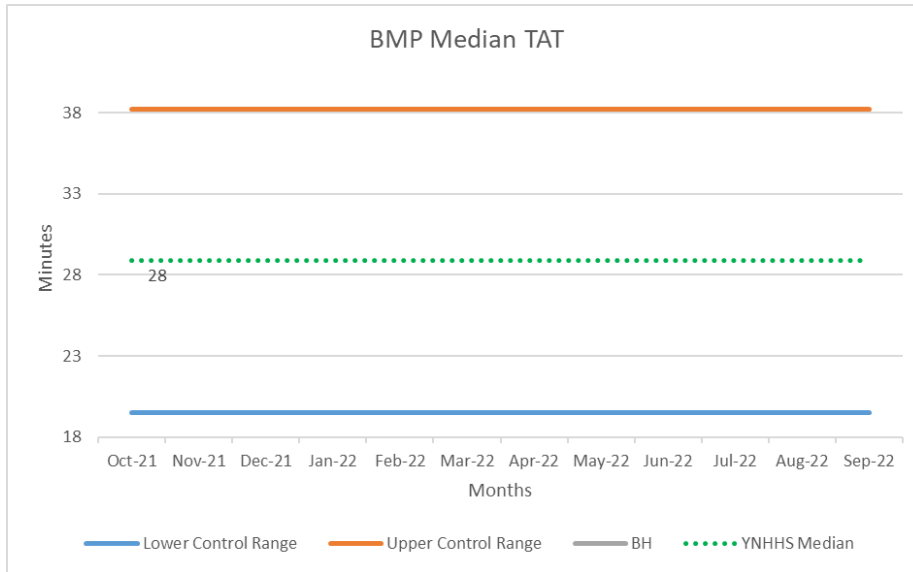


# Bridgeport Campus – Troponin ED TAT





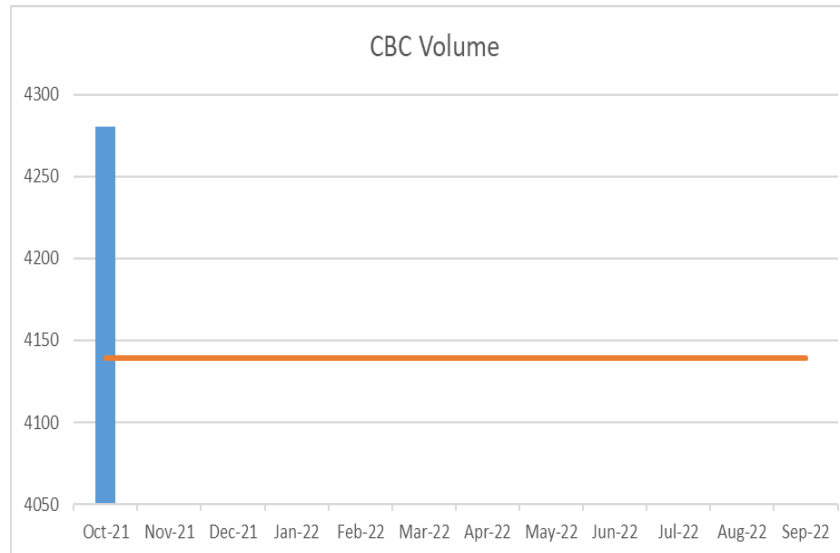
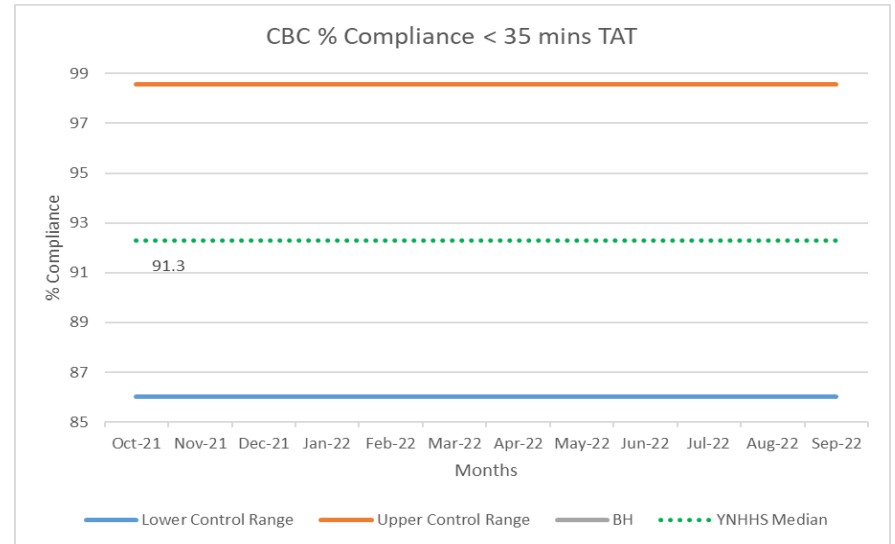
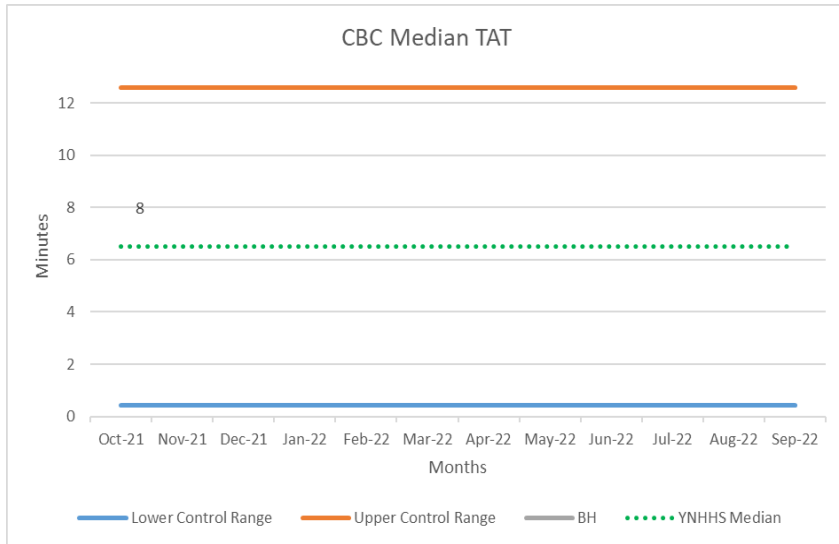
# Bridgeport Campus – Basic Metabolic Panel (BMP) ED TAT



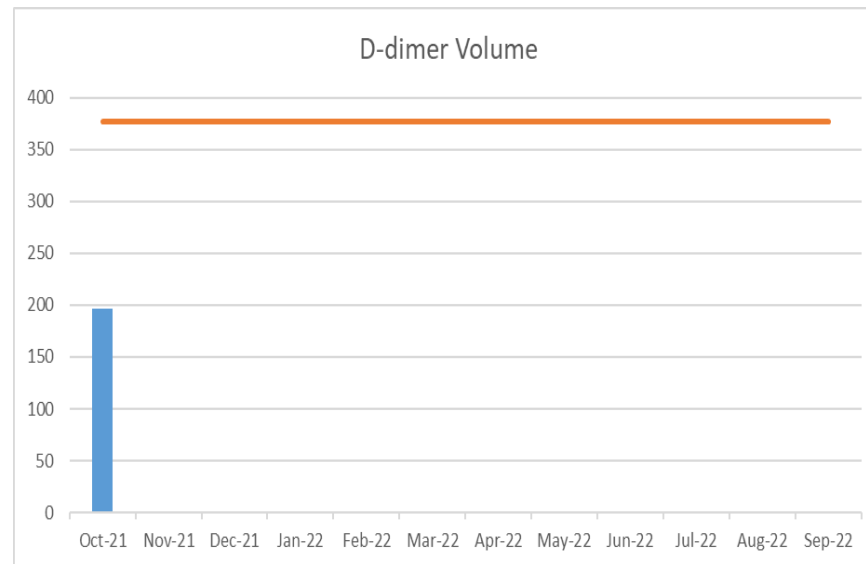
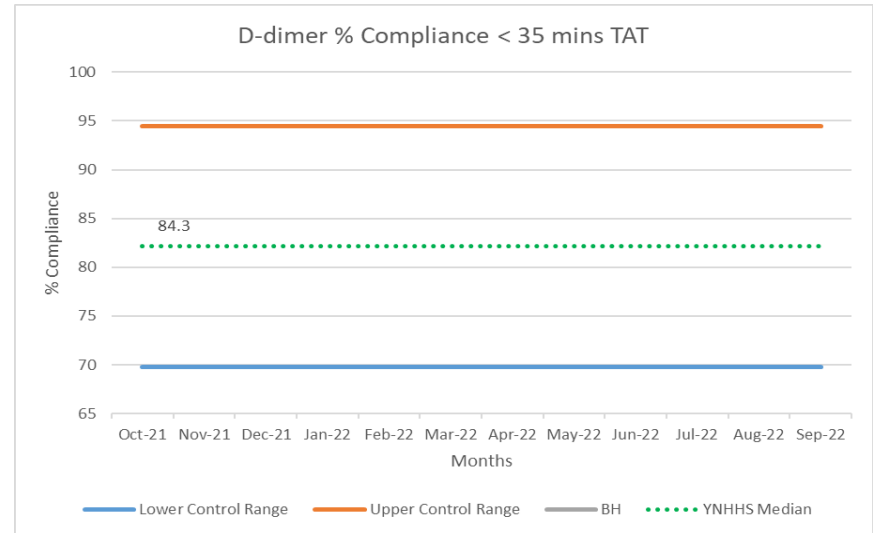
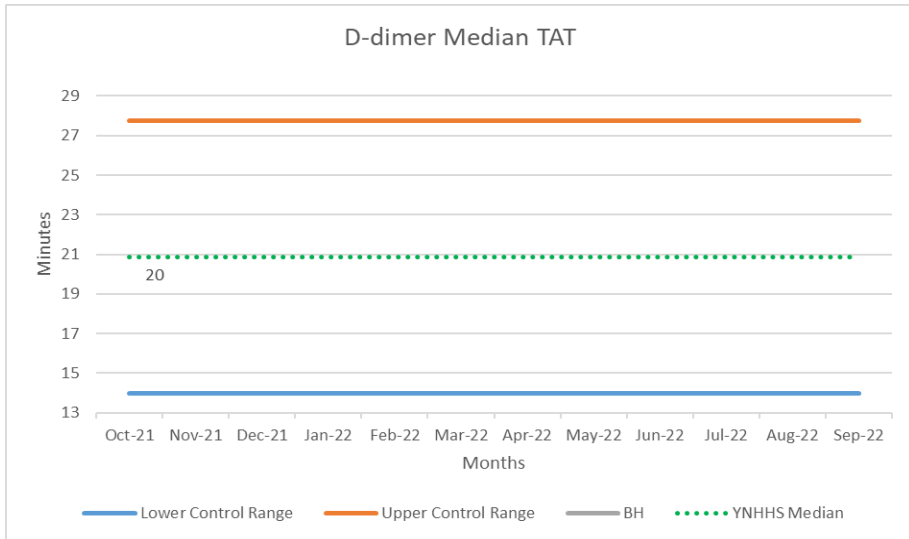
# Result Correction – Chemistry & Immunology

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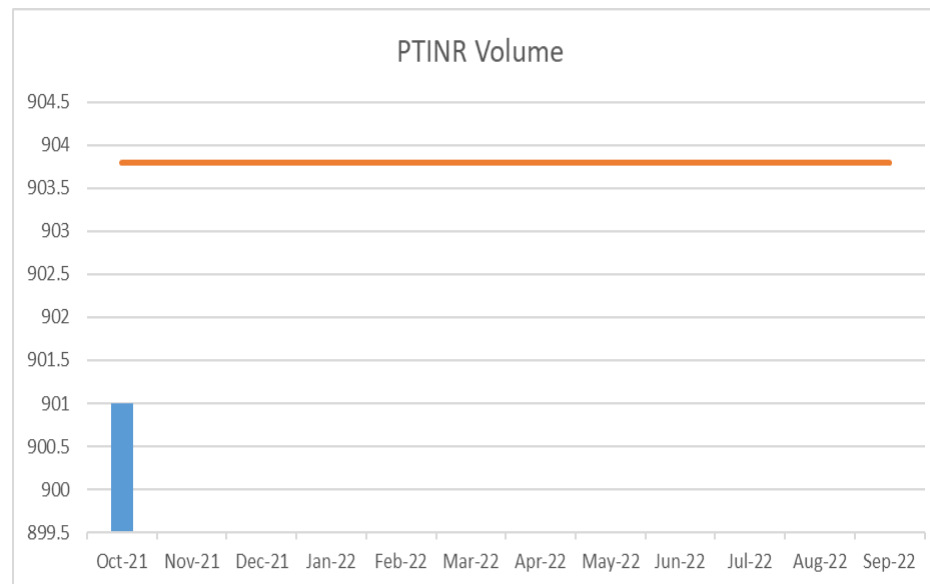
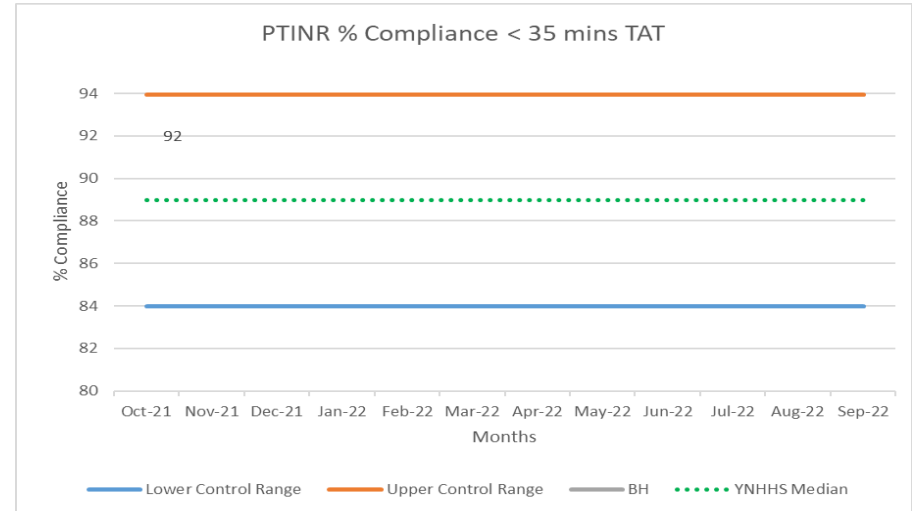
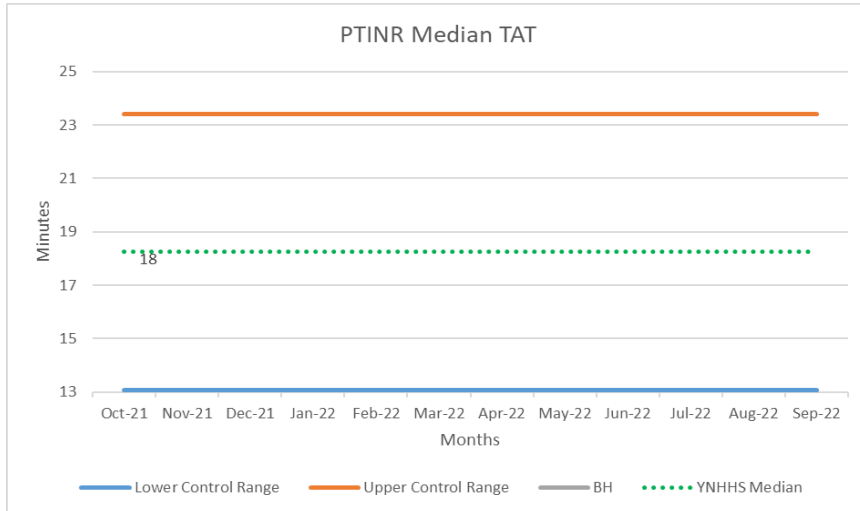
# Bridgeport Campus – Complete Blood Count (CBC) ED TAT



# Bridgeport Campus – D-dimer ED TAT



# Bridgeport Campus – PTINR ED TAT



# Aspect of Care

Aspect of Care	Threshold Expected / Target	Sample Size	Data Source	Threshold Achieved	Prior Month's Data	Remedial Action Taken	Responsible Party	Outcome
Comparison of body fluid results with cytology	100% compliance	Total# of fluids =140 # with cyto ordered =64	EPIC	100	100%		K. Castillo	

Aspect of Care	Threshold Expected / Target	Sample Size	Data Source	Threshold Achieved	Prior Month's Data	Remedial Action Taken	Responsible Party	Outcome
Critical values called to pedi within 15 min	100% compliance	0	EPIC	100	100%		K. Castillo	

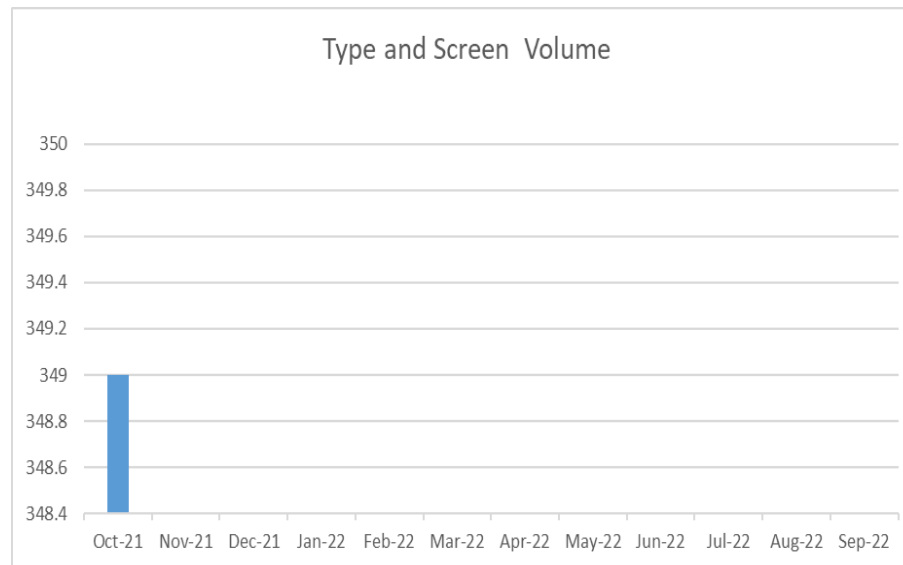
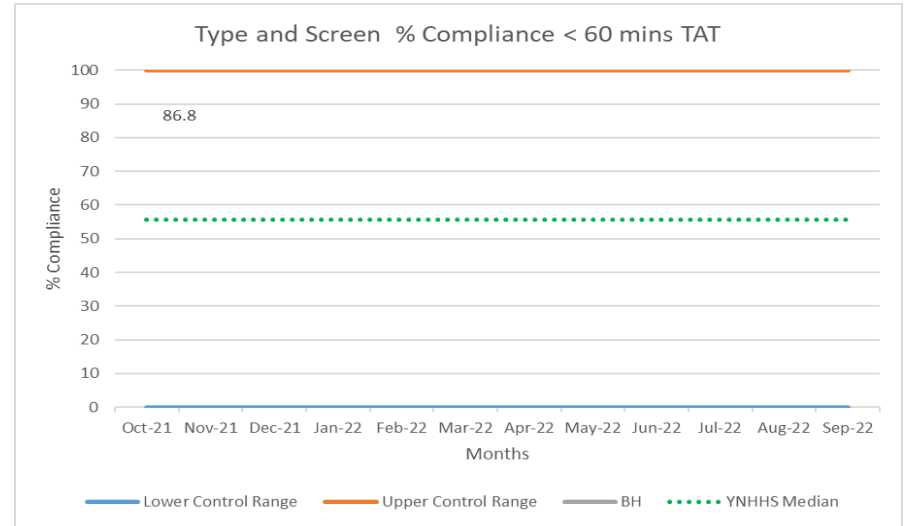
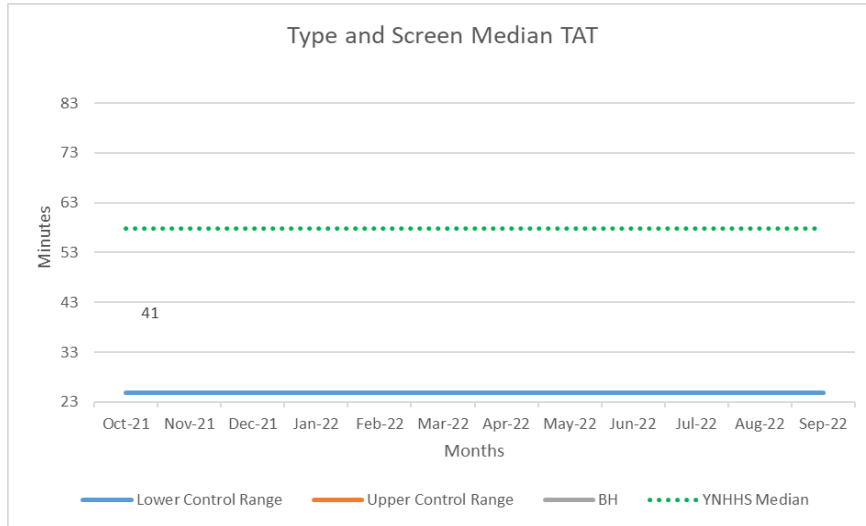
Aspect of Care	Threshold Expected / Target	Sample Size	Data Source	Threshold Achieved	Prior Month's Data	Remedial Action Taken	Responsible Party	Outcome
Manually entered results match worksheets	100% compliance	30	EPIC	100%	New measure		K. Castillo	

Aspect of Care	Threshold Expected / Target	Sample Size	Data Source	Threshold Achieved	Prior Month's Data	Remedial Action Taken	Responsible Party	Outcome
Corrected results are phoned to care giver	100% Compliance	5	EPIC	60%	New measure	Counselled Techs	K. Castillo	Continue to monitor

Aspect of Care	Threshold Expected / Target	Sample Size	Data Source	Threshold Achieved	Prior Month's Data	Remedial Action Taken	Responsible Party	Outcome
Critical Values are called to care giver and documented properly	100% compliance	10	EPIC	100	New Measure		K. Castillo	

Corrected reports: Urinalysis 4 all instrument malfunction-color change CBC- 1 specimen contaminated	
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# Bridgeport Campus – Type and Screen ED TAT

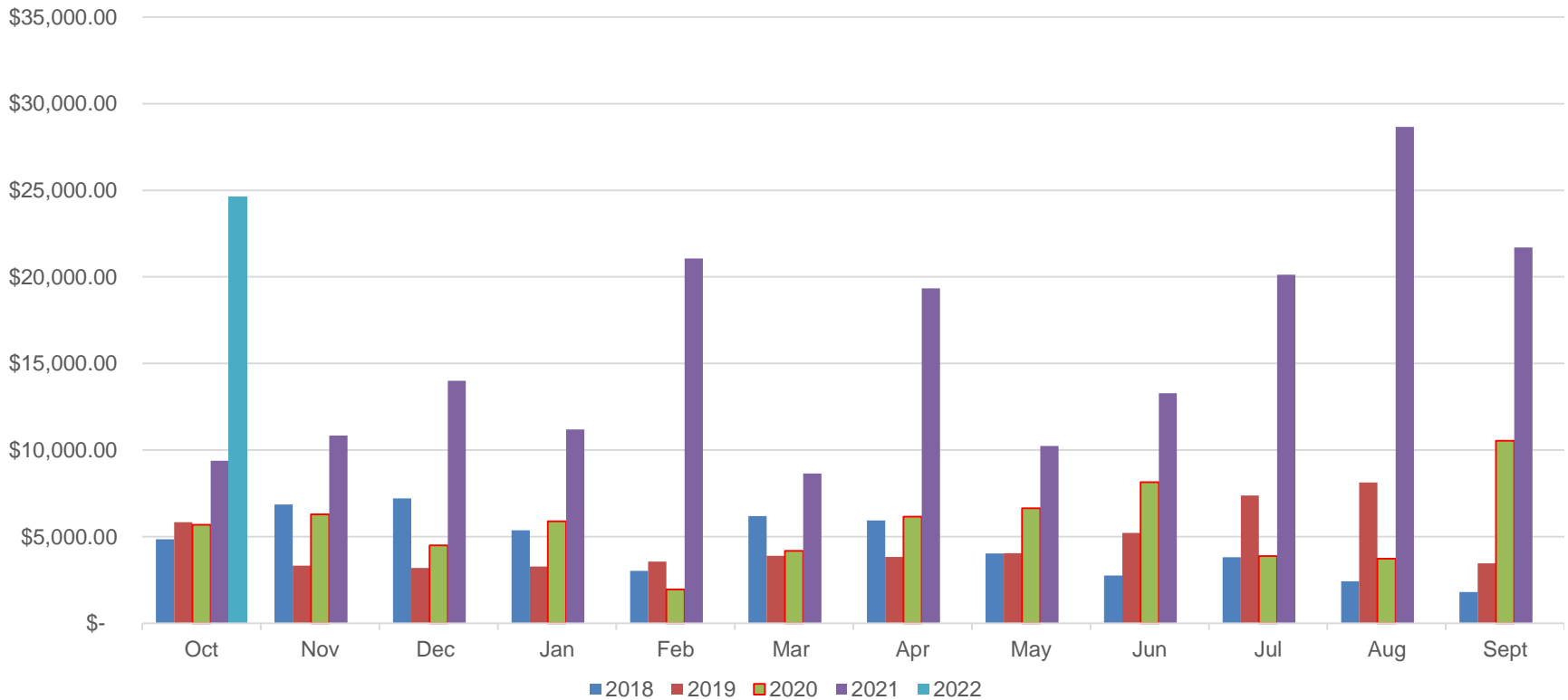






# Blood Wastage (updated 11/22/2021)

Bridgeport Campus Blood Wastage FY18, FY19, FY20, FY21

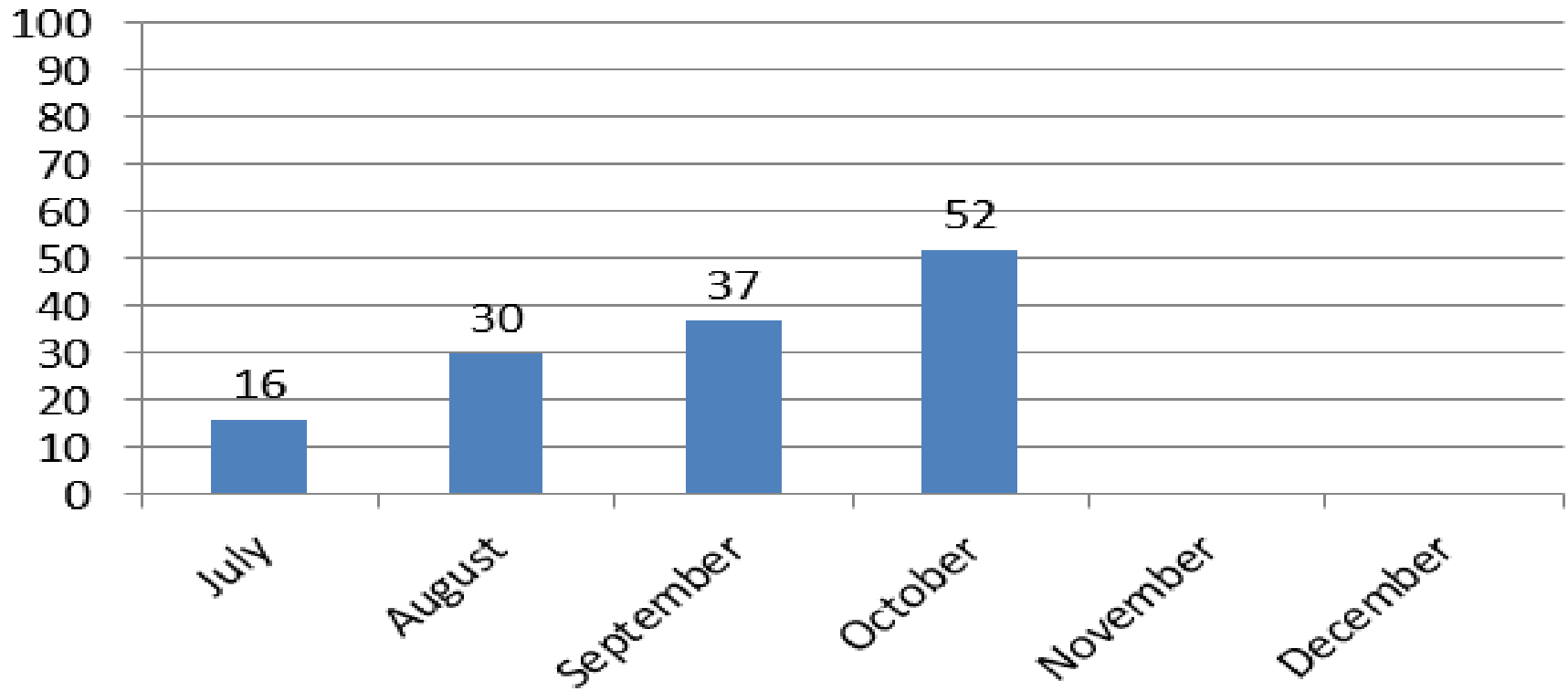






# Bridgeport Hospital Laboratory CAP Competency Completions July 2021 – December 2021

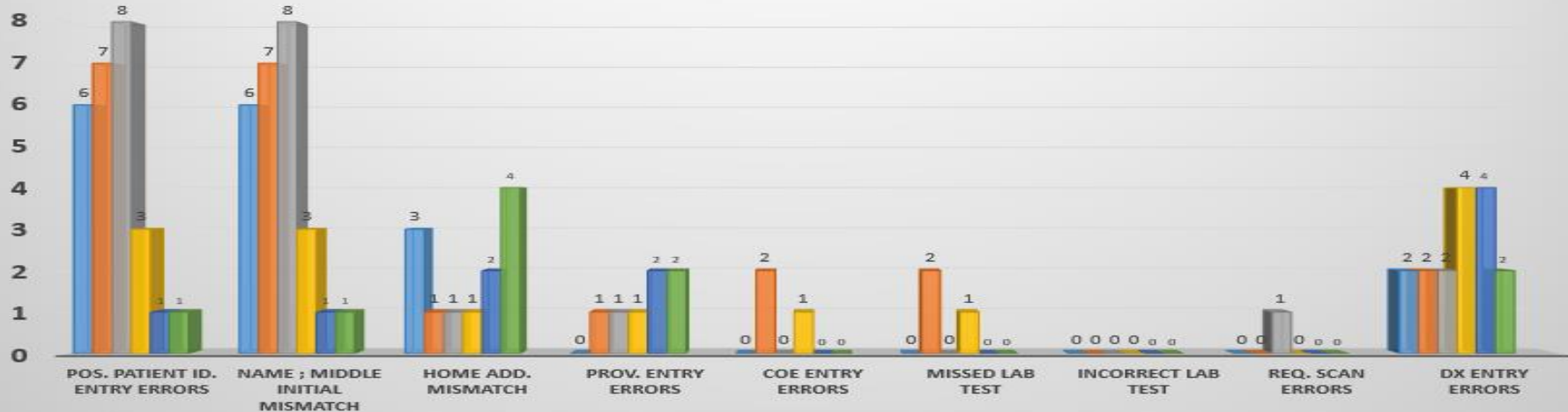
Goal 100%



Completed						
Completed/ Total	35/219	74/244	93/253	132/255		
% Completed	16%	30%	37%	52%		

MONTH	Pos. Patient ID. Entry Errors	Name ; Middle Initial Mismatch	Home Add. Mismatch	Prov. Entry Errors	COE Entry Errors	Missed Lab Test	Incorrect Lab Test	Req. Scan Errors	Dx Entry Errors
MAY	6	6	3	0	0	0	0	0	2
JUNE	7	7	1	1	2	2	0	0	2
JULY	8	8	1	1	0	0	0	1	2
AUGUST	3	3	1	1	1	1	0	0	4
SEPTEMBER	1	1	2	2	0	0	0	0	4
OCTOBER	1	1	4	2	0	0	0	0	2
NOVEMBER									
DECEMBER									

## Outpatient Test Requisition Monitoring Check Milford Draw Station (40 Commerce Park, MFD, CT) 2021



	Pos. Patient ID. Entry Errors	Name ; Middle Initial Mismatch	Home Add. Mismatch	Prov. Entry Errors	COE Entry Errors	Missed Lab Test	Incorrect Lab Test	Req. Scan Errors	Dx Entry Errors
MAY	6	6	3	0	0	0	0	0	2
JUNE	7	7	1	1	2	2	0	0	2
JULY	8	8	1	1	0	0	0	1	2
AUGUST	3	3	1	1	1	1	0	0	4
SEPTEMBER	1	1	2	2	0	0	0	0	4
OCTOBER	1	1	4	2	0	0	0	0	2
NOVEMBER									
DECEMBER									

Pos. Patient ID for Pat. :  
a. Full Name including Mid. Init.  
b. Date of Birth (DOB)  
c. Medical Record Nbr (MRN)

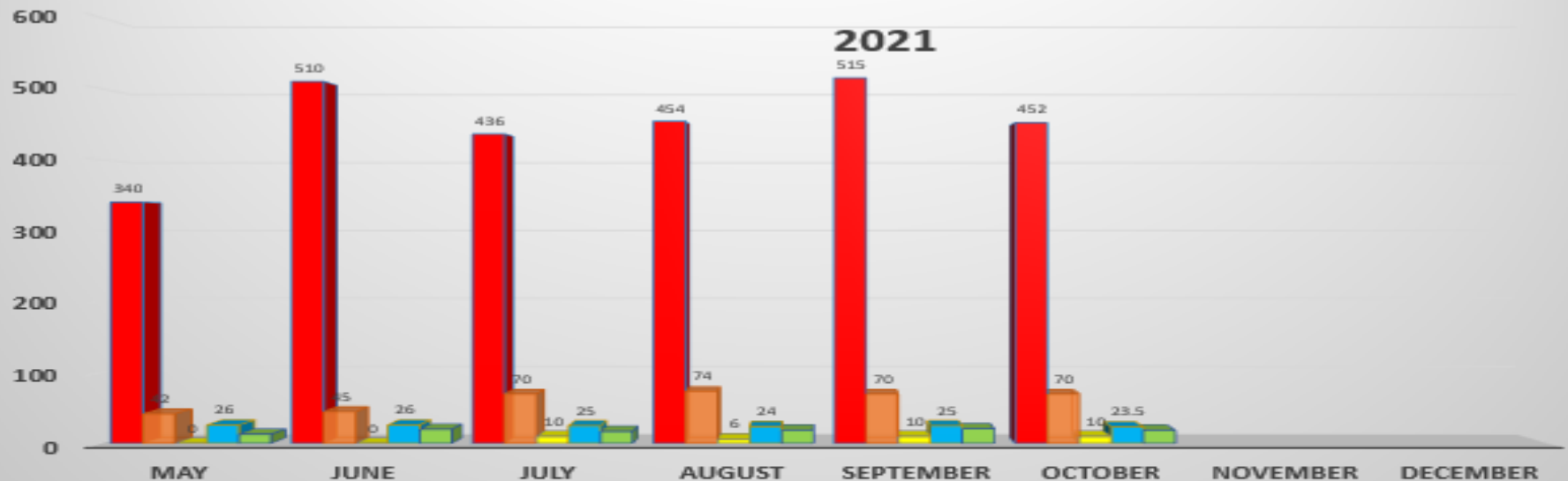
Prov. Error: Missing Provider (i.e. "CC"etc.)  
COE Errors: 2 Categories; Incorrect test/missed test  
Req. Scan Error: Transcribed Orders Req NOT saved.  
Dx Errors: One or more Dx Not listed for visit.

Patient Volume and Requisition Review:

2021

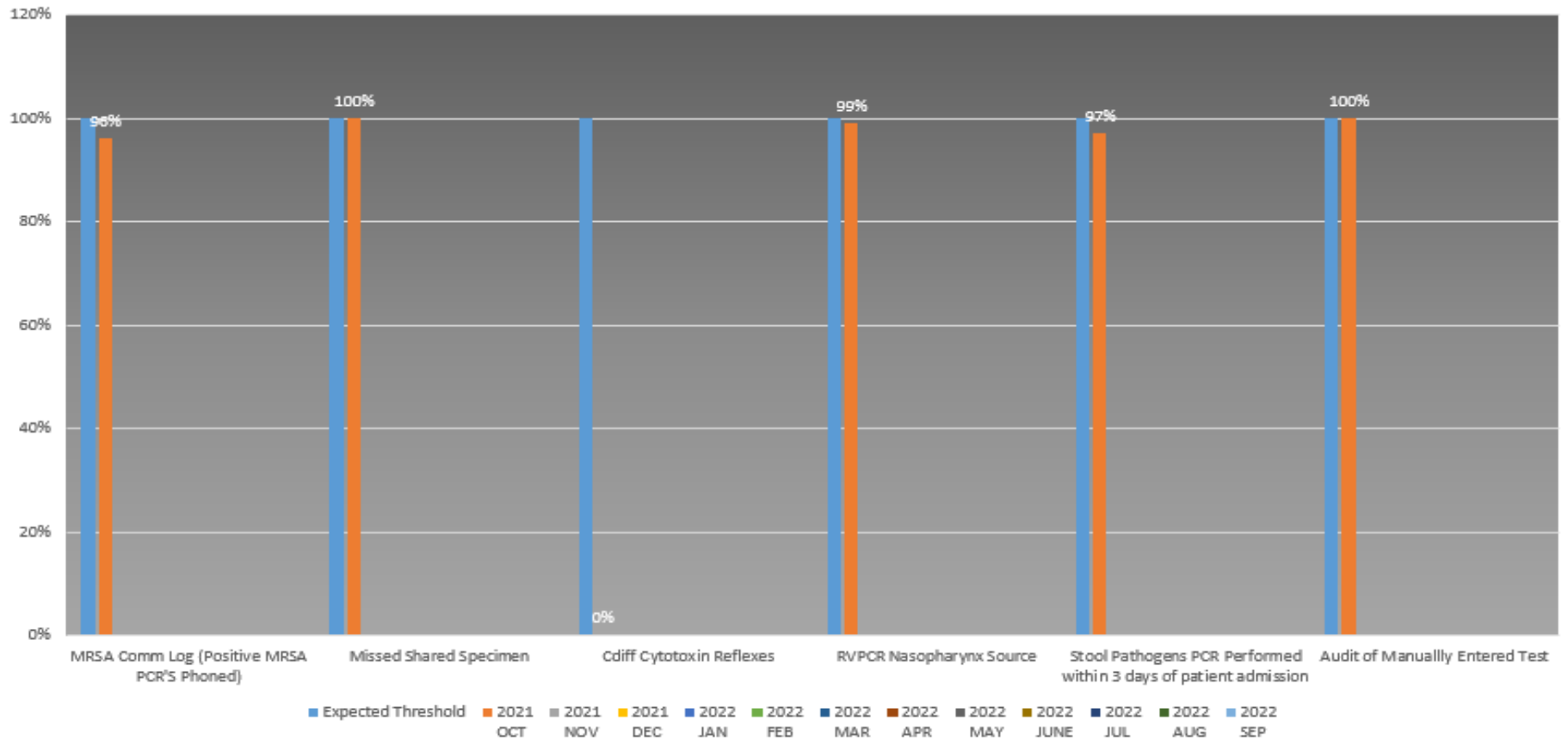
MONTH	Tot. Patient Volume	# of Req. Reviewed	EPIC Prov. Entry	# of Business Days/month	Est. Ave. Patients per day
MAY	340	42	xxx	26	13
JUNE	510	45	xxx	26	20
JULY	436	70	10	25	17
AUGUST	454	74	6	24	19
SEPTEMBER	515	70	10	25	21
OCTOBER	452	70	10	23.5	19
NOVEMBER					
DECEMBER					

Milford Draw Station (40 Commerce Prk., MFD., CT.)  
Patient Volume and Requisition QC Check



	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Tot. Patient Volume	340	510	436	454	515	452		
# of Req. Reviewed	42	45	70	74	70	70		
EPIC Prov. Entry	0	0	10	6	10	10		
# of Business Days/month	26	26	25	24	25	23.5		
Est. Ave. Patients per day	13	20	17	19	21	19		

## Microbiology Quality Assurance FY 2021

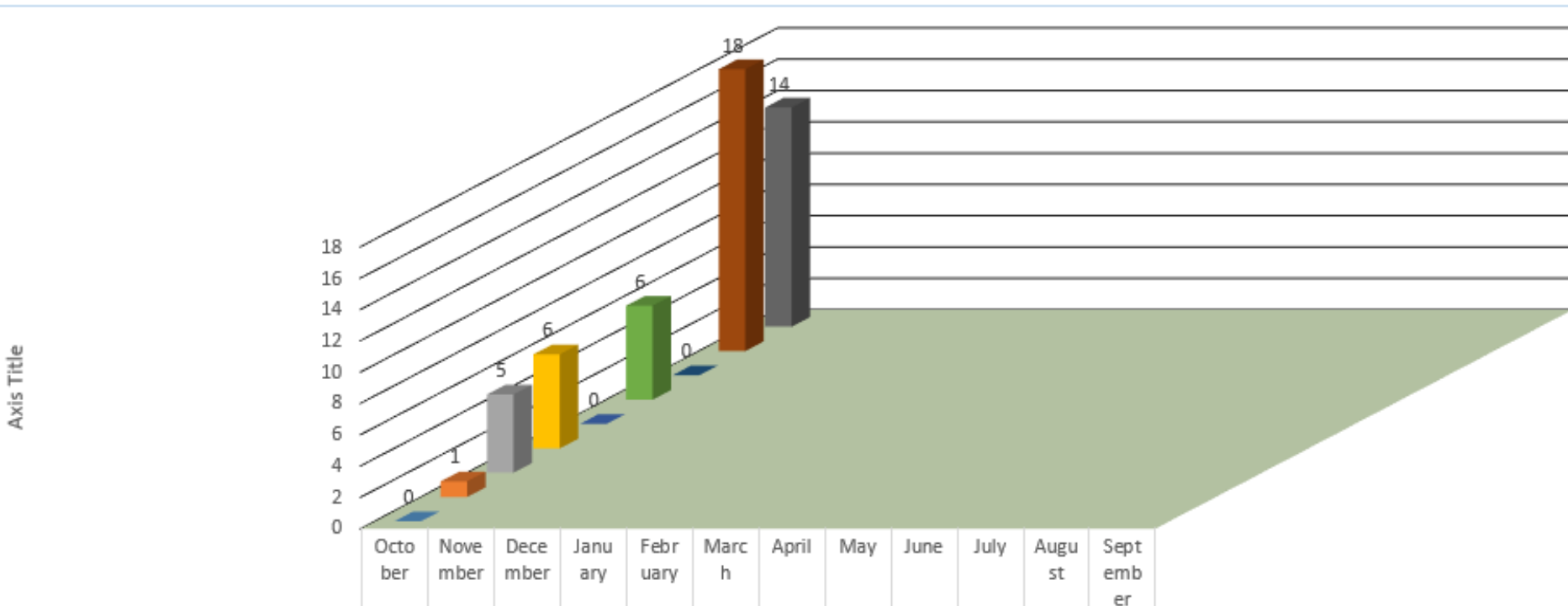


Total V	October	November	December	January	February	March	April	May	June	July	AUG	Sept
<b>MRSA</b>	236											
<b>MRSA +</b>	27											
<b>Cdiff</b>	142											
<b>Cdiff +</b>	20											
<b>RVP</b>	211											
<b>Stool</b>	141											
<b>Stool Admitted</b>	68											
<b>Errors</b>	6											

October Errors: Manual transcription of instrument results (RSV tests being run on Resp Panel, H pylori Breathtek), Repeat testing of suspicious results (Positive flus on Resp Panel not being confirmed by Cepheid)

# Draw Station Errors

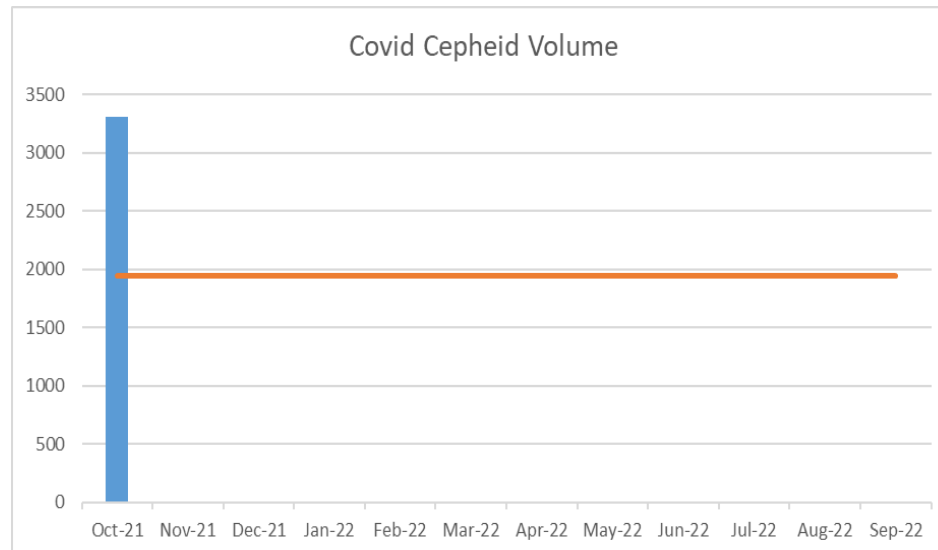
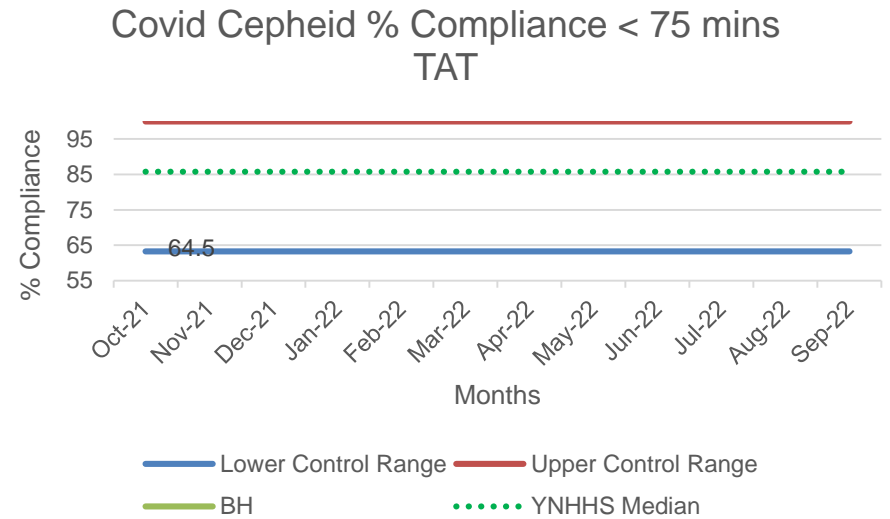
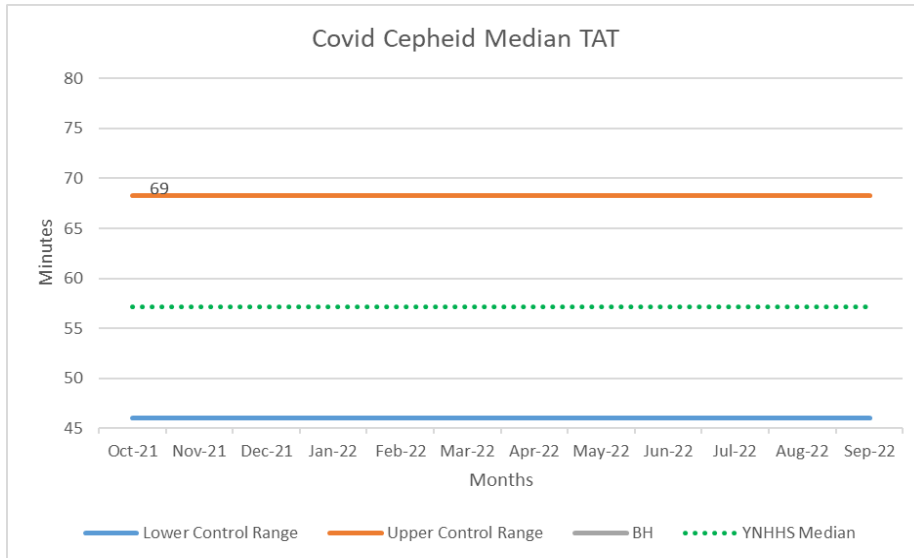
FY 2022 Draw Station Errors



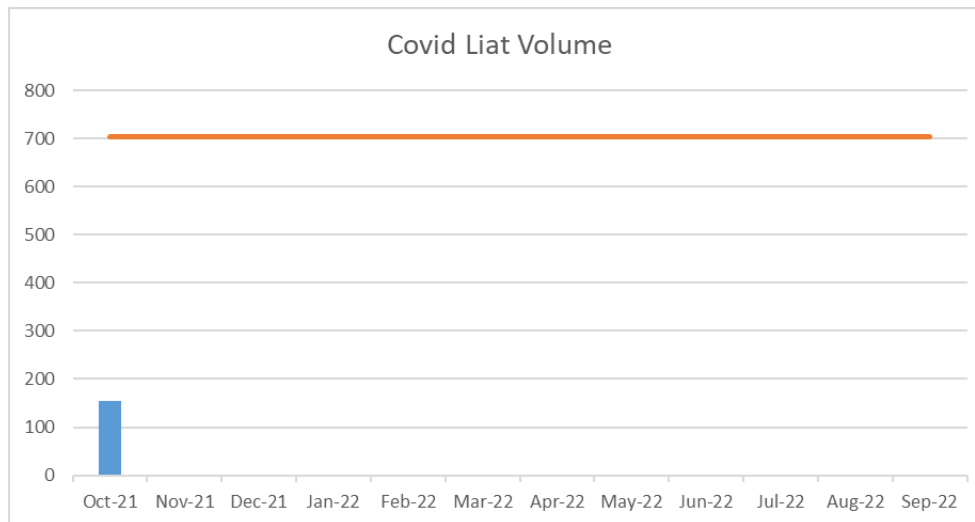
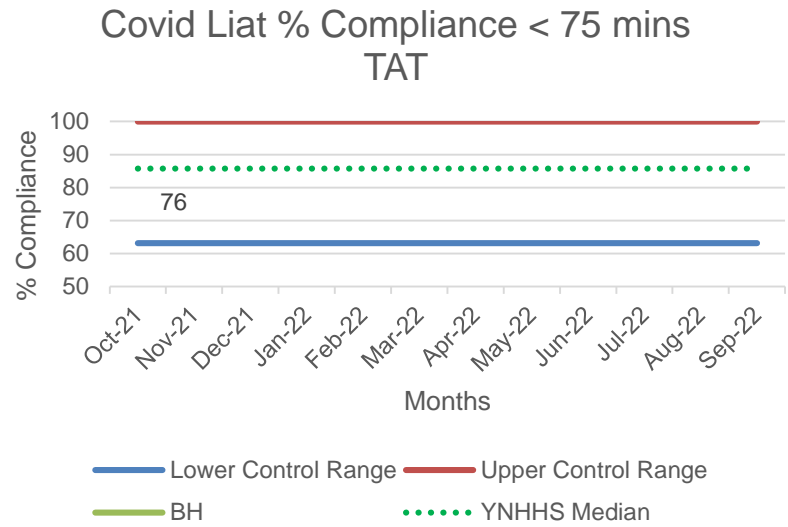
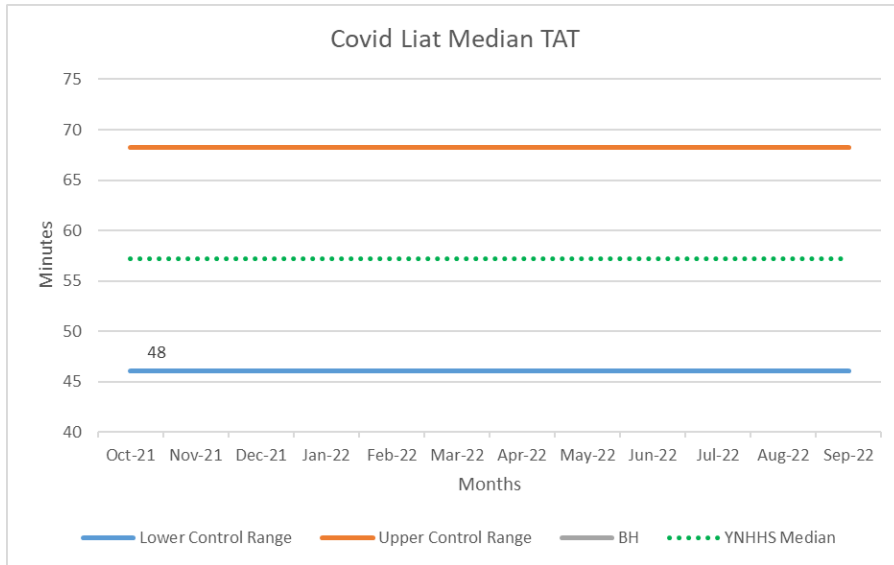
No Specimen Received	0
Missing Test	1
Incorrect Order	5
Wrong Tube/Container	6
Unlabeled/Mislabeled Specimen	0
Unacceptable Requisition/Specimen	6
Sample Not On Packing List	0
TOTAL	18
Specimen put in for Redraw	14



# Bridgeport Campus – COVID-19 Cepheid

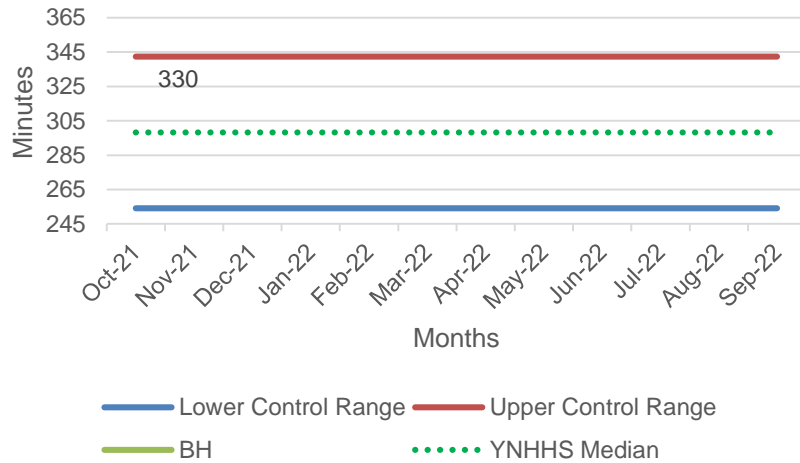


# Bridgeport Campus – COVID Liat

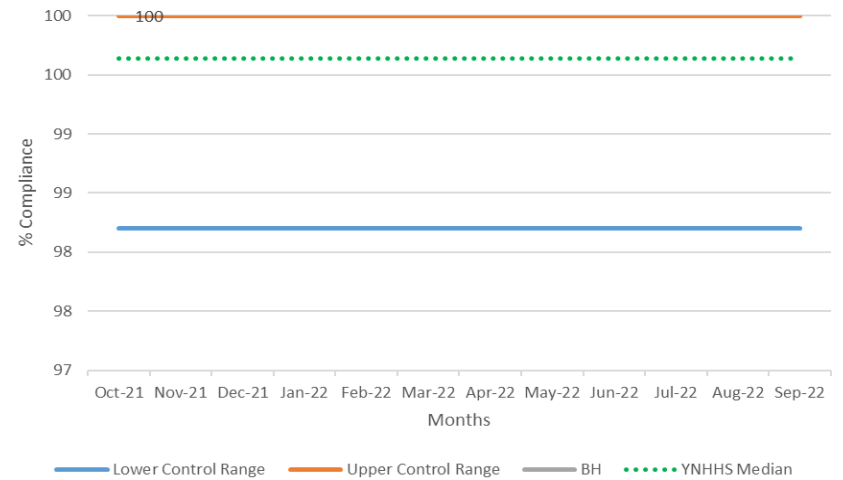


# Bridgeport Campus – COVID-19 Panther

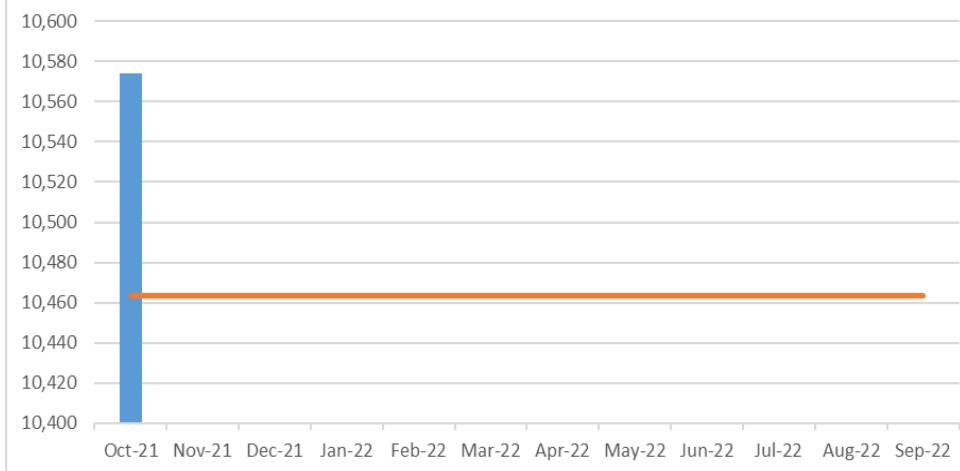
## Covid Panther Median TAT



## Covid Panther % Compliance < 2880 mins TAT



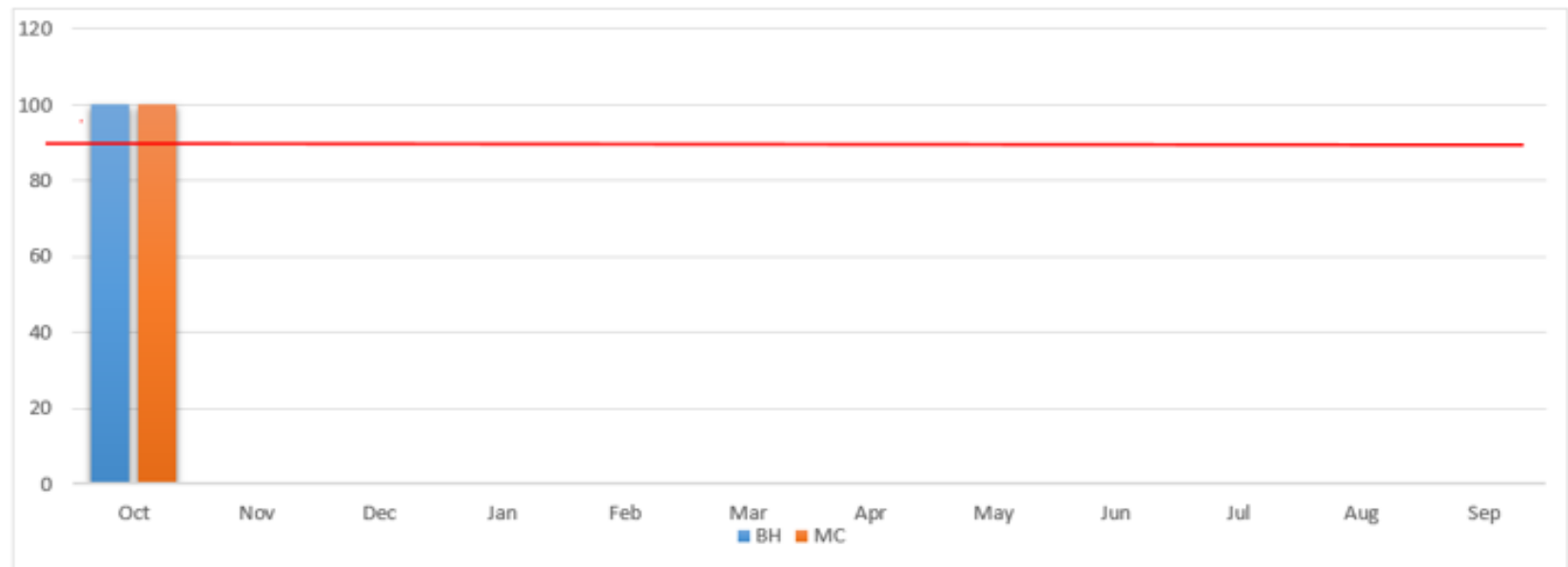
## Covid Panther Volume



# Lab General - Bridgeport

Quality Metric	Target	Sample size	Current performance	Previous month	Patient Impact	Corrective action and follow-up	Responsible
<b>CAP PT Turnaround within 30 days</b>	90%	BC 25/25 surveys	100%	100%	None	Benchmark met 90-day workout put into effect Dec 2020. Goal of 10% monthly improvement to meet lowered benchmark. Target to be raised to 90% in FY22	Lab management and administration
		MC 3/3 surveys	100%	100%			

**CAP PT Evaluation Completion TAT within 30 days  
Benchmark 90%**



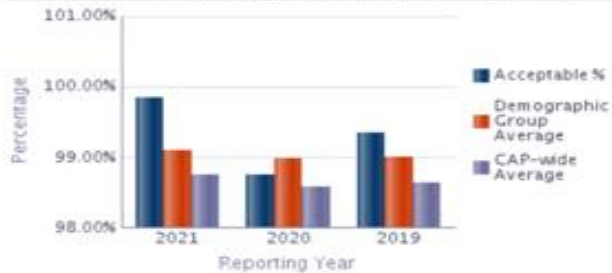
# Lab General - Bridgeport

<b>Proficiency Testing Performance BC</b>	98%	362/362 analytes	100%	100%	None	None required Reminder-when doing corrective action responses, make sure procedures reflect the corrective actions stated	Laura
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## Proficiency Testing Performance Overview ?

Select View: Graph ▼

### Acceptable Proficiency Testing by Year and Group



<b>22</b> Mailings with New Evaluations	<b>0</b> Mailings with Revised Evaluations	<b>0</b> Analytes with Unsatisfactory PT	<b>0</b> Analytes with Unsuccessful PT	<b>0</b> Analytes with Repeat Unsuccessful PT
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Reporting Year	Acceptable %	Demographic Group Average <span>?</span>	CAP-wide Average
2021	99.84%	99.10%	98.76%
2020	98.76%	98.99%	98.58%
2019	99.35%	99.00%	98.63%

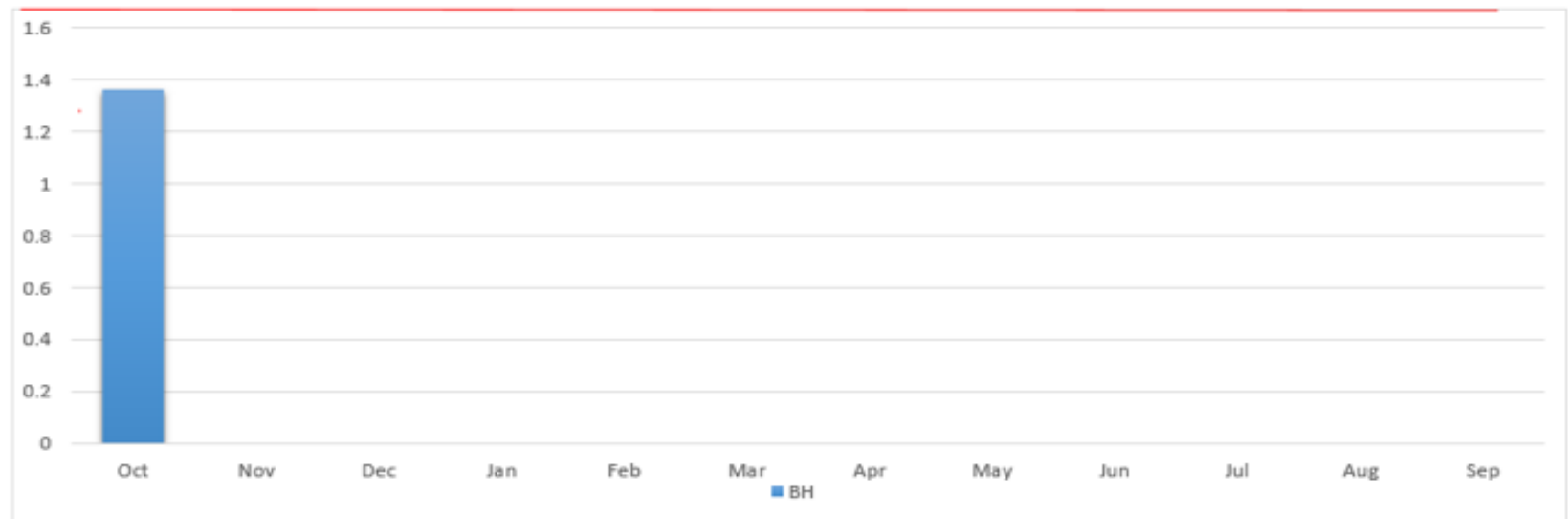
Period Name	Percent Deficient	Demographic Group Average <span>?</span>	CAP-wide Average
Current Cycle	0.11%	0.78%	0.78%
Previous Cycle	0.65%	0.86%	0.88%
Second Previous Cycle	0.42%	0.85%	0.85%

## Accreditation Performance Overview

# Lab General - Bridgeport

Quality Metric	Target	Sample size	Current performance	Previous month	Patient Impact	Corrective action and follow-up	Responsible
<b>BC Lab Corrected/amended reports</b>	<2.7/10,000 tests	228,319 tests	1.36 Per 10,000 results (0.14%)	1.23 (0.12%)	Corrected reports can lead to adverse patient outcomes	None needed benchmark met  All corrected reports are evaluated by <u>mgt</u> and employee <u>counseling</u> documented if needed	Laboratory administration

**Corrected Reports per 10,000 test results**  
Benchmark <2.7

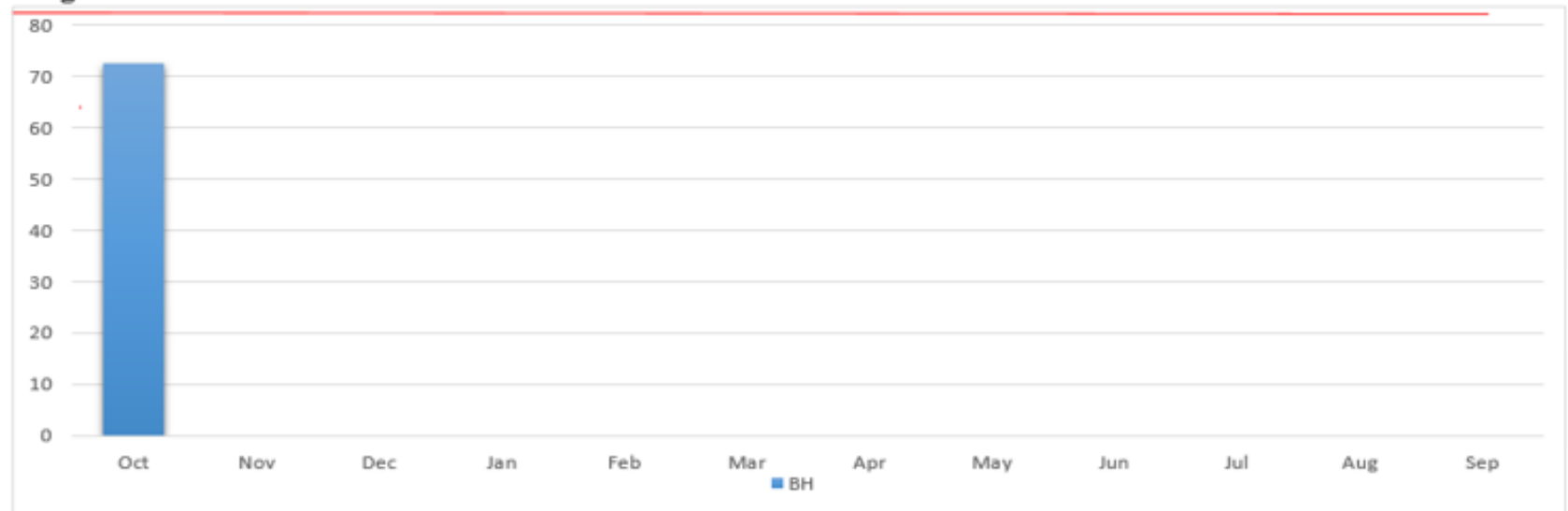


# Lab General - Bridgeport

Quality Metric	Target	Sample size	Current performance	Previous month	Patient Impact	Corrective action and follow-up
Quest TAT Top 10 tests by volume	85% On time	395 tests	72.4%	89.6%*	Can cause delays in patient treatment/therapy	Target was lowered to 85% in FY21 Continue increasing test sent to YH and bringing some <u>sendouts inhouse</u> .

## Quest TAT of results

Target 85% on-time

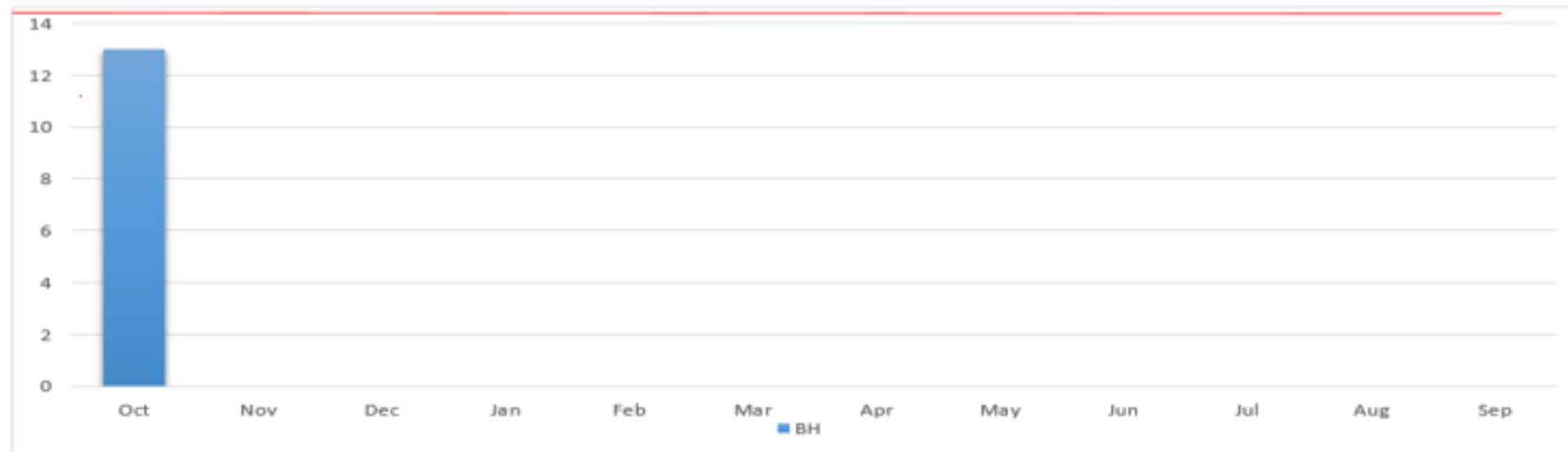


\*Spoke with Matt (Quest Rep) about the improved Sep TAT, he explained that there was workflow changes that were put in place to streamline work to improve TAT. He also said that staffing was better at the main labs which also attributed to improved TAT. Unfortunately October TAT returned back to the below target levels consistently seen in FY21

# Lab General - Bridgeport

Quality Metric	Target	Sample size	Current performance	Previous month	Patient Impact	Corrective action and follow-up	Responsible Staff
Nonconforming events BC	0	228,319 tests	13 events	15	All 13 events resulted in patients being redrawn which could lead to delays in treatment	All draw station errors. Outreach and lab management continue to work on resolving events thru staff education and retraining when necessary	Lab administration and management

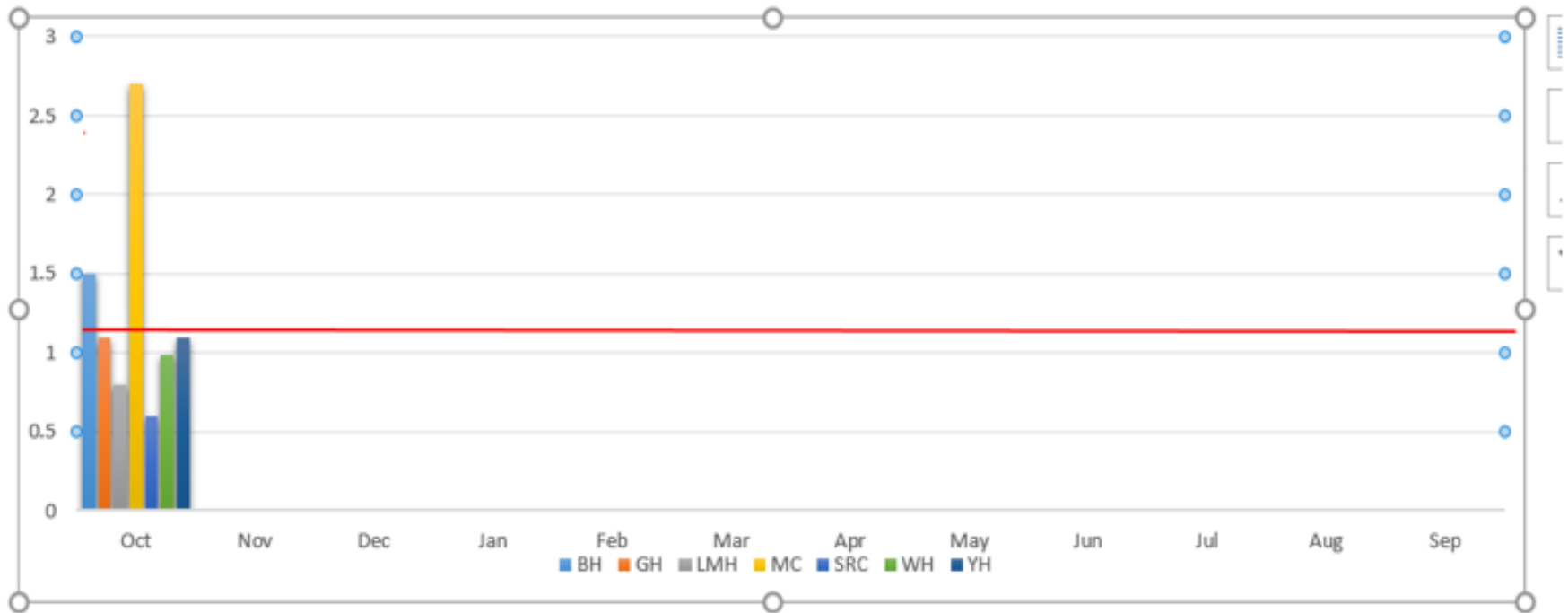
**Nonconforming Events  
Benchmark 0**





# Lab General – Bridgeport (Adjusted Specimen Rejection Analysis)

**Percent Redraws FY2021**  
**Benchmark < 3.5 %\* Specimens Rejected**



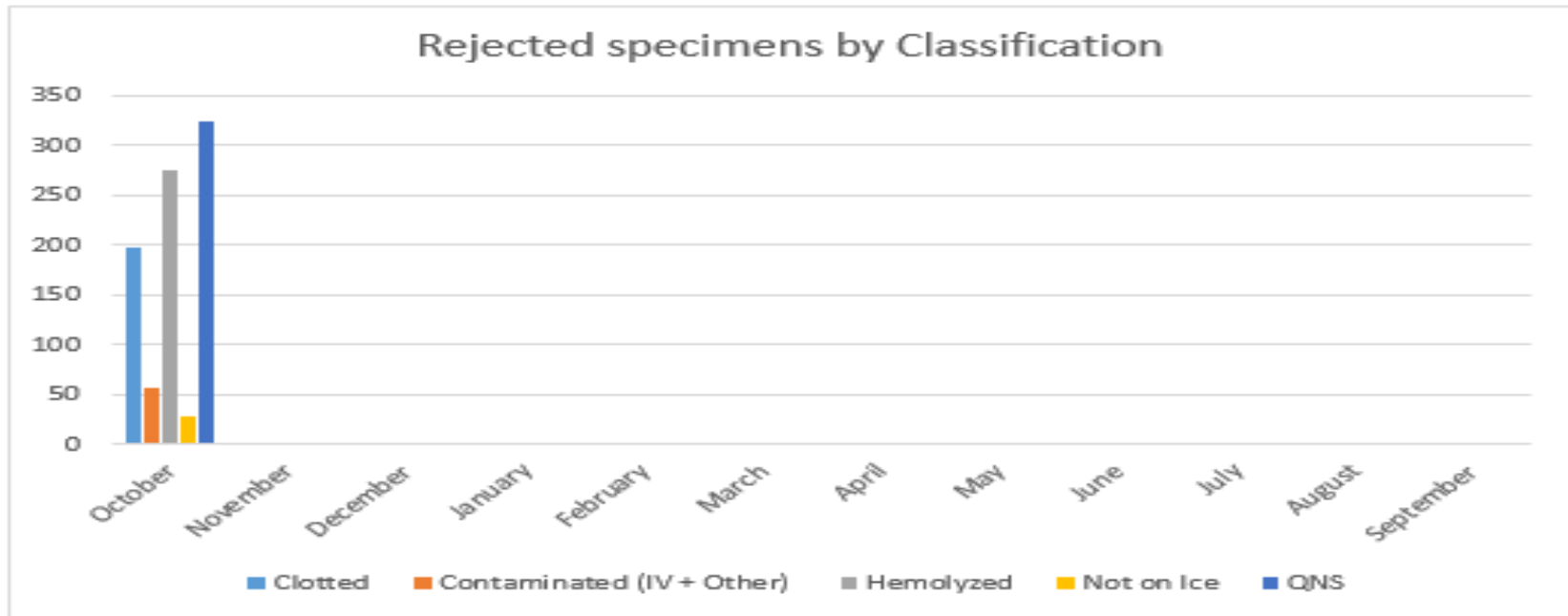
YNHHS Benchmark (1.1% Oct)

\*Rooper L. Carter, J., Hargrove, J., Hoffman, S & Riedel S. (2017). Targeting rejections: analysis of specimen acceptability and rejection. *Journal of Clinical Laboratory Analysis* .volume 31, issue 3

	BH	GH	LMH	MC	SRC	WH	YH
Oct	1.5	1.1	0.8	2.7	0.60	1.0	1.1

# Laboratory General - Bridgeport

BC



	Clotted	Contaminated (	Hemolyzed	Not on Ice	QNS
October	198	56	276	28	325

## QNS Totals

Department/Unit	October	September
ED	77	108
NE9	12	25
Burn Unit	0	5
NW7	34	31
WT10	17	23

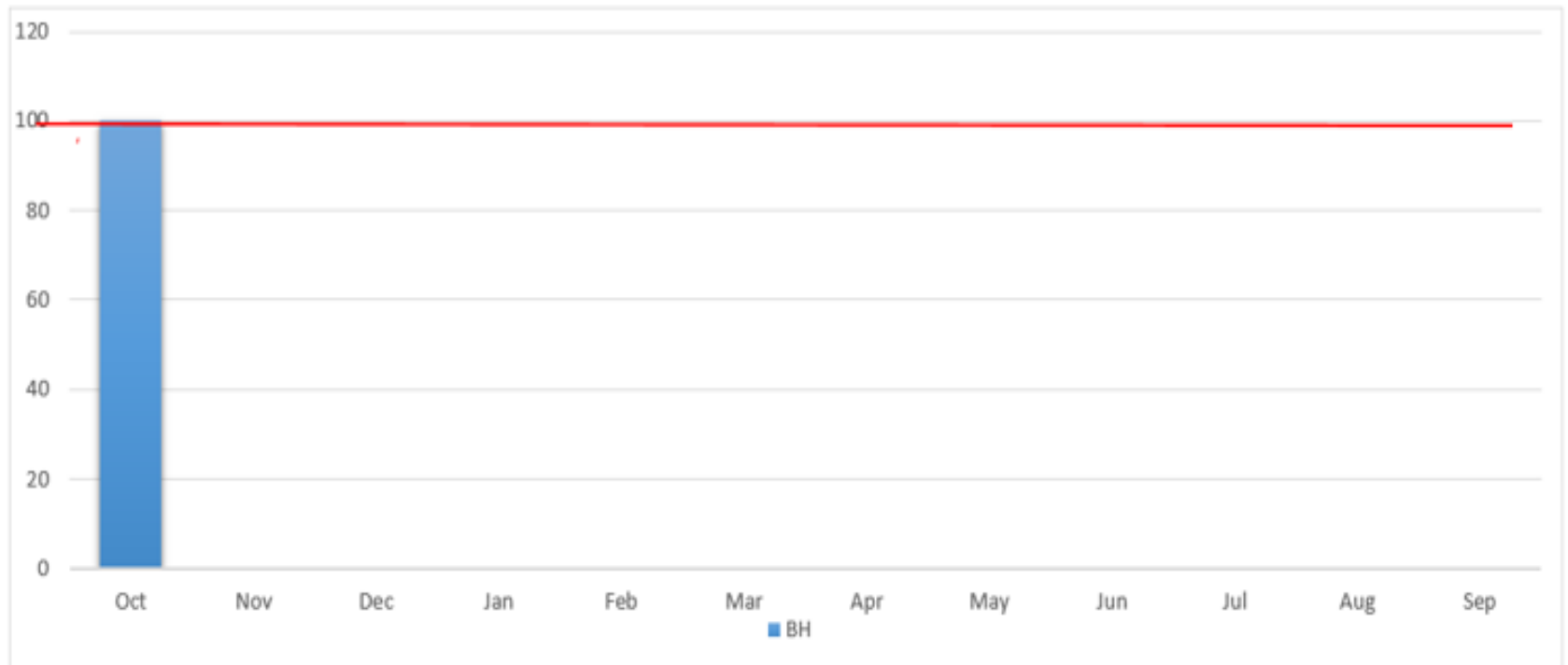
# Laboratory General - Bridgeport

## Events Calendar Task Completion

Target=100%

4/4 events completed

### Events Calendar Completed Benchmark 100%



# Sample not on ice by Delivery Network

YaleNewHavenHealth

## Beaker Lab Rejections Rejection Classification Totals



System Organizatio..	Rejection Classification	Test Cancellation Date		Grand Total
		2021 Q4	October	
BH	Collection Issue: Not on Ice		28	28
L&M	Collection Issue: Not on Ice		2	2
WH	Collection Issue: Not on Ice		3	3
YNHH	Collection Issue: Not on Ice		35	35
Grand Total			68	68

Select Timeframe  
Last Full Month ▼

Begin Date  
5/14/2019

End Date  
5/15/2019

Delivery Network  
(All) ▼

Campus  
(All) ▼

Collection Department  
(All) ▼

Rejection Classification  
Collection Issue: Not o... ▼

Specimen Type  
(All) ▼

Test Name  
(All) ▼

# Summary

Bridgeport Hospital														
2021 Sample Rejection - not on ice														
Floor	Baseline	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	YTD Average
ED	14	13	11	11	9	11	5	11	5	12	8			10
MICU	4		3	4	3	7	4	1	7	2	1			3.56
NW7	3		0	2	1	3	0	1	2	1	3			1.44
SICU	3.33		1	1	0	4	2	2	0	3	0			1.44
WT10	2.33		1	1	0	2	2	2	1	6	0			1.67
WT7	2.17		0	0	1	3	0	0	1	1	1			0.78
WT8	1.17		3	3	1	2	3	1	1	2	0			1.78
			19	22	15	32	16	18	17	27	13			

## Overall Tests:

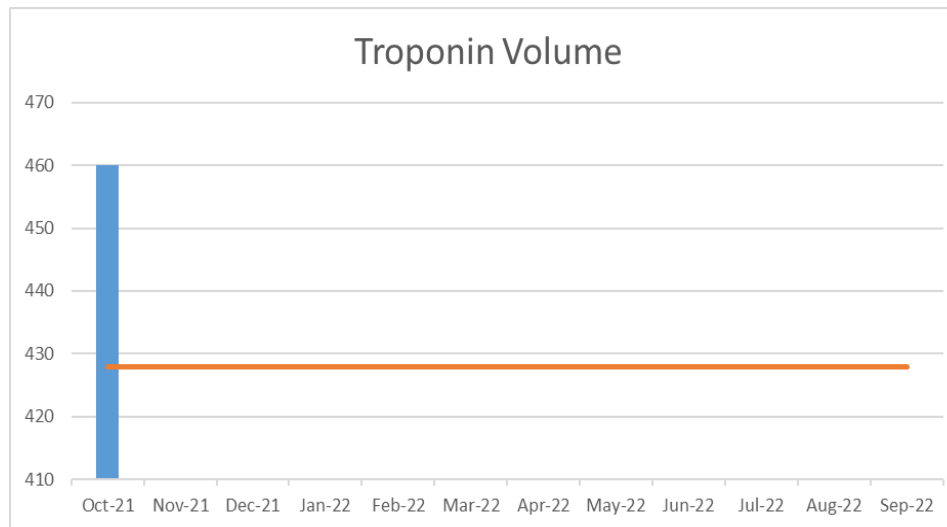
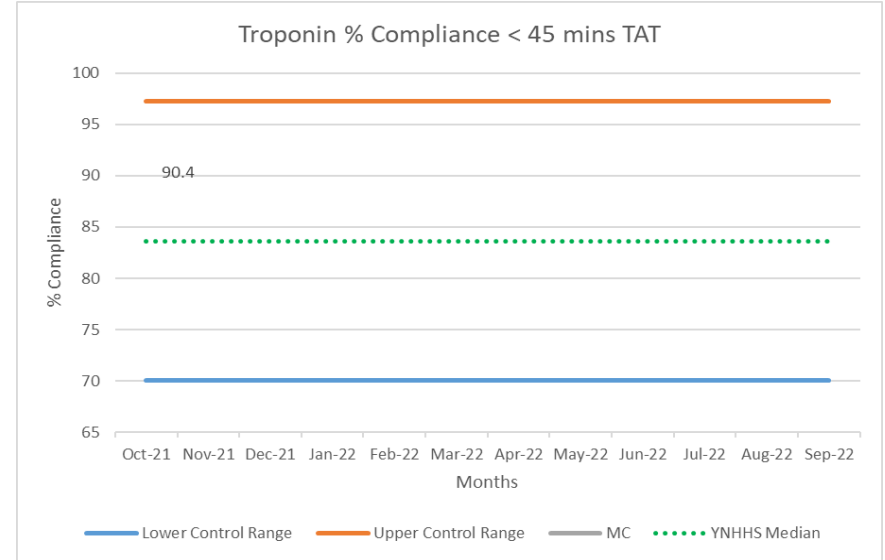
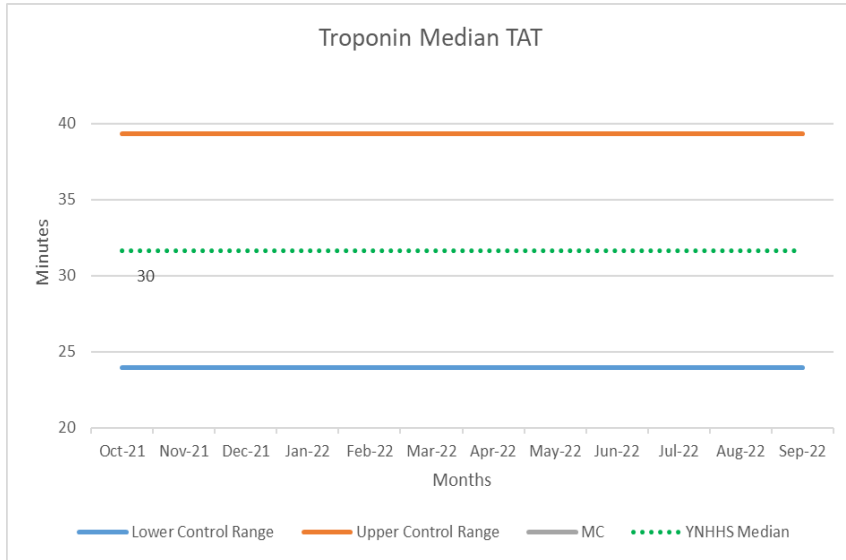
Row Labels	Count of Specimen ID
ACTH (YH BH)	1
AMMONIA	7
CALCIUM, IONIZED, WHOLE BLOOD	2
LACTIC ACID, PLASMA	5
METHYLMALONIC ACID (YH BH)	5
PTH, INTACT (BH)	8
(blank)	
<b>Grand Total</b>	<b>28</b>

*One big change: Effective Oct 4, 2021 – Lactic acid no longer needs to be transported on ice and is stable for 6 hours under ambient conditions.*

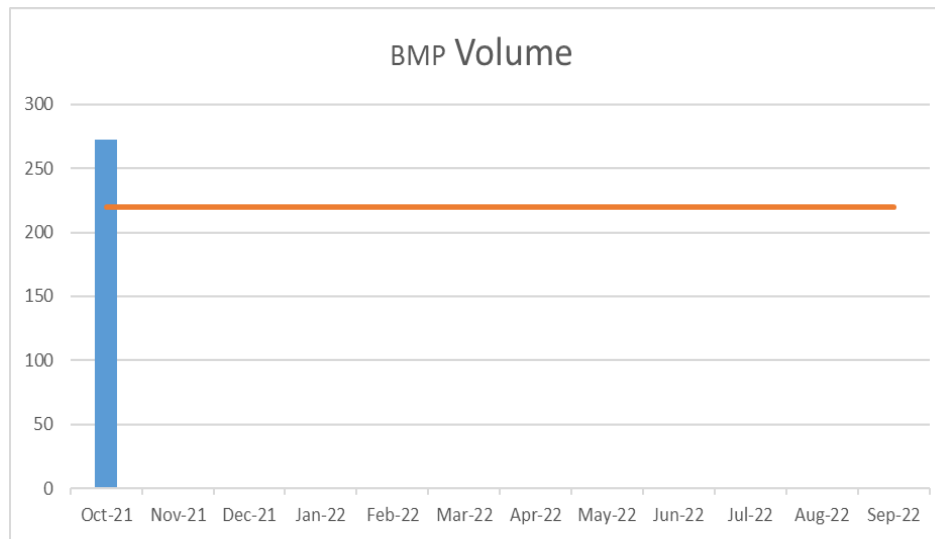
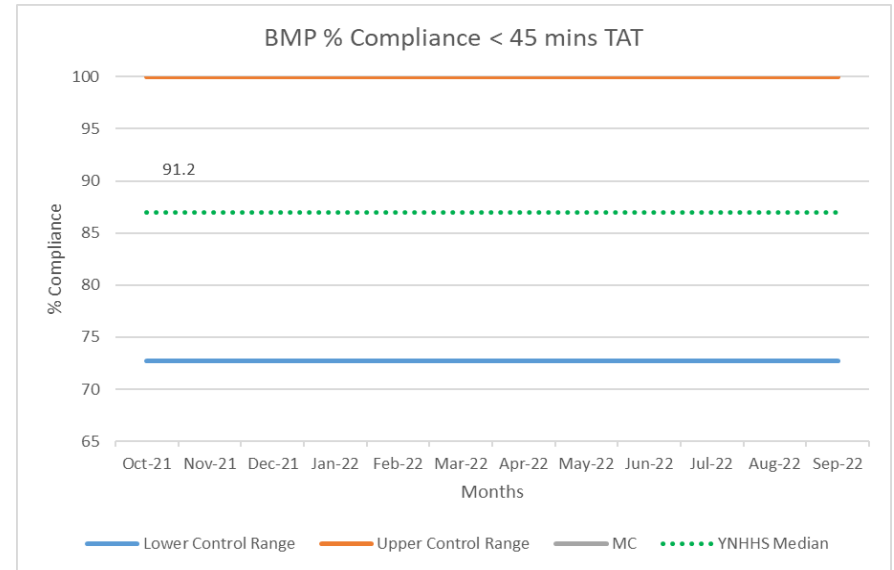
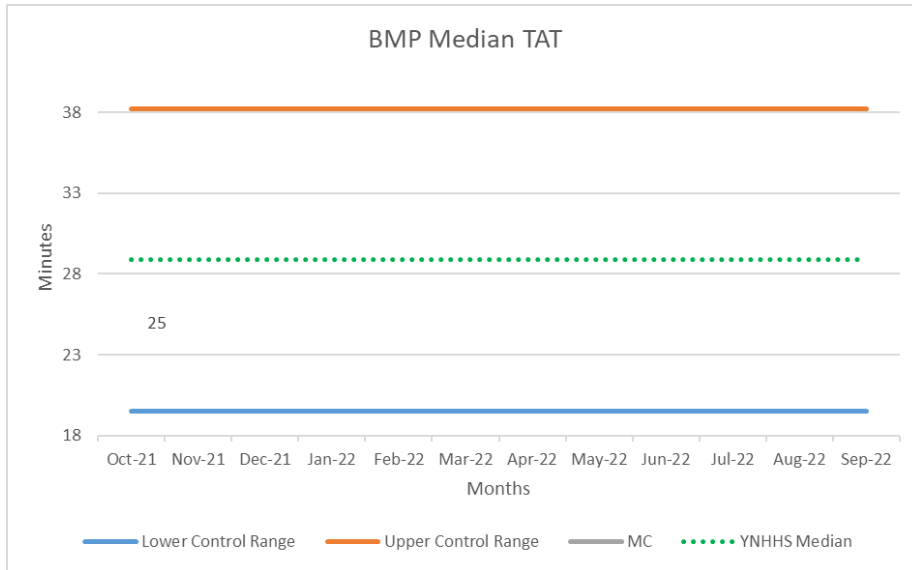
Expectation: 31% reduction based on September's data.

Observed: 48%

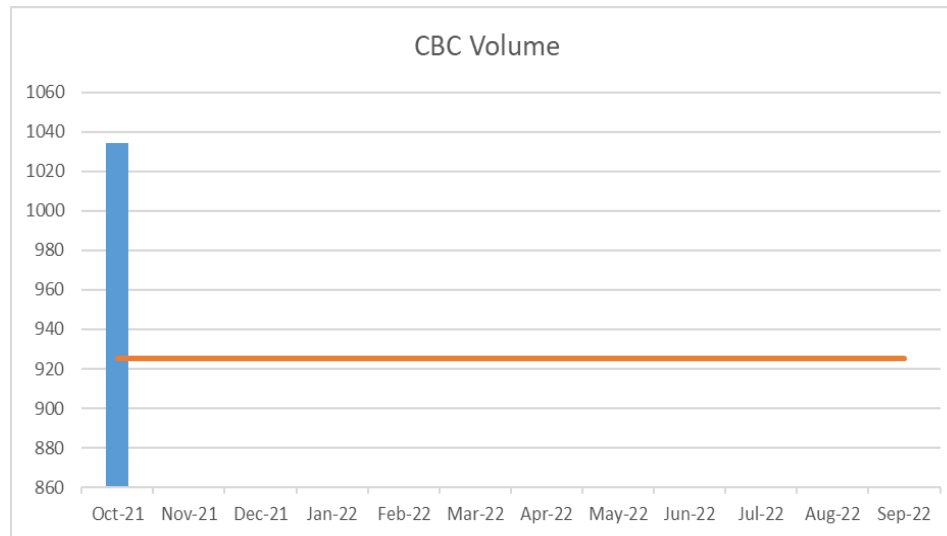
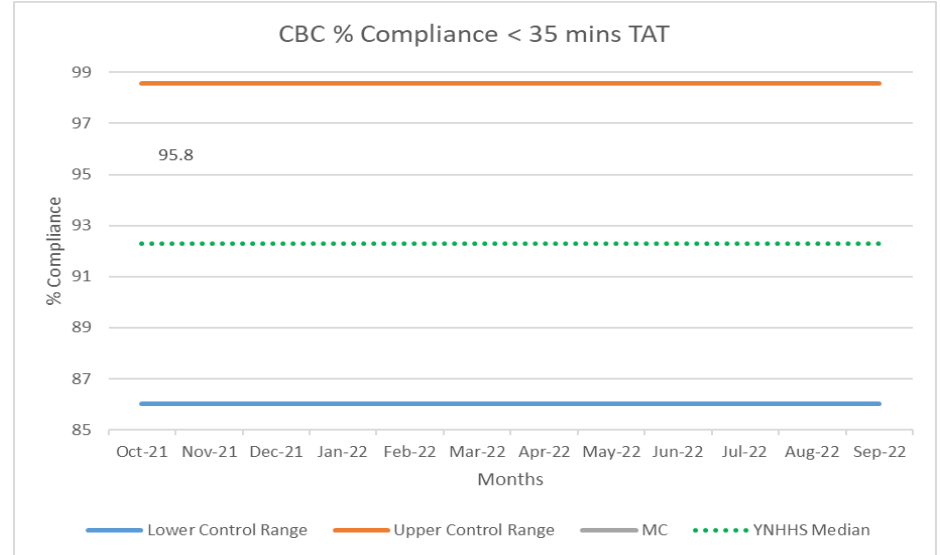
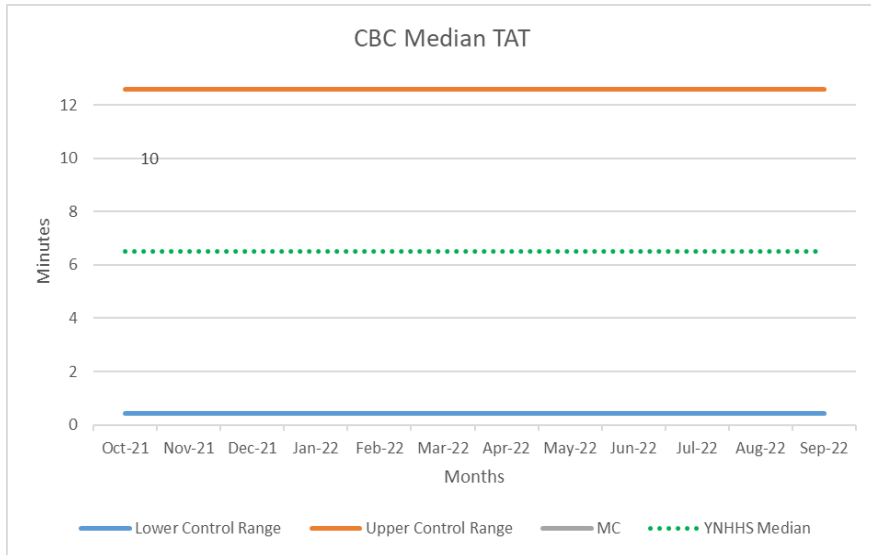
# Milford Campus – Troponin ED TAT



# Milford Campus – Basic Metabolic Panel (BMP) ED TAT

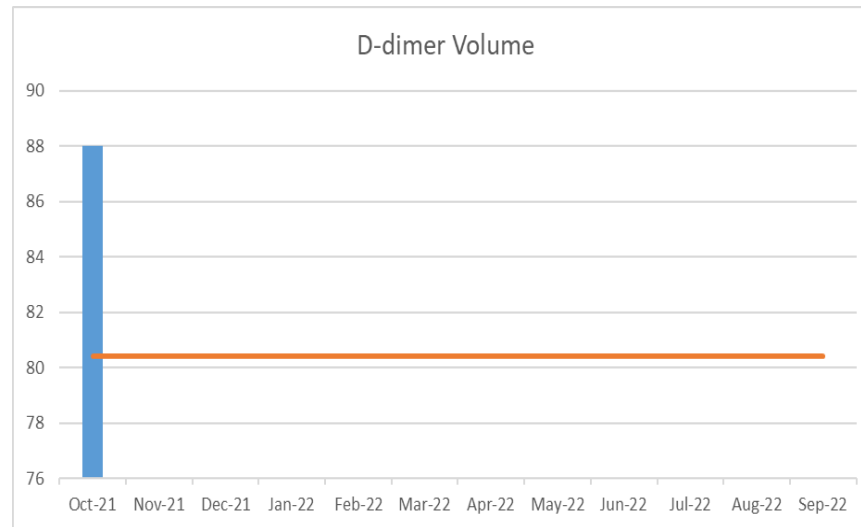
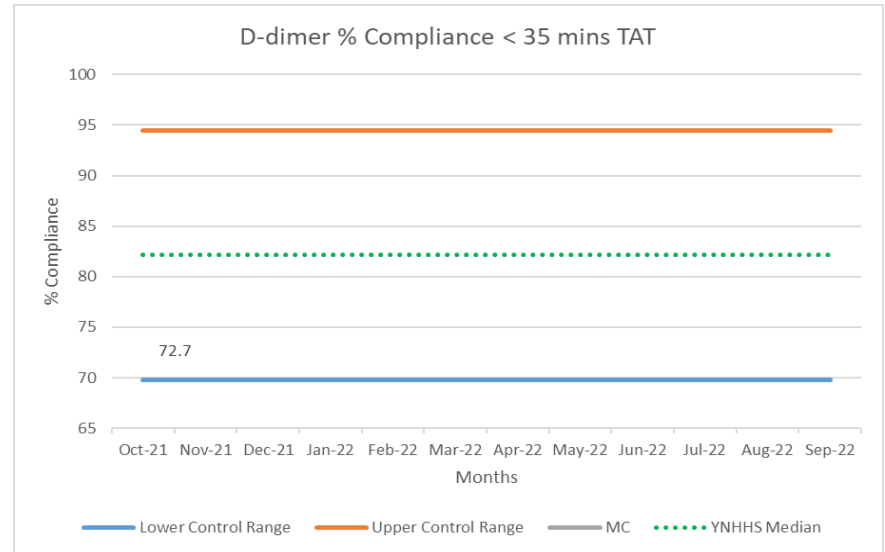
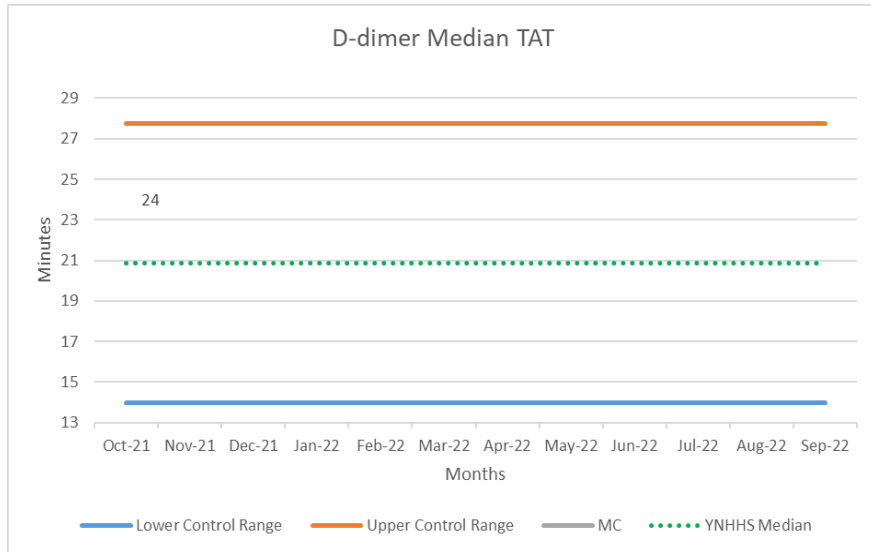


# Milford Campus – Complete Blood Count (CBC) ED TAT

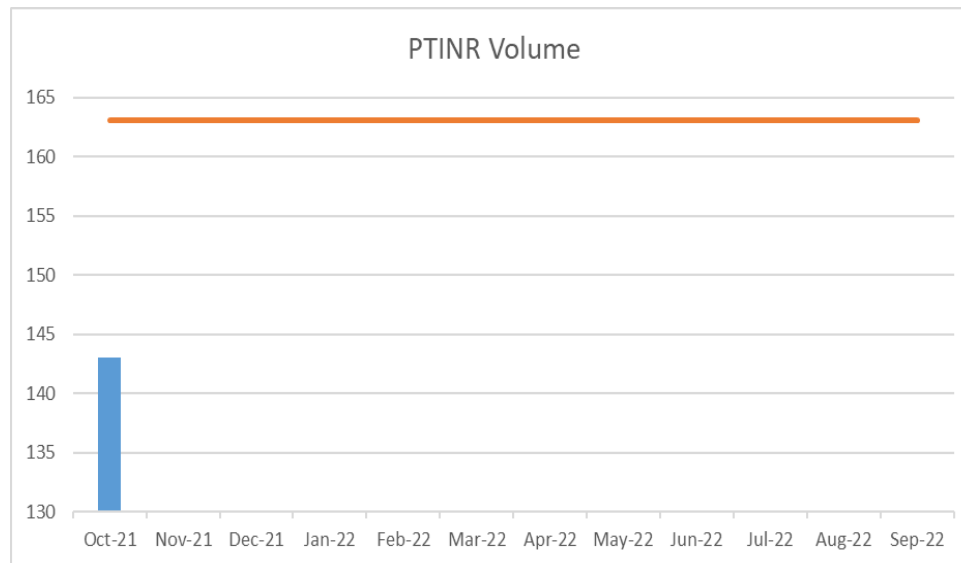
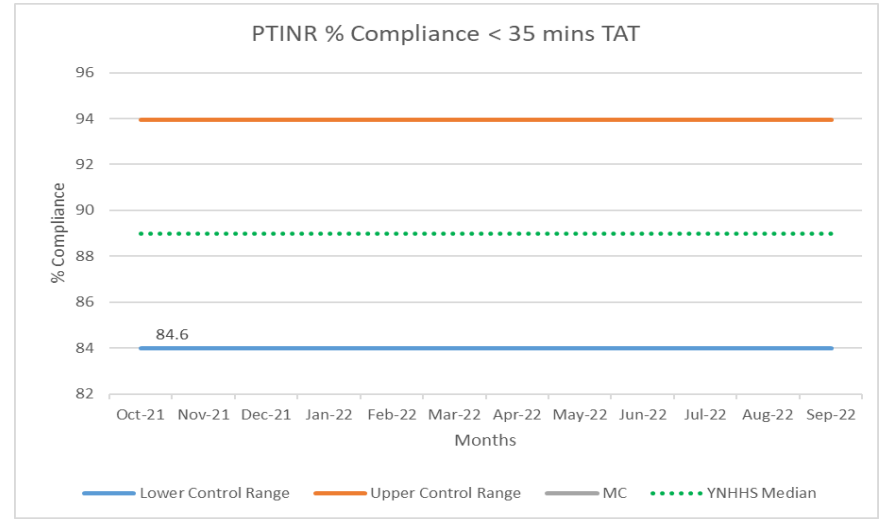
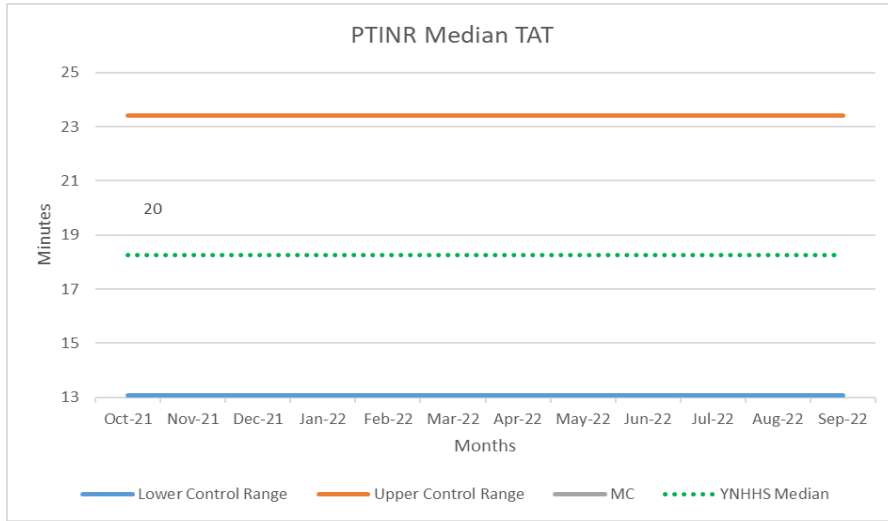




# Milford Campus – D-dimer ED TAT



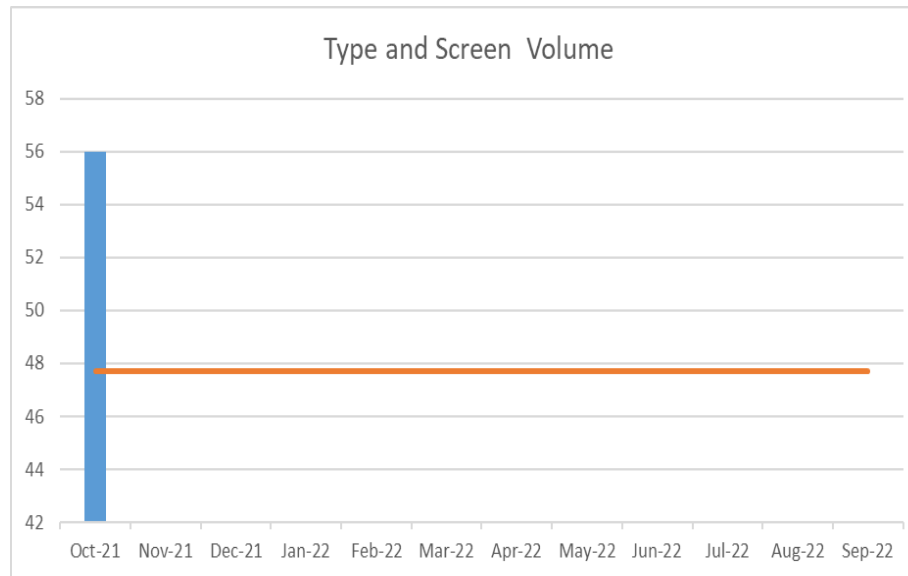
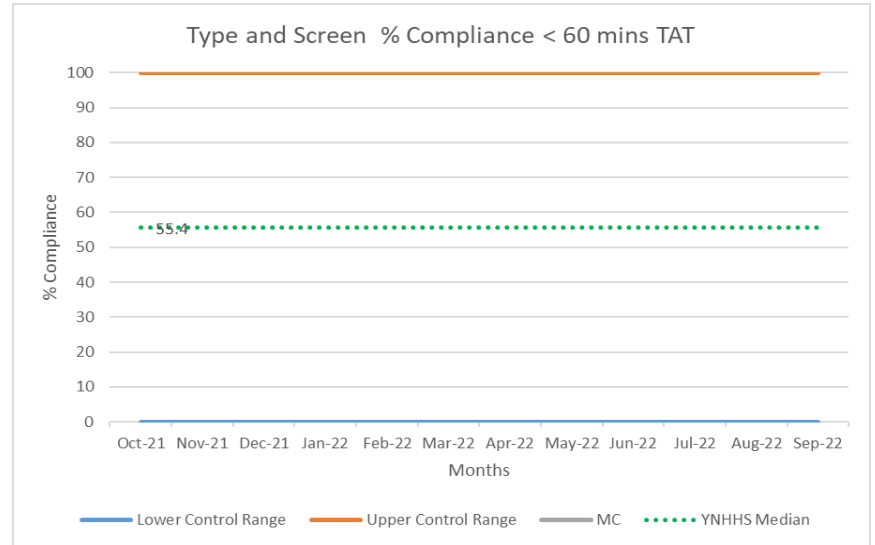
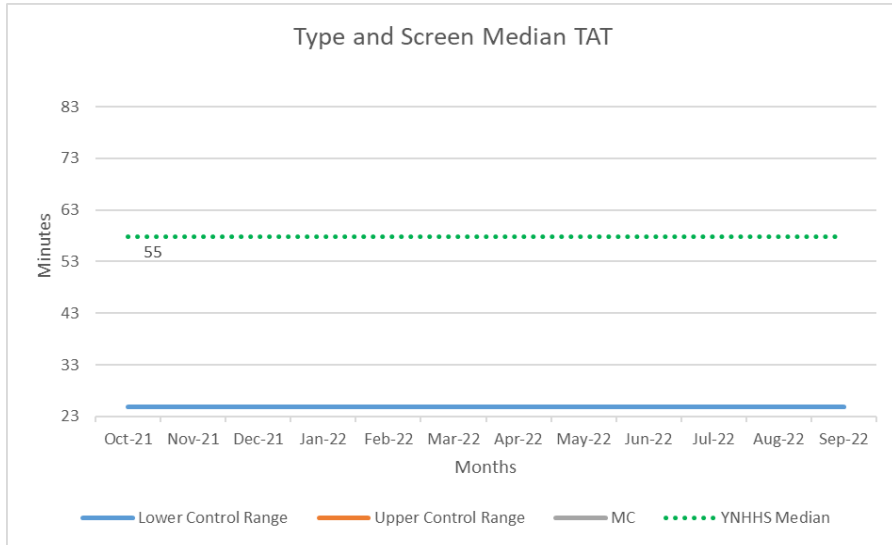
# Milford Campus – PTINR ED TAT



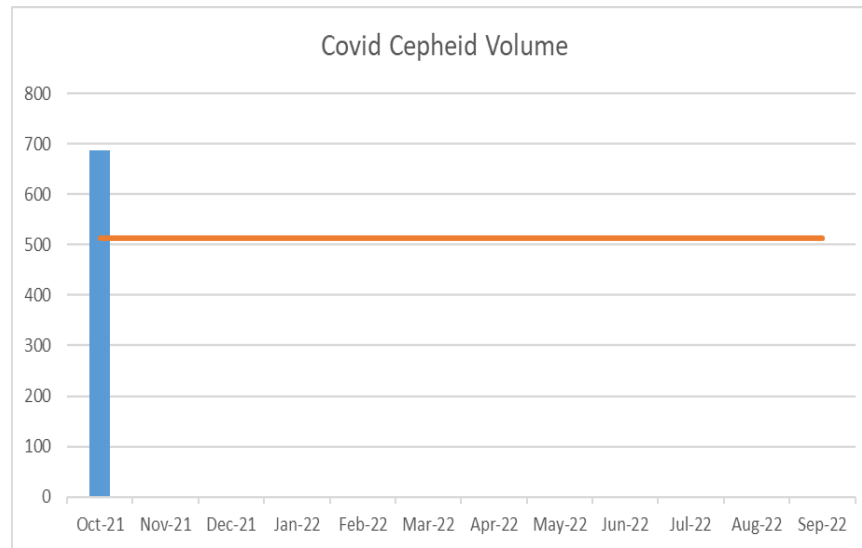
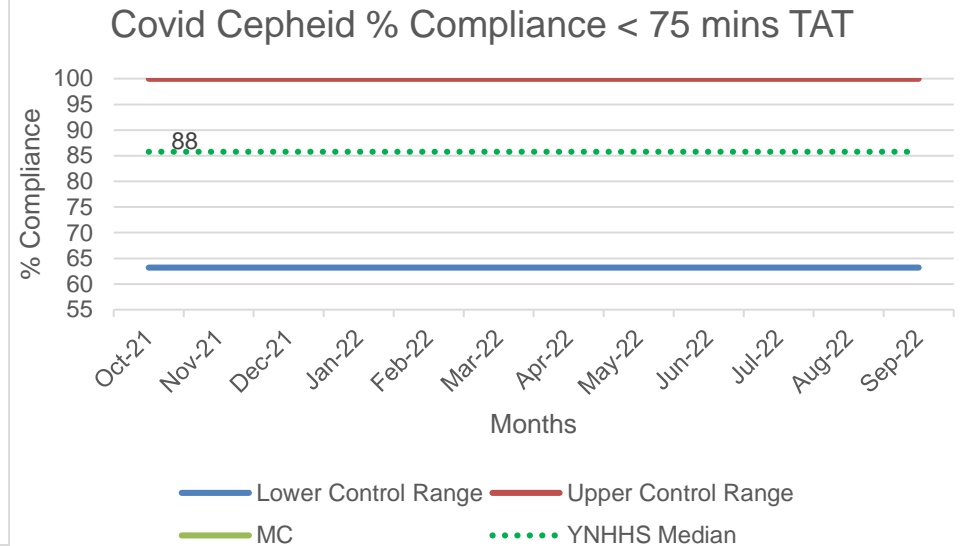
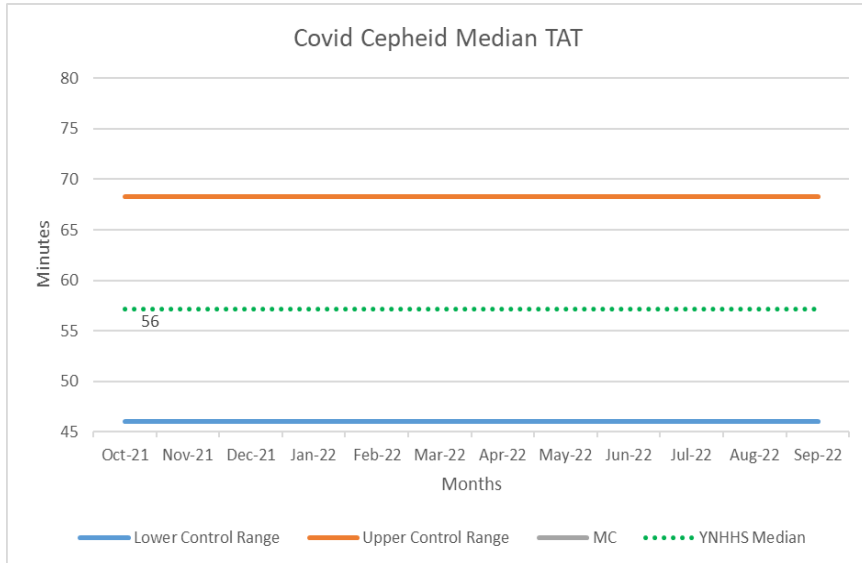




# Milford Campus – Type and Screen ED TAT



# Milford Campus – COVID Cepheid PCR ED TAT



# Milford Campus ED TAT Ordered to Collected and Collected to Received

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ED TAT Monitors	Oct 1 - 31, 2021	
	Ordered to Collected	Collected to Received
Troponin	18	9
BMP	20	10
CBC	18	11
D-dimer	13.5	12
PTINR	16	12
Type and Screen	16	11
COVID Cepheid	14	12

# Lab General - Milford

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


Measures will be reported in the November 2021 meeting.



# Home Bound Phlebotomy Survey Results

## Laboratory Medicine - Homebound Phlebotomy Patient Satisfaction Survey

How often do you use our homebound phlebotomy service?

		Response percent	Response total
Weekly		9.09%	1
Biweekly		9.09%	1
Monthly		9.09%	1
Every 3 to 6 months		45.46%	5
Every 6 to 12 months		27.27%	3

Statistics based on 11 respondents:



Was the person calling to schedule your in-house phlebotomy service appointment polite and courteous?

		Response percent	Response total
Very Satisfied		100%	11
Satisfied		0%	0
Neutral		0%	0
Dissatisfied		0%	0
Very Dissatisfied		0%	0

Statistics based on 11 respondents:

# Home Bound Phlebotomy Survey Results

**Did the staff member inform you at the time of the phone call that you needed to fast for this appointment?**

		Response percent	Response total
Yes		90.91%	10
No		0%	0
		9.09%	1

Statistics based on **11** respondents;

**Did the staff member inform you who the provider was that ordered the tests?**

		Response percent	Response total
Yes		100%	11
No		0%	0

Statistics based on **11** respondents;

# Home Bound Phlebotomy Survey Results

**Did the staff member explain the services you would be receiving in an understandable manner?**

		Response percent	Response total
Yes		100%	11
No		0%	0

Statistics based on 11 respondents;

**Did the phlebotomist arrive to the home, on time for the appointment?**

		Response percent	Response total
Yes		100%	11
No		0%	0

Statistics based on 11 respondents;

**Was the phlebotomist in uniform, have a badge and identify themselves upon arrival?**

		Response percent	Response total
Yes		100%	11
No		0%	0

Statistics based on 11 respondents;

# Home Bound Phlebotomy Survey Results

Did you observe proper hand washing/hand sanitizing?

		Response percent	Response total
Yes		100%	11
No		0%	0

Statistics based on 11 respondents;

Did the phlebotomist take care of you in a professional manner?

		Response percent	Response total
Yes		100%	11
No		0%	0

Statistics based on 11 respondents;

Were all of your questions answered in an understandable way?

		Response percent	Response total
Yes		100%	11
No		0%	0

Statistics based on 11 respondents;


# Home Bound Phlebotomy Survey Results

**Overall, how satisfied were you with the services you received from the homebound phlebotomist?**

		Response percent	Response total
Very Satisfied		100%	11
Satisfied		0%	0
Neutral		0%	0
Unsatisfied		0%	0
Very Unsatisfied		0%	0

Statistics based on **11** respondents;

**How likely are you to recommend this service to a friend or another family member?**

		Response percent	Response total
Highly Likely		100%	11
Likely		0%	0
Neutral		0%	0
Unlikely		0%	0
Highly Unlikely		0%	0

Statistics based on **11** respondents;

# Home Bound Phlebotomy Survey Results

## Would you like a follow up call from the Phlebotomy Manager?

		Response percent	Response total
Yes, Name and Contact Number		27.27%	3
No		72.73%	8
			3

Statistics based on **11** respondents: