

Laboratory Medicine – December 2021

January 24, 2022

Bridgeport and Milford Campuses Turnaround Time Goals

- 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

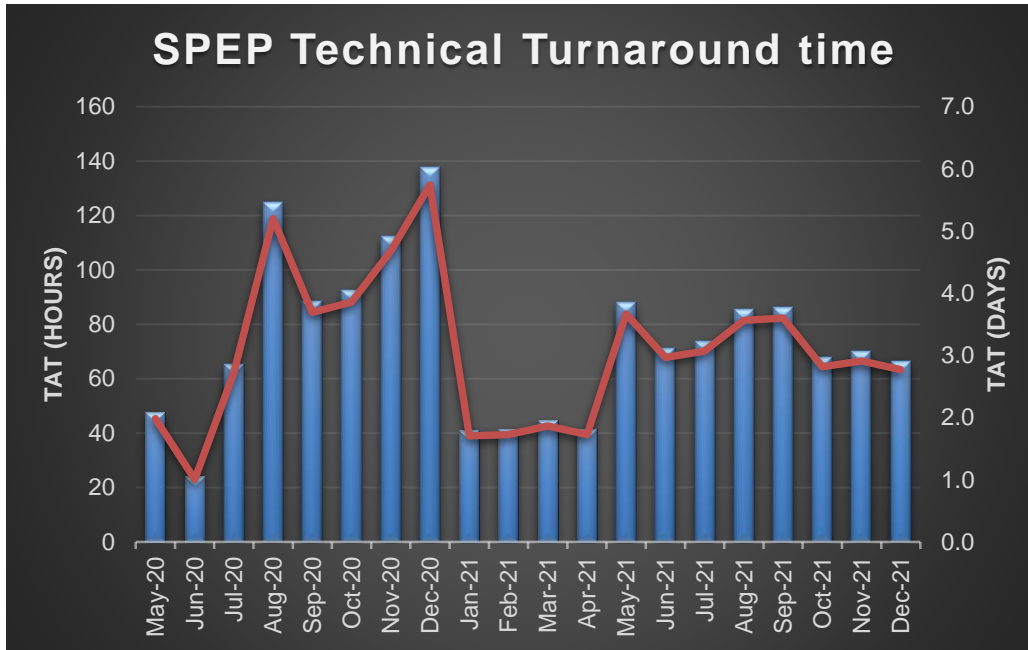
SPEP Outcome Metrics: Technical

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
Nov 2021	2.9
Dec 2021	2.77
YTD	2.8



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



FY21

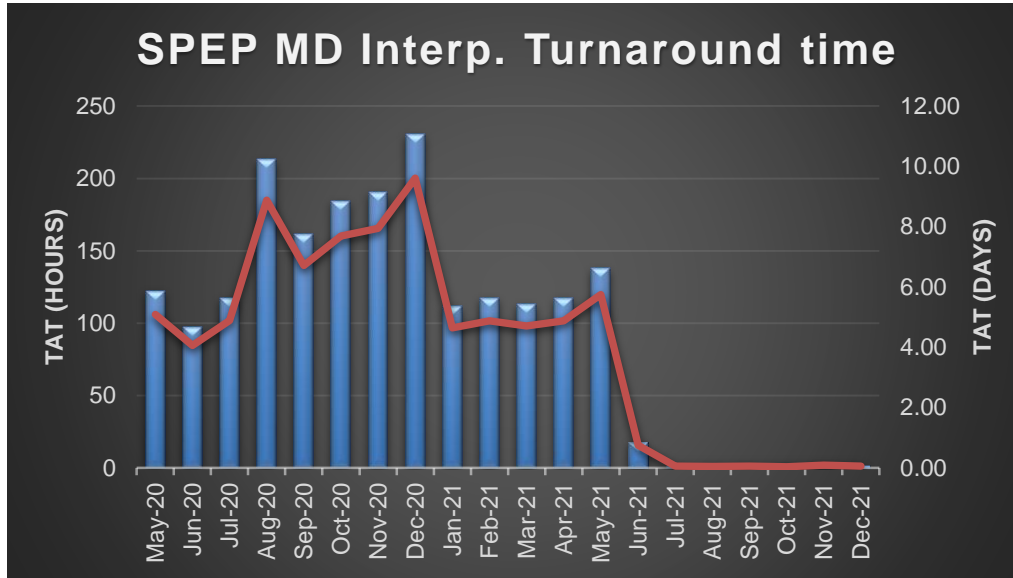


FY22



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
Nov 2021	0.09
Dec 2021	0.06
FYTD	0.06

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



FY21

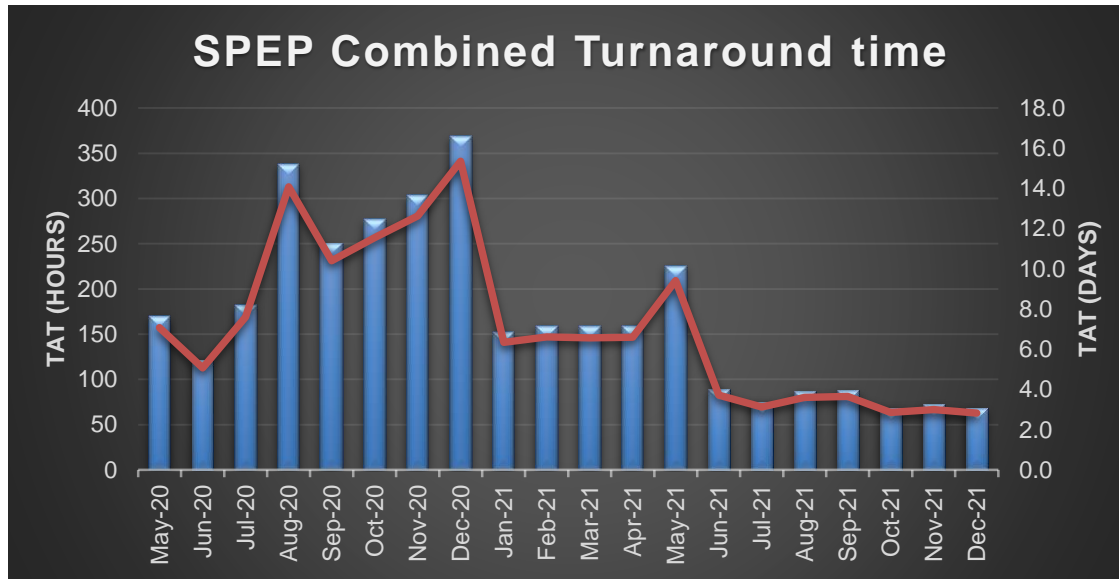


FY22



SPEP Outcome Metrics: Tech + MD Total

Establish Target & Stretch Goals

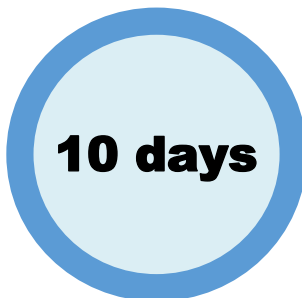


Threshold (FY 19)	Target	Stretch
Current Median	25%	50%
7 days	5.3 days	3.5 days

Post Intervention

% Improvement	TAT (days)
Oct 2021	2.86
Nov 2021	3.00
Dec 2021	2.83
FYTD	2.93

Baseline:
May 2020 – Dec 2020



FY21

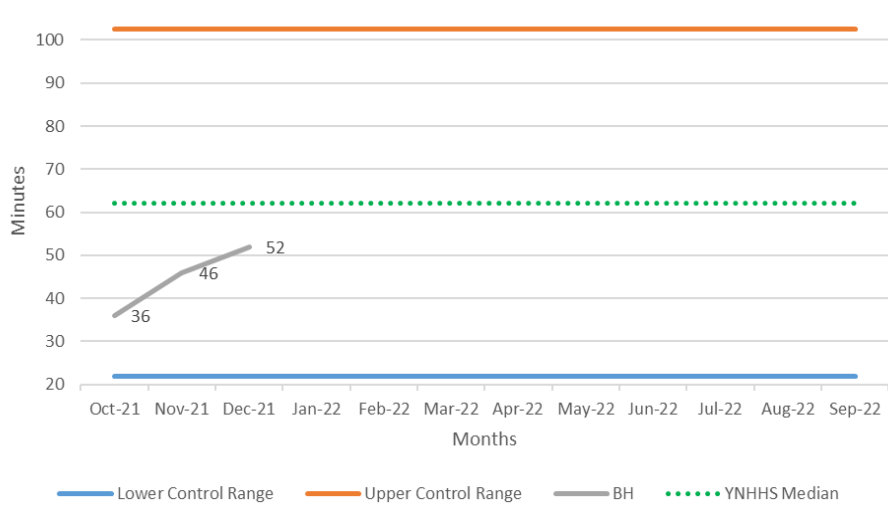


FYTD22

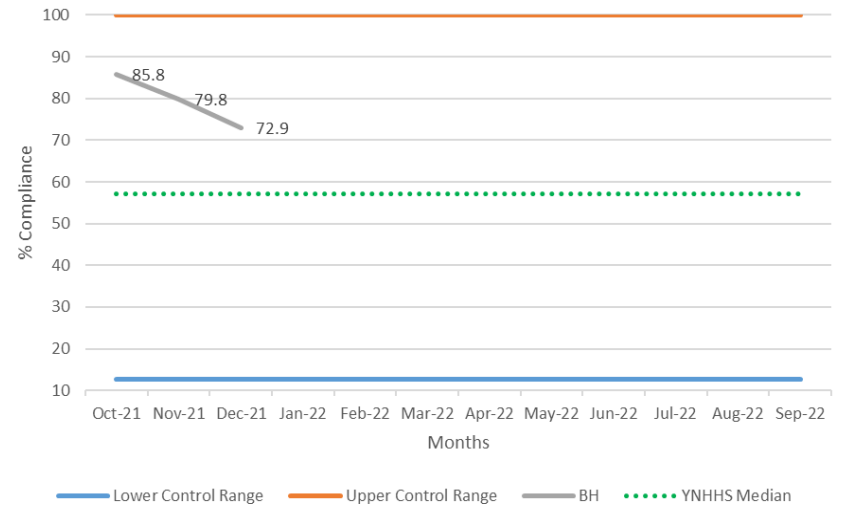


Bridgeport Campus – Procalcitonin

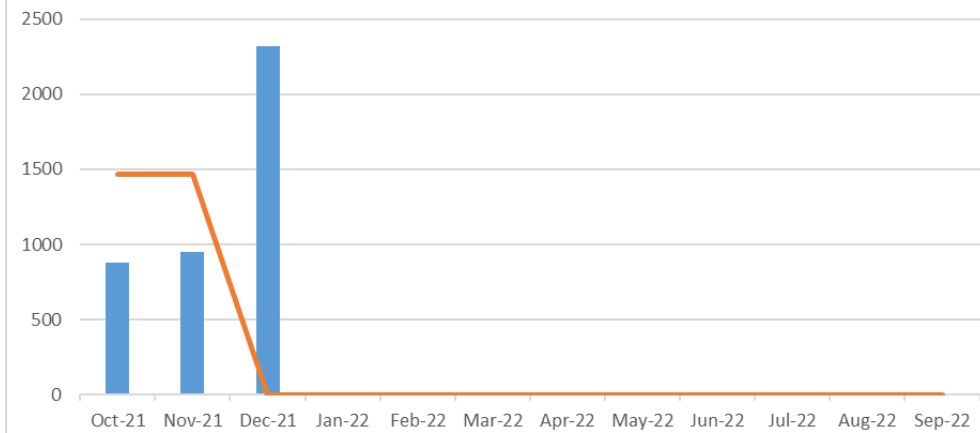
Procalcitonin Median TAT



Procalcitonin % Compliance < 63 mins TAT

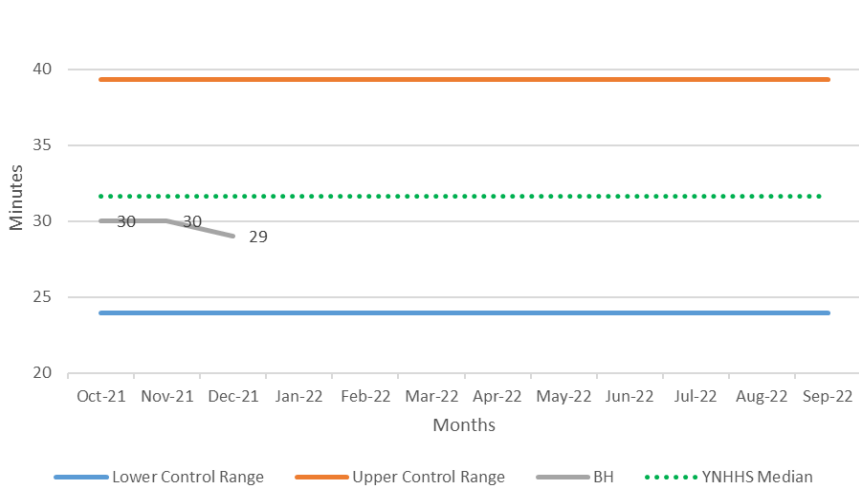


Procalcitonin Volume

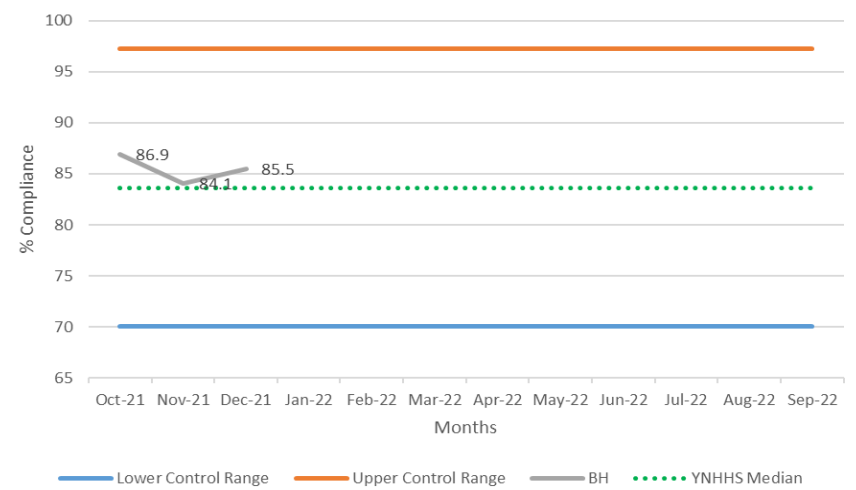


Bridgeport Campus – Troponin ED TAT

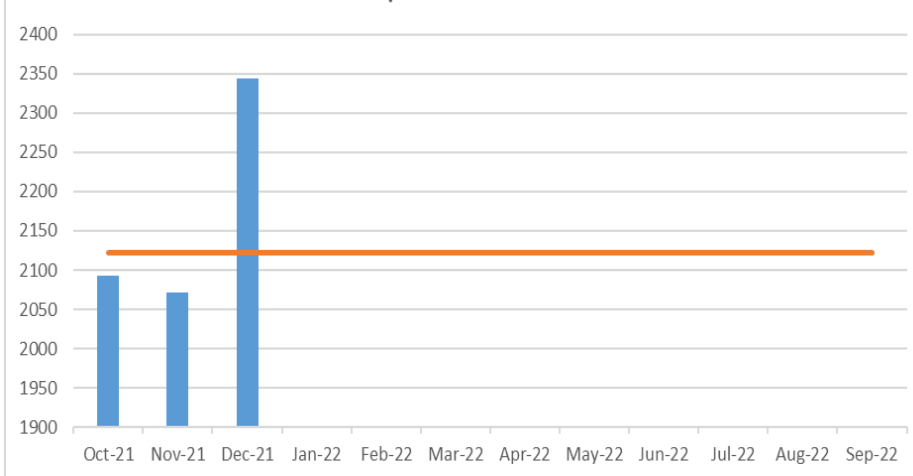
Troponin Median TAT



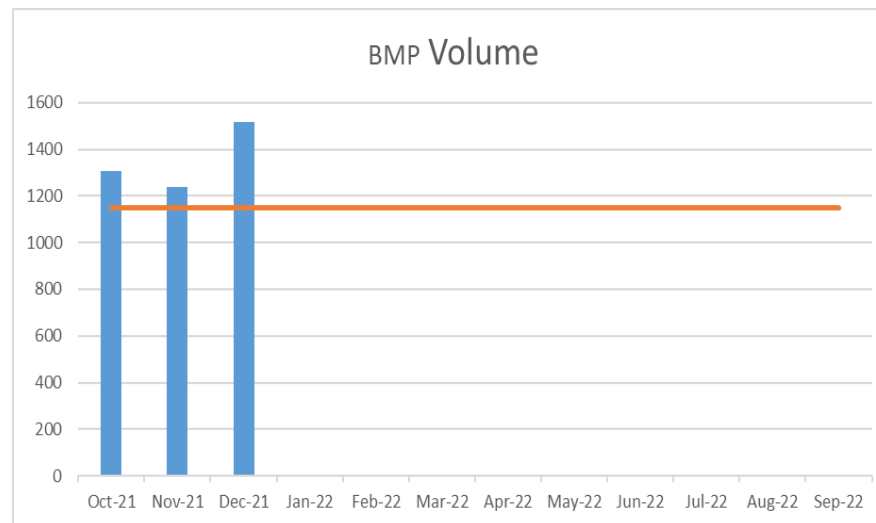
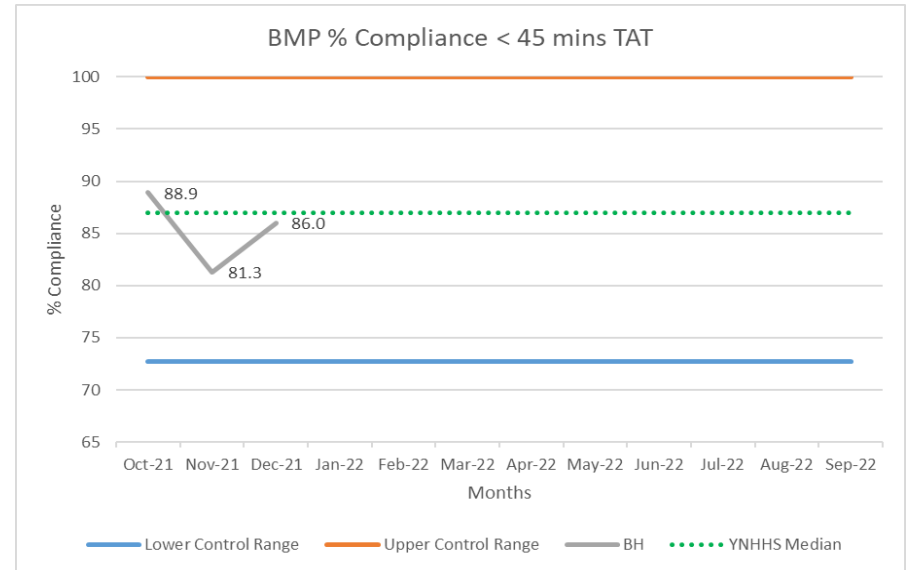
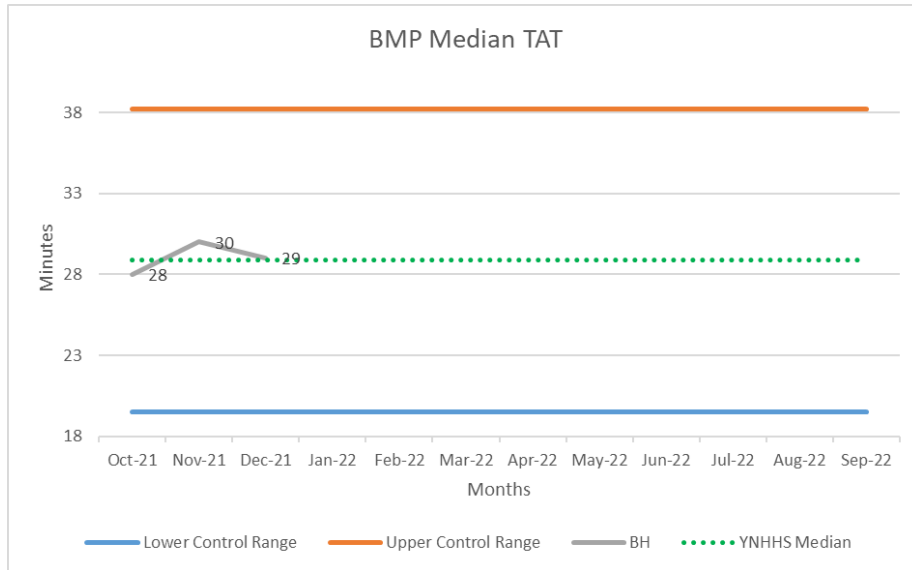
Troponin % Compliance < 45 mins TAT



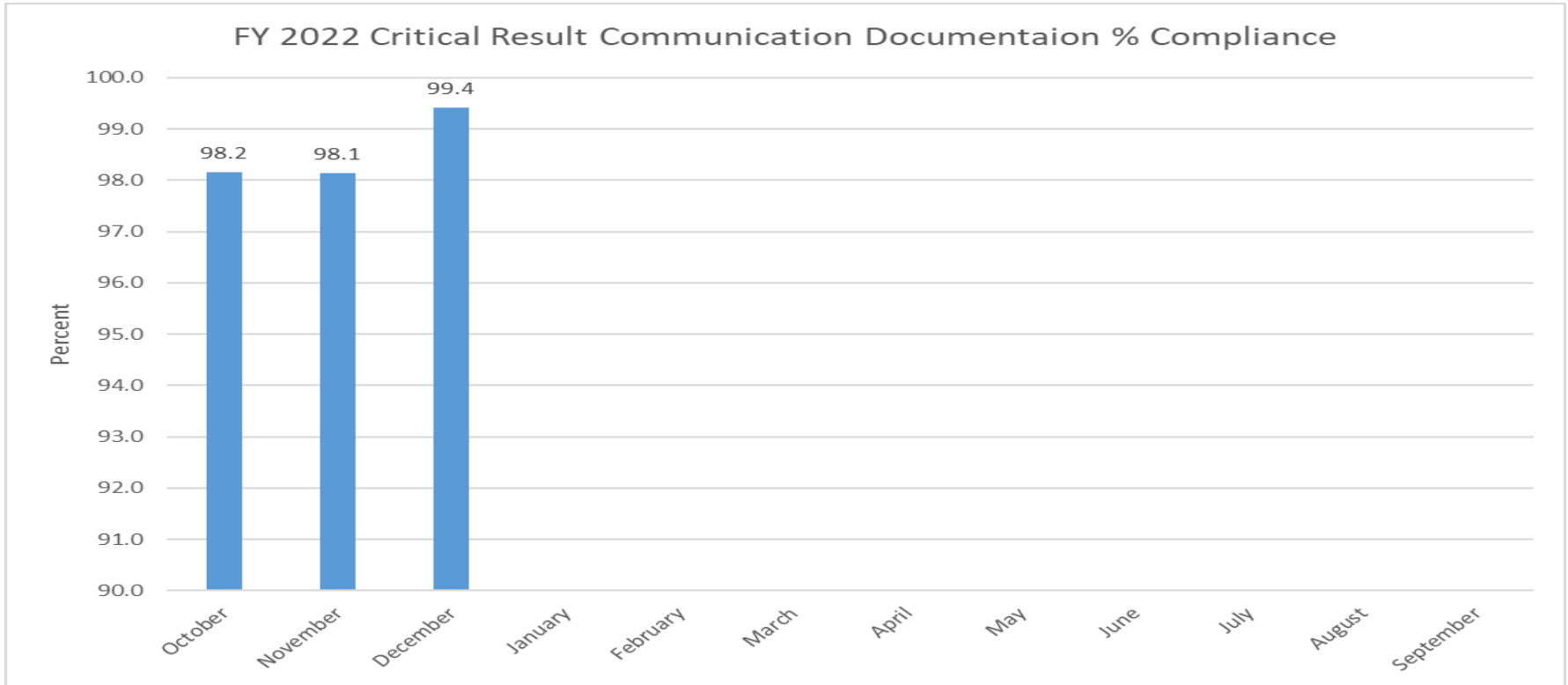
Troponin Volume



Bridgeport Campus – Basic Metabolic Panel (BMP) ED TAT



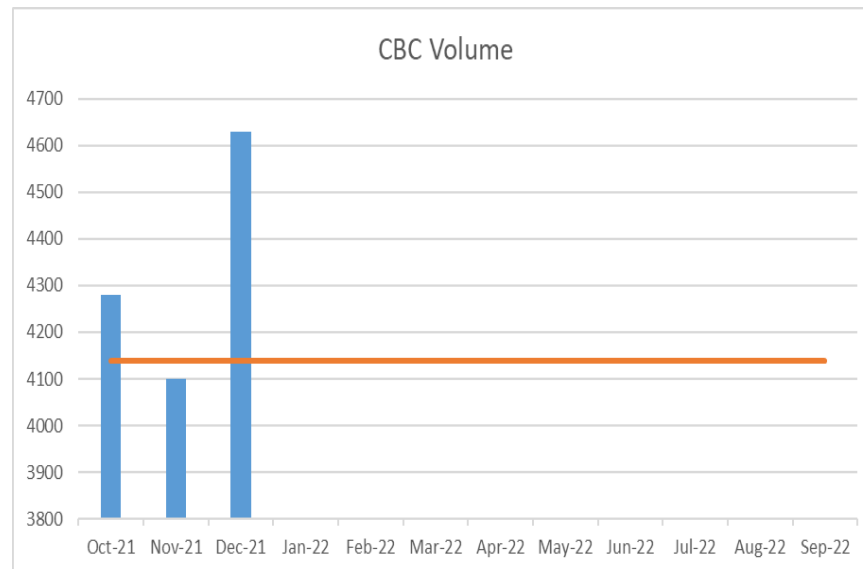
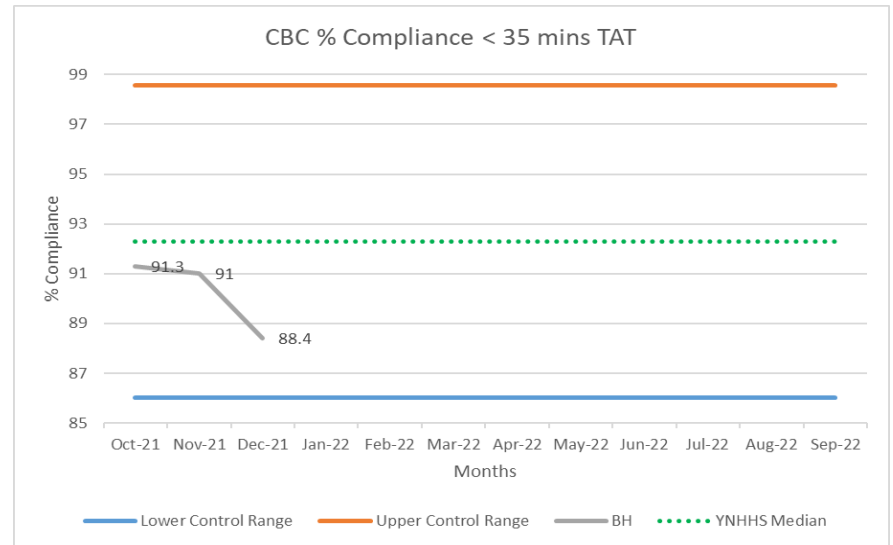
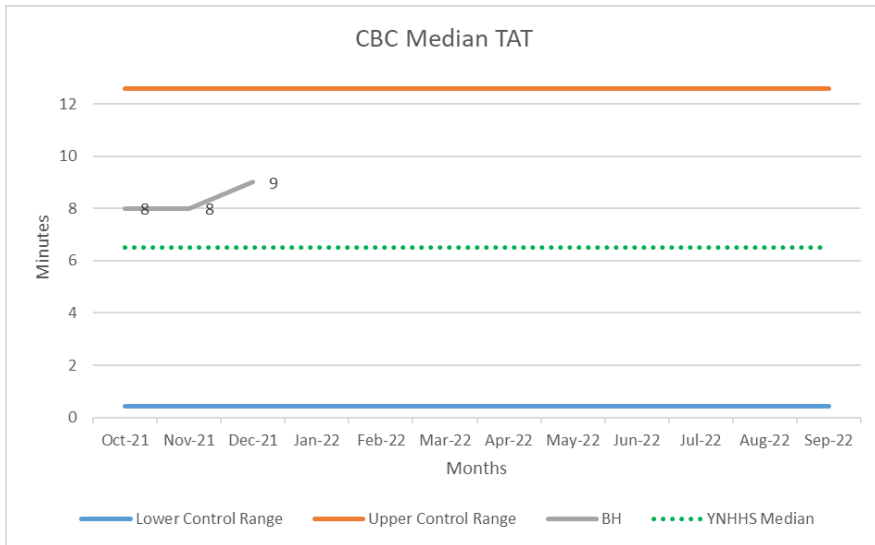
Chemistry & Immunology



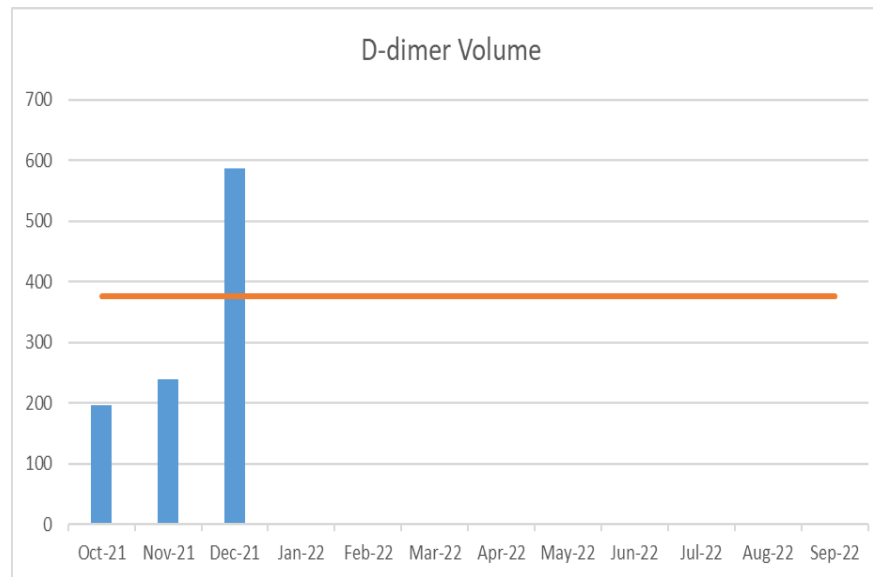
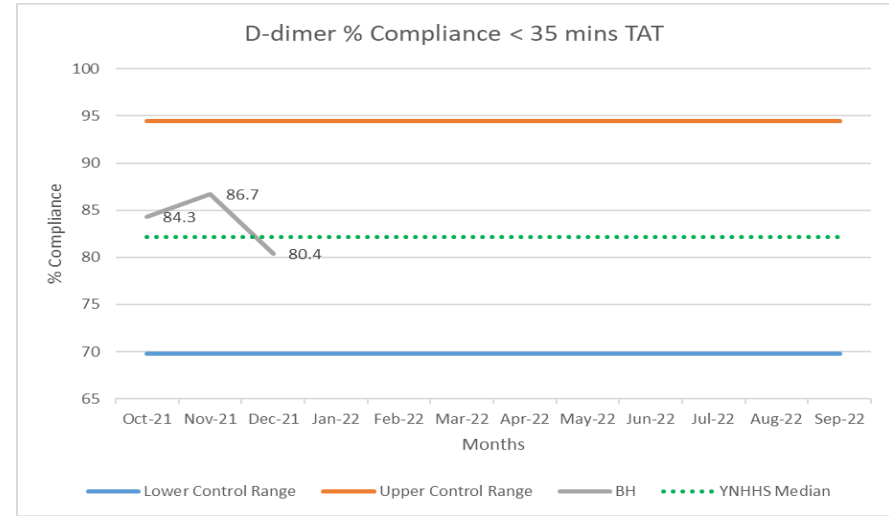
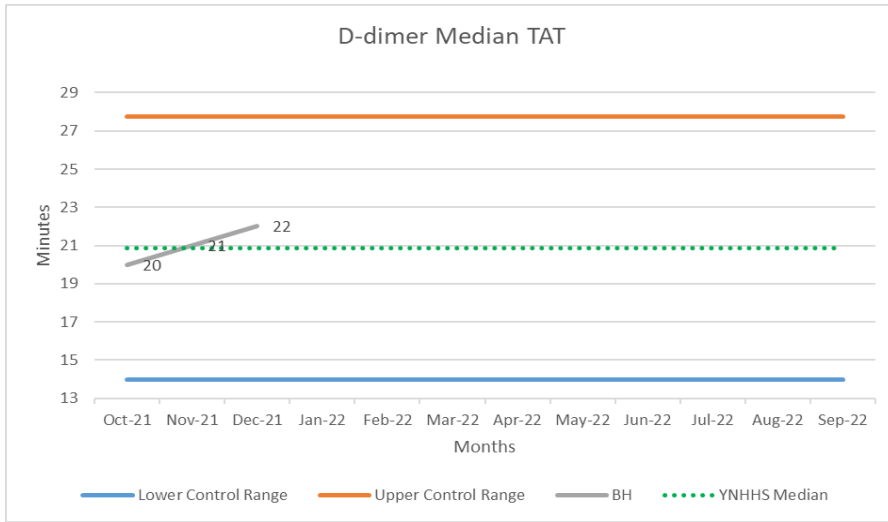
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
n	975	914	1350									
#compliant	957	897	1342									
#noncompliant	18	17	8									

not called	4	5	5									
no full name	8	8	2									
no title	6	4	1									

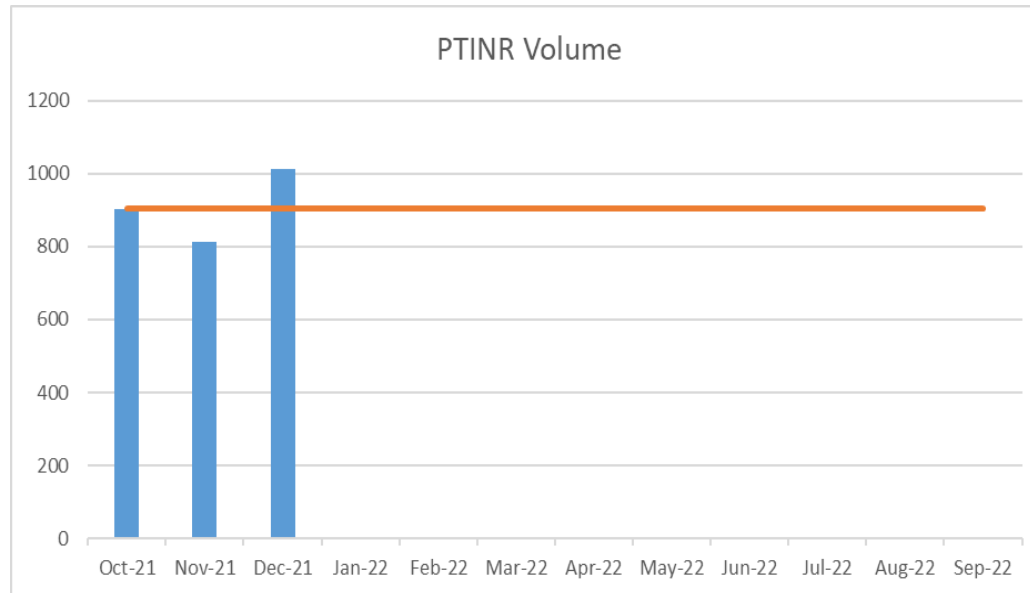
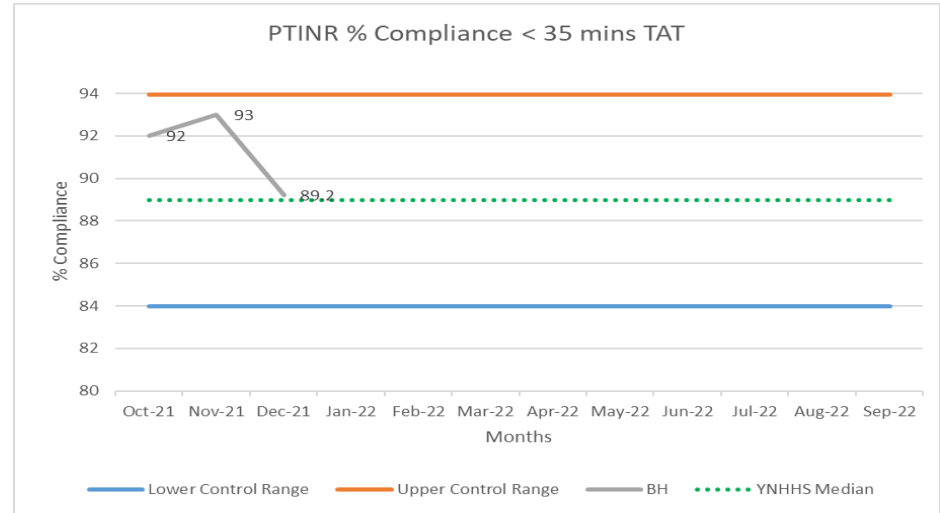
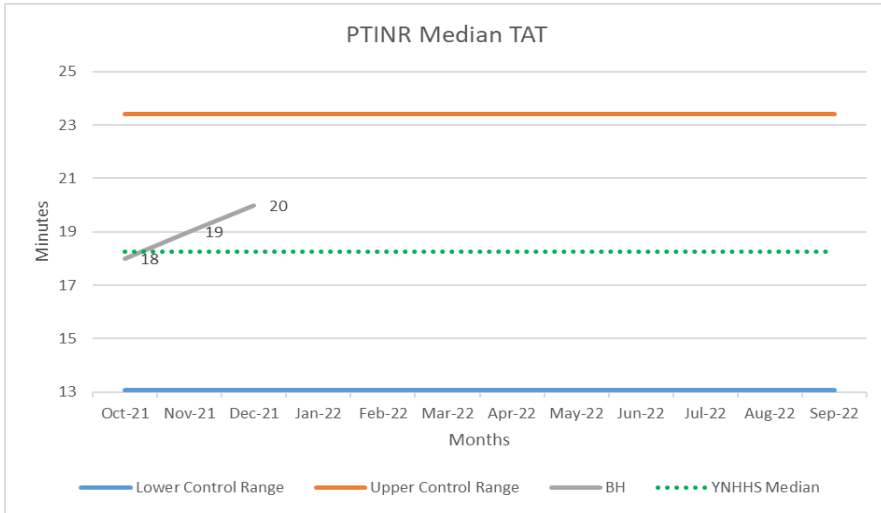
Bridgeport Campus – Complete Blood Count (CBC) ED TAT



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 = 118 #with cytology ordered =44	EPIC	95%	100%	Reviewed fluids with Dr. Chen. No malignant cells seen.	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%	100%		K. Castillo	

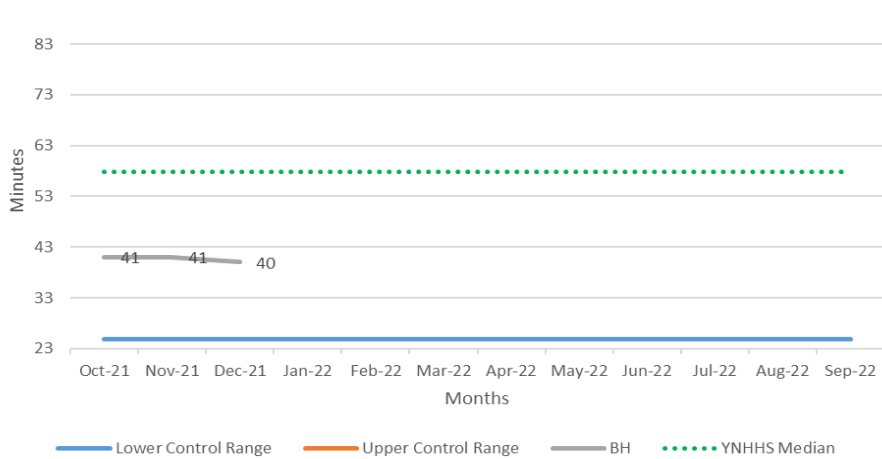
Aspect of Care	Threshold Expected / Target	Sample Size	Data Source	Threshold Achieved	Prior Month's Data	Remedial Action Taken	Responsible Party	Outcome
Corrected results are phoned to care giver	100% Compliance	3	EPIC	67%	80%	Of the 3 result corrections, 1 was not called. Tech was counselled.	K. Castillo	

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

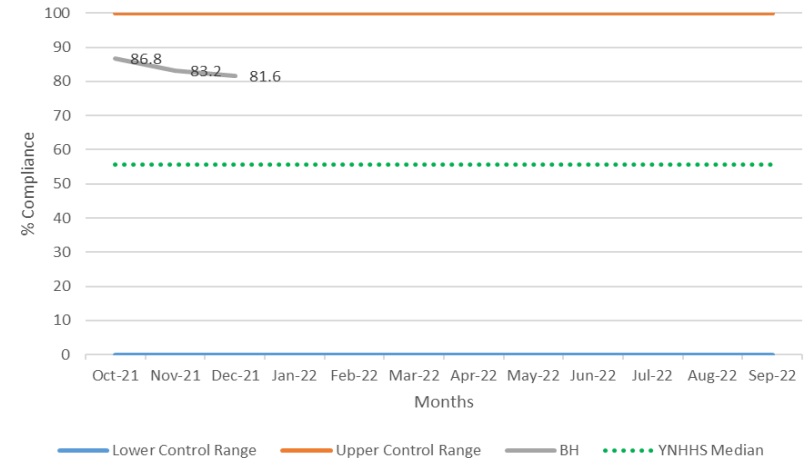
Corrected reports: Total corrected Reports = 12 Data entry error – 2 comment added- 8 Instrument malfunction -1 test added on-1	
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Bridgeport Campus – Type and Screen ED TAT

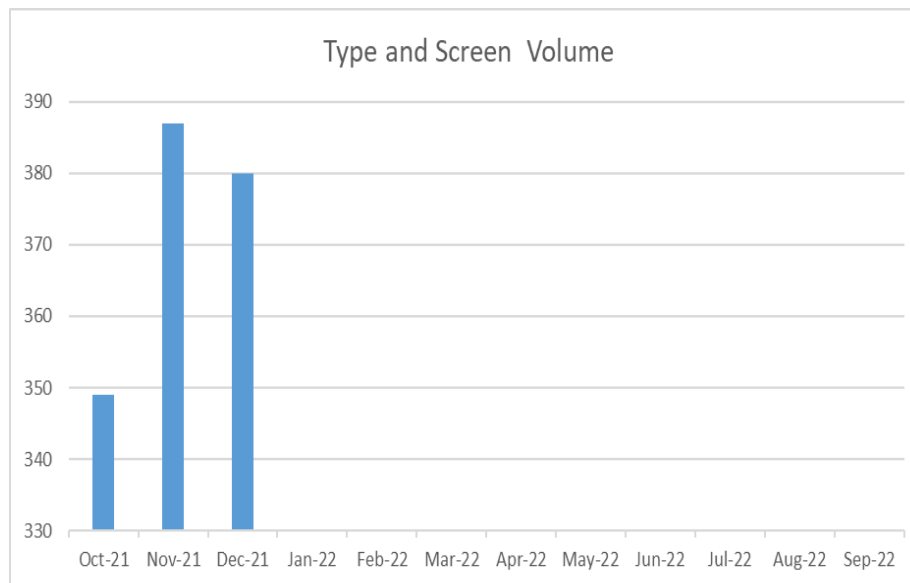
Type and Screen Median TAT



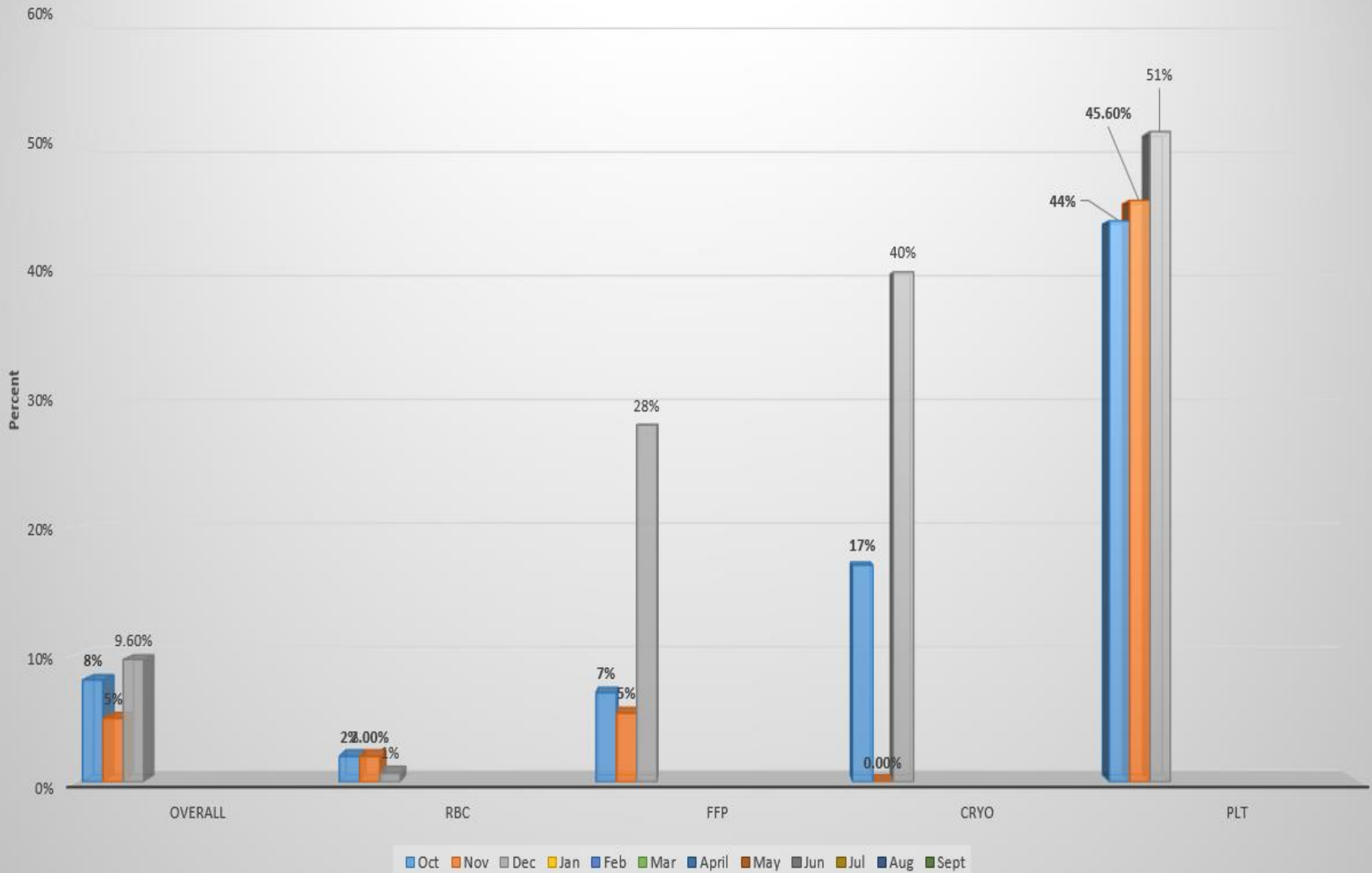
Type and Screen % Compliance < 60 mins TAT



Type and Screen Volume

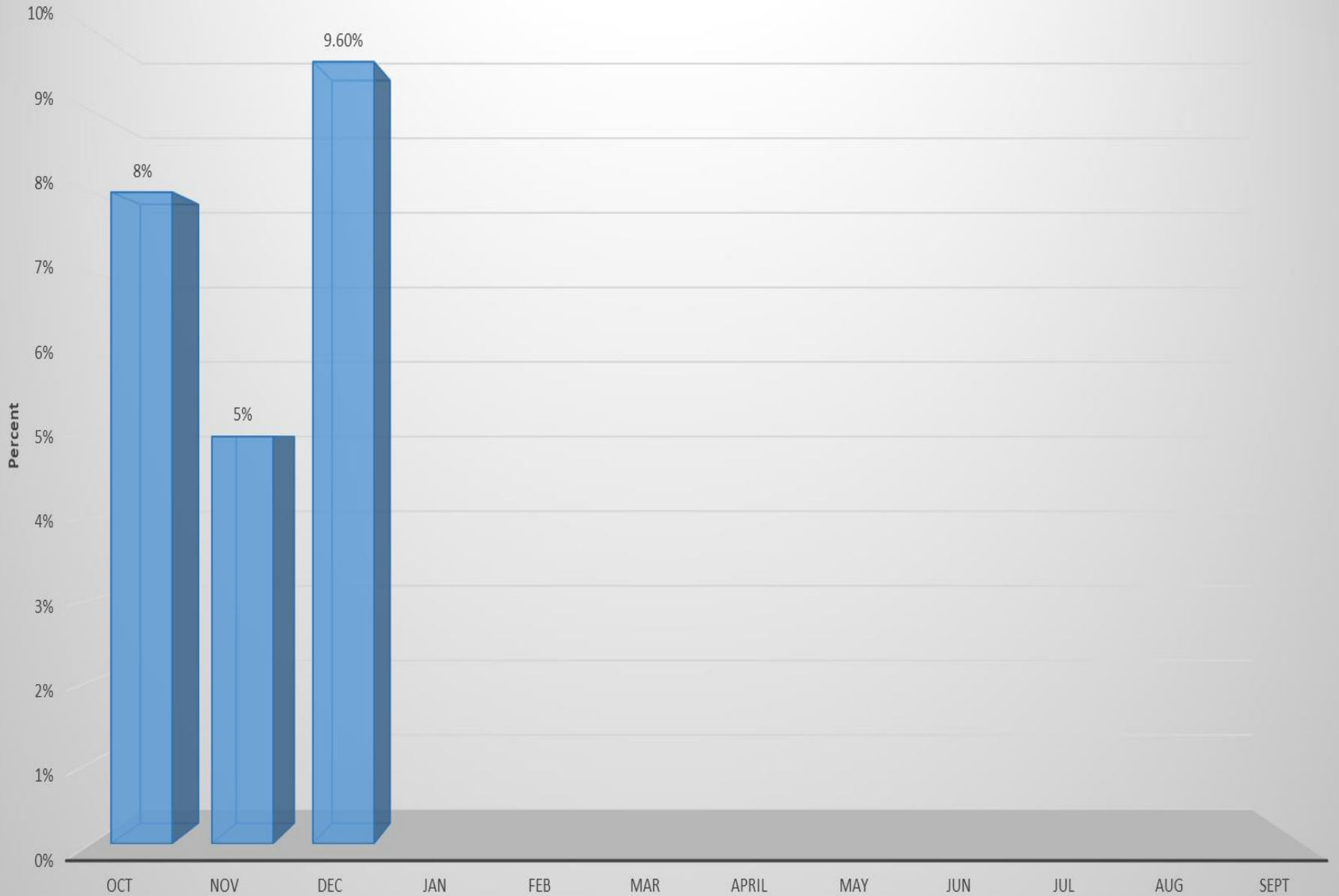


YTD Blood Wastage 2022 – Bridgeport Campus

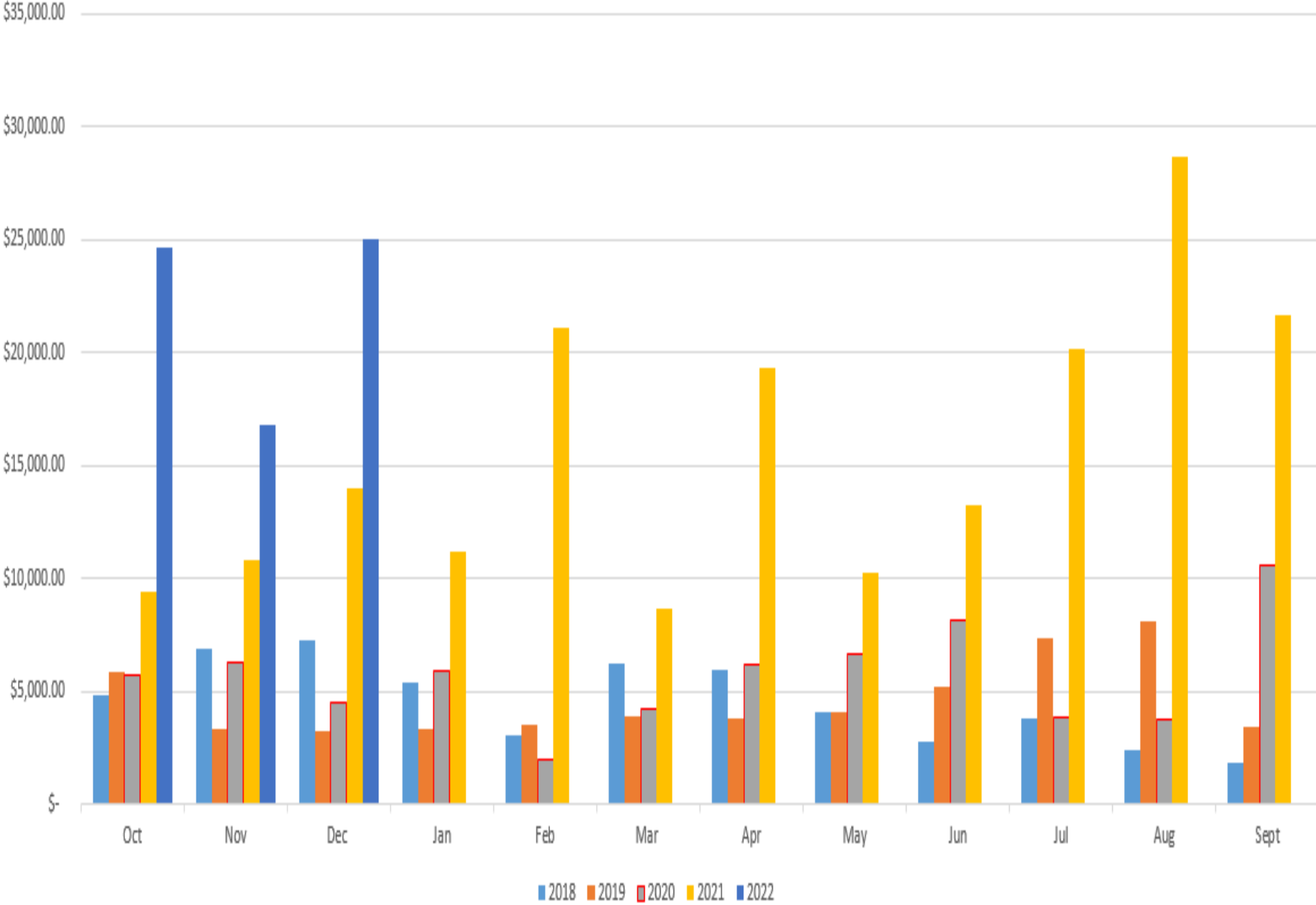


Total Amount \$66,507.24

2022 Overall Wastage Bridgeport Campus

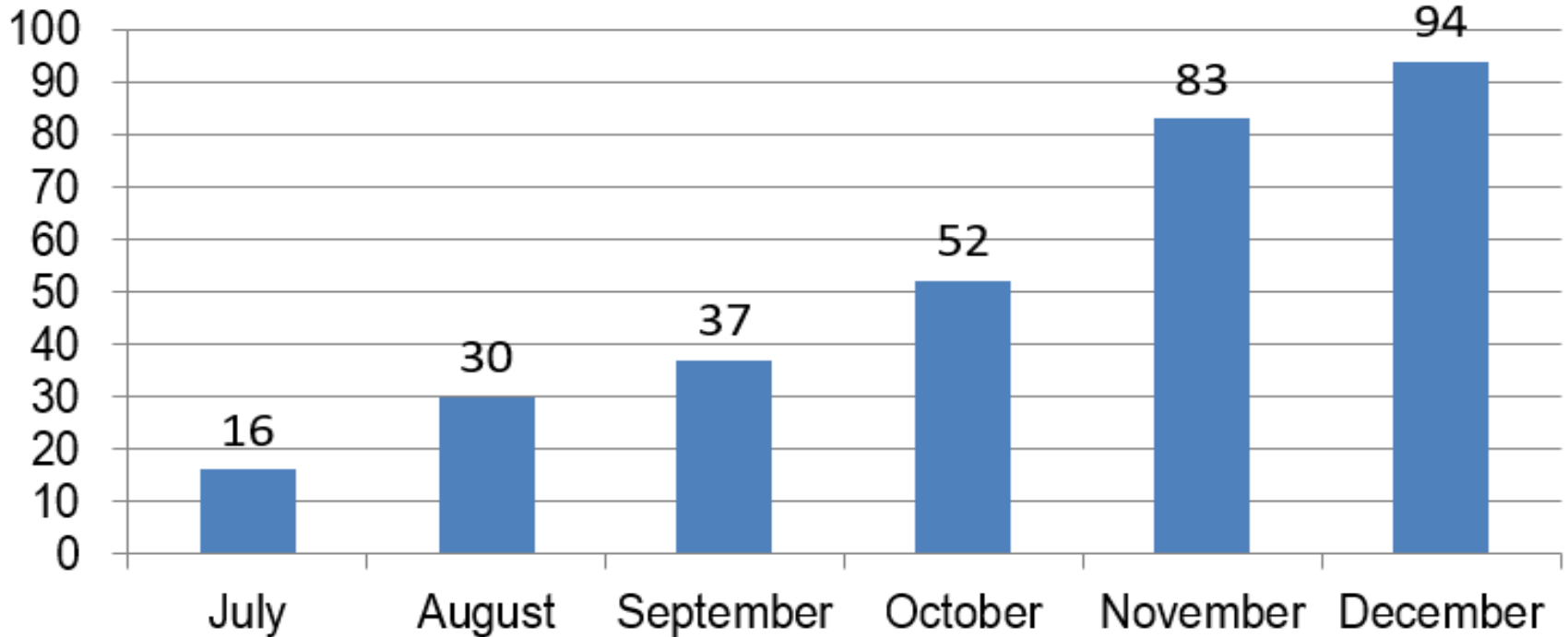


Bridgeport Campus Blood Wastage FY18, FY19, FY20, FY21



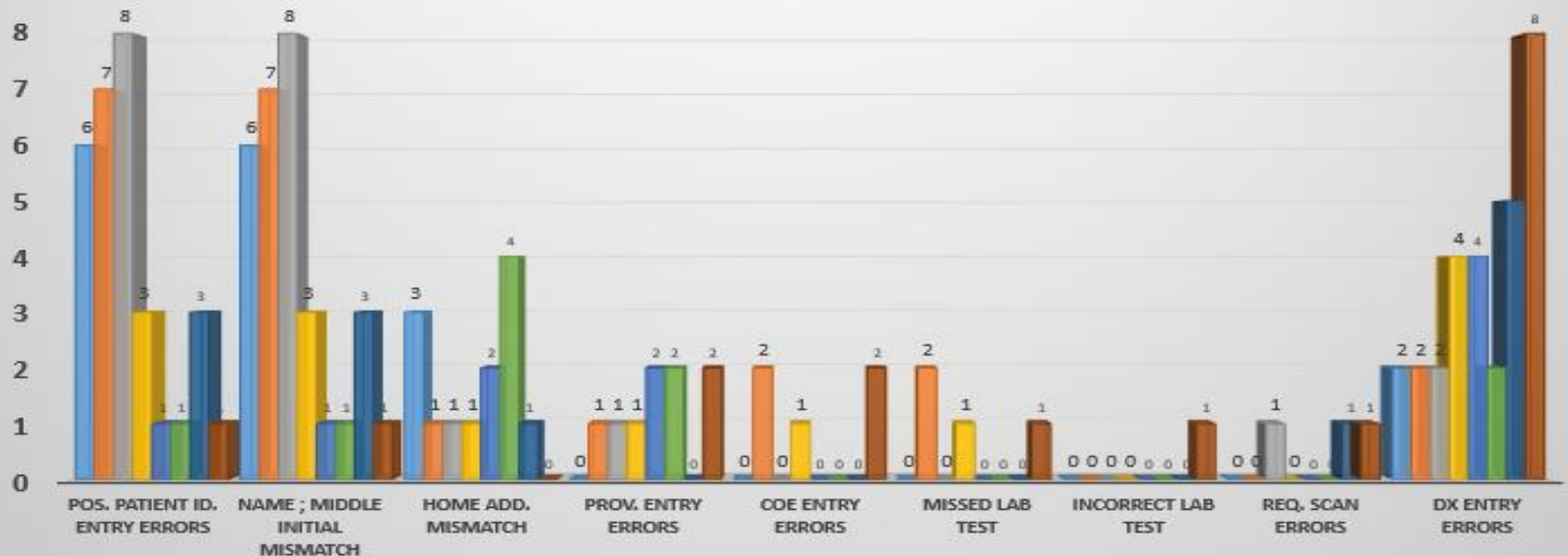
Bridgeport Hospital Laboratory CAP Competency Completions July 2021 – December 2021

Goal 100%



Completed						
Completed/ Total	35/219	74/244	93/253	132/255	263/316	304/323
% Completed	16%	30%	37%	52%	83%	94%

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

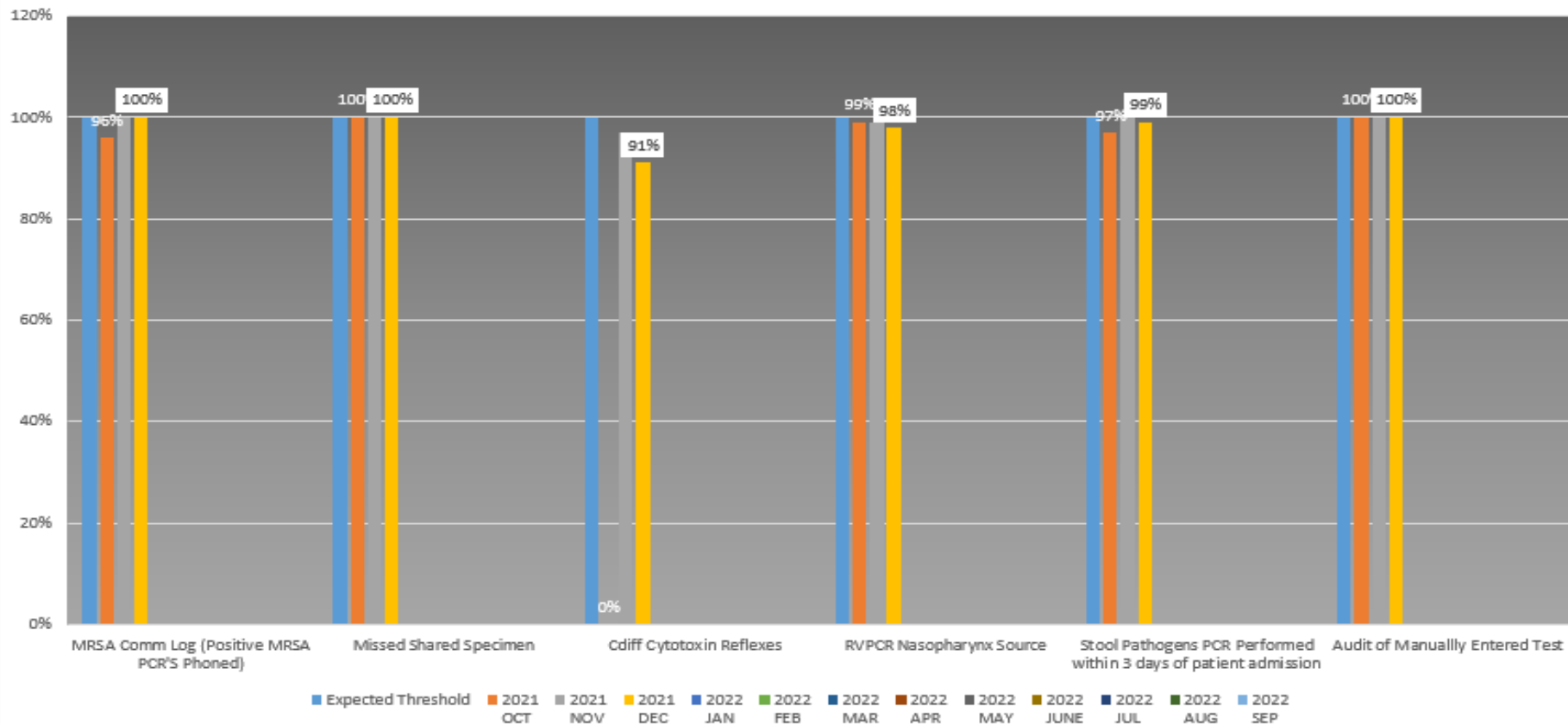


	Pos. Patient ID. Entry Errors	Name ; Middle Initial Mismatch	Home Add. Mismatch	Prov. Entry Errors	COE Entry Errors	Missed Lab Test	Incorrect Lab Test	Req. Scan Errors	Dx Entry Errors
MAY	6	6	3	0	0	0	0	0	2
JUNE	7	7	1	1	2	2	0	0	2
JULY	8	8	1	1	0	0	0	1	2
AUGUST	3	3	1	1	1	1	0	0	4
SEPTEMBER	1	1	2	2	0	0	0	0	4
OCTOBER	1	1	4	2	0	0	0	0	2
NOVEMBER	3	3	1	0	0	0	0	1	5
DECEMBER	1	1	0	2	2	1	1	1	8

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 or scanned incorrectly.
Dx Errors: One or more Dx Not listed for visit.

Microbiology Quality Assurance FY 2021



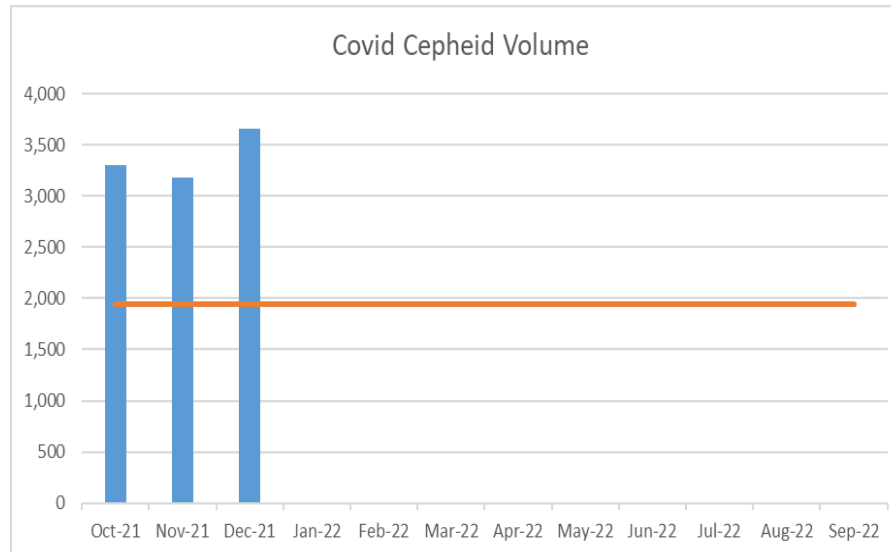
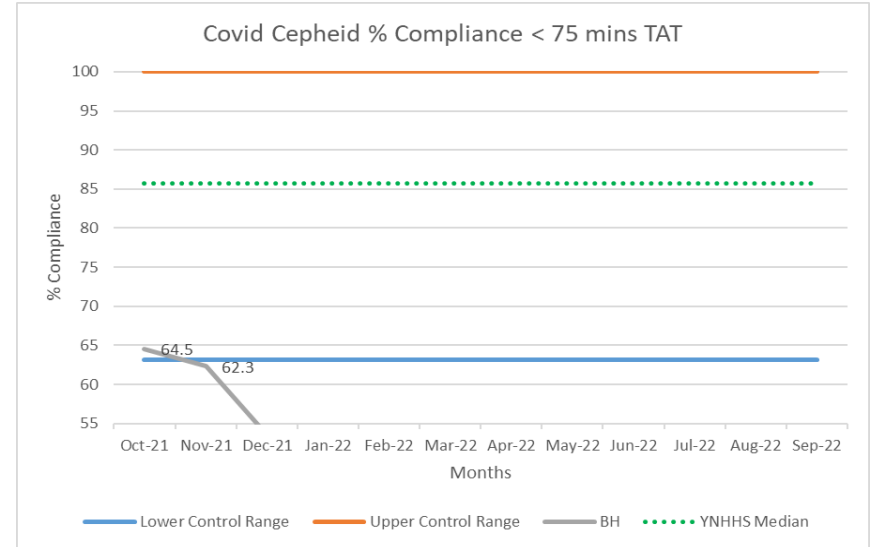
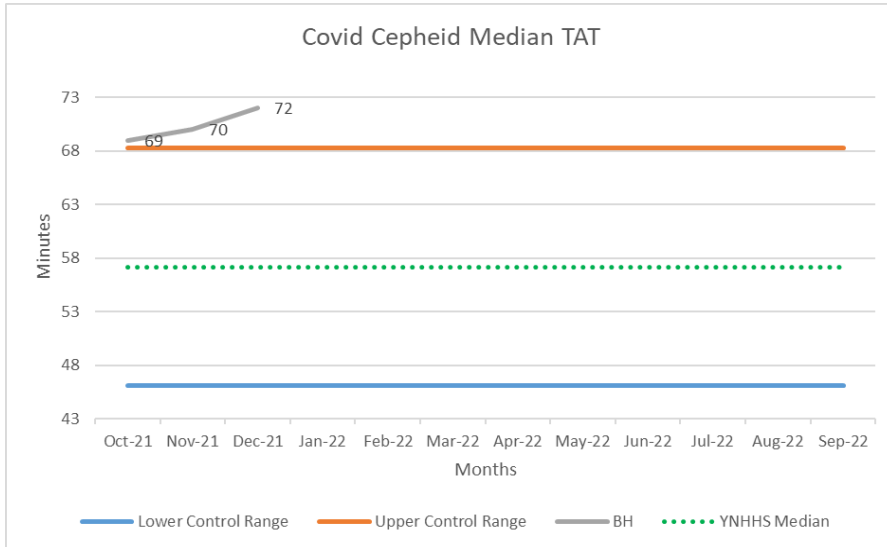
Total V	October	November	December	January	February	March	April	May	June	July	AUG	Sept
MRSA	236	269	313									
MRSA +	27	23	38									
Cdiff	142	133	121									
Cdiff +	20	33	33									
RVP	211	263	242									
Stool	141	126	100									
Stool Admitted	68	48	51									
Errors	6	2	0									

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

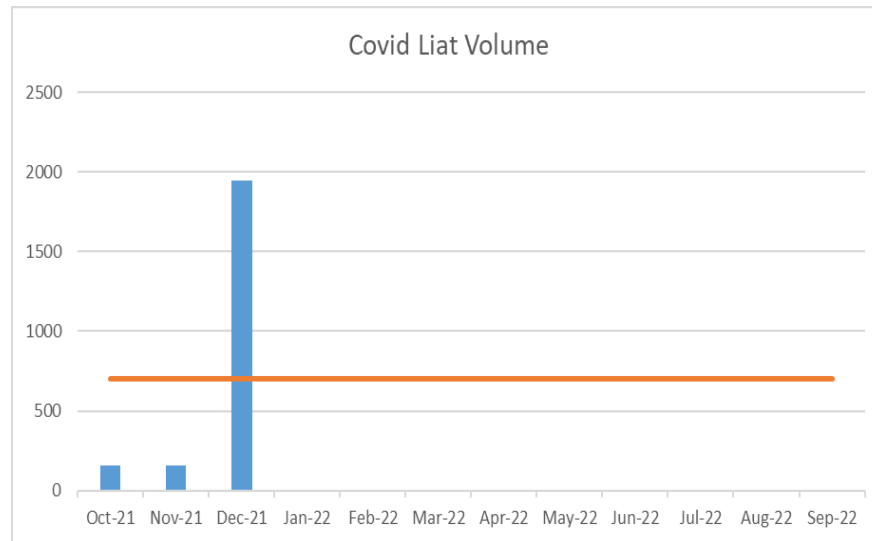
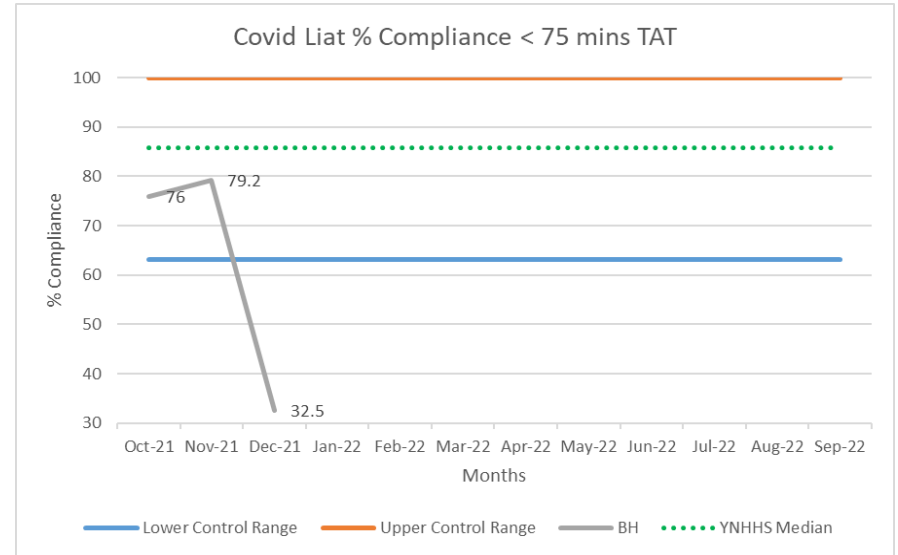
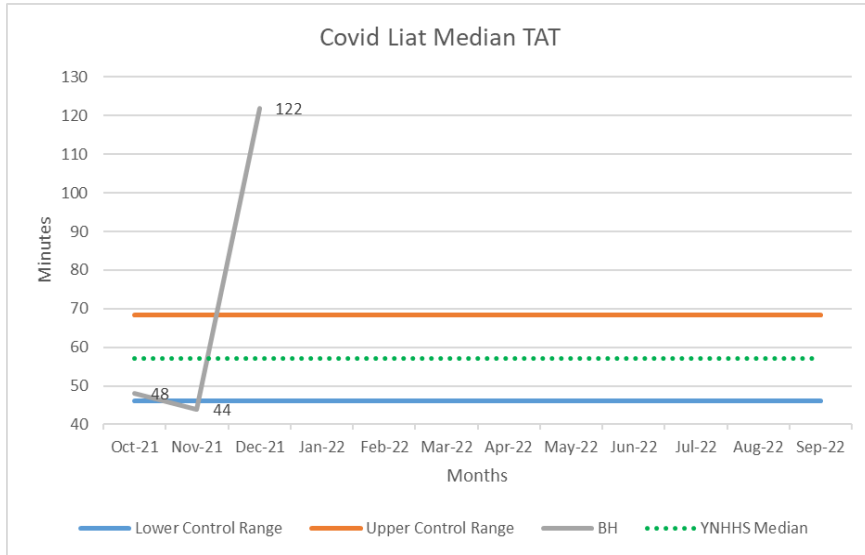
November errors: Manual entry errors (nanosphere & Strep/Legionella Ag)

December Errors: None

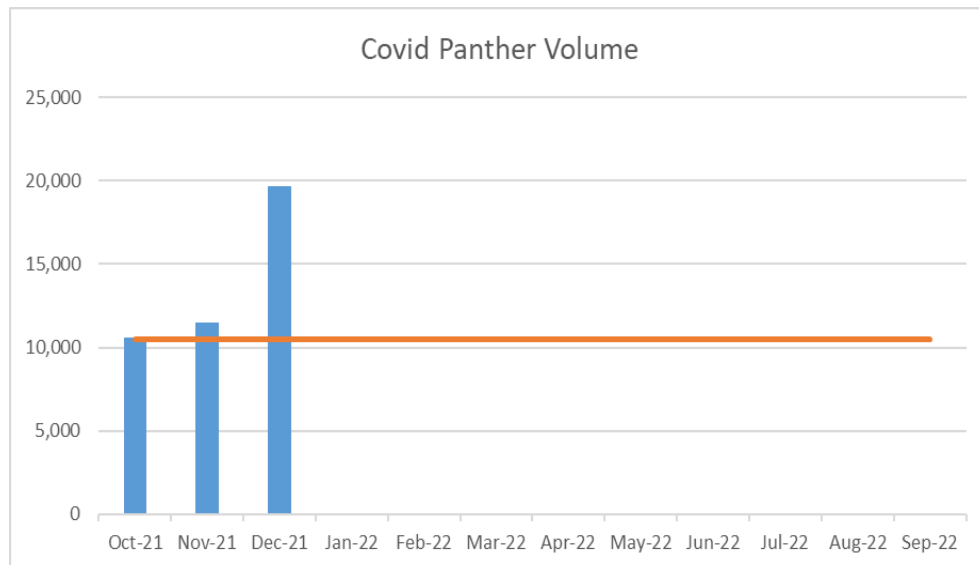
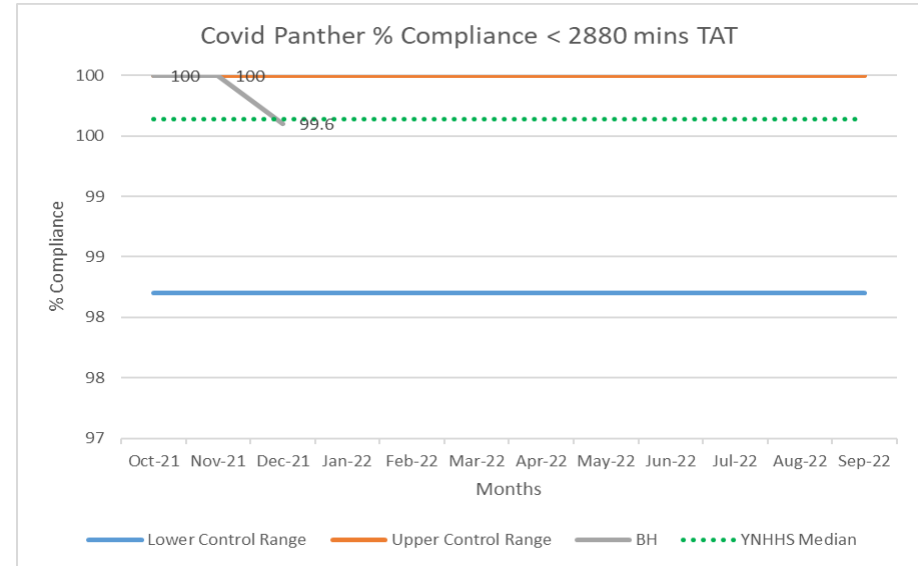
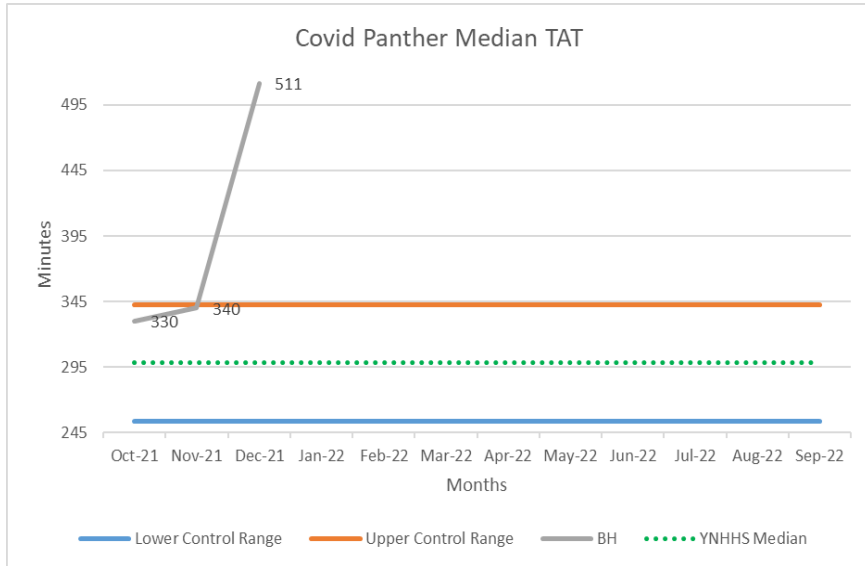
Bridgeport Campus – COVID-19 Cepheid



Bridgeport Campus – COVID Liat



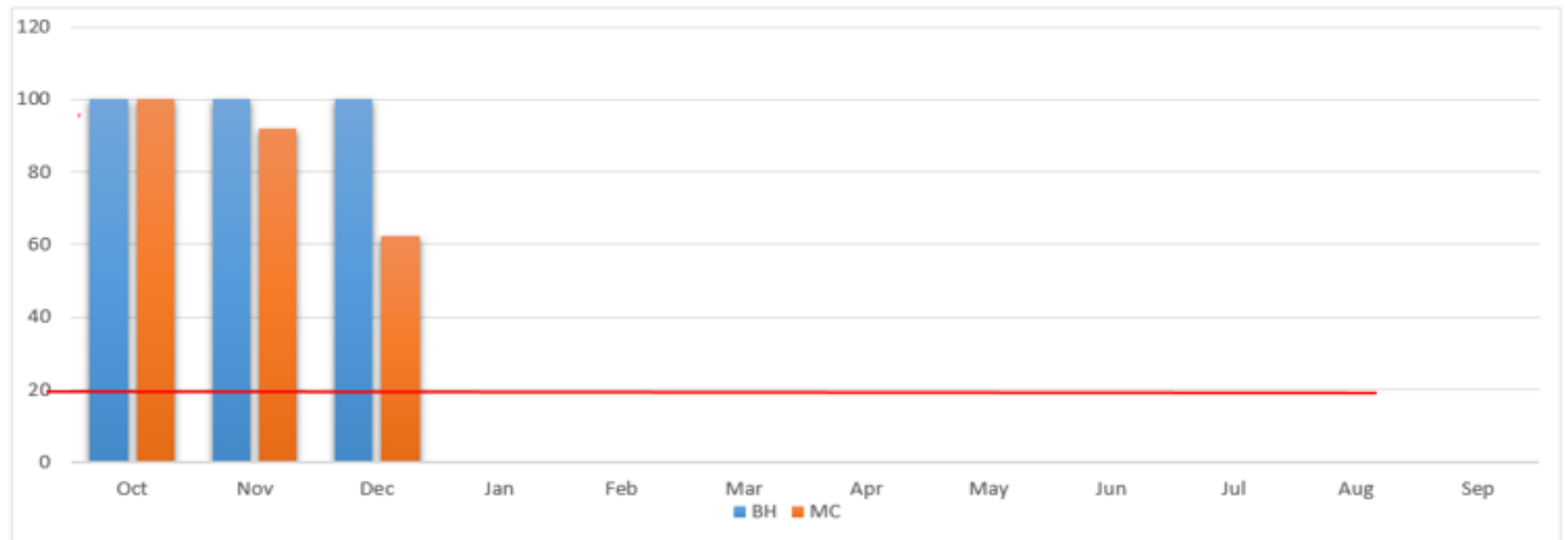
Bridgeport Campus – COVID-19 Panther



Lab General - Bridgeport

Quality Metric	Target	Sample size	Current performance	Previous month	Patient Impact	Corrective action and follow-up	Responsible
CAP PT Turnaround within 30 days	90%	BC 20/20 surveys MC 5/8 surveys C-C AL2-C NB-C	100% 62.5%	100% 92%	None	Benchmark met <u>90 day</u> 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

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



Lab General - Bridgeport

Proficiency Testing Performance BC	98%	218/219 analytes	99.5%	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



21 Mailings with New Evaluations	0 Mailings with Revised Evaluations	0 Analytes with Unsatisfactory PT	0 Analytes with Unsuccessful PT	0 Analytes with Repeat Unsuccessful PT
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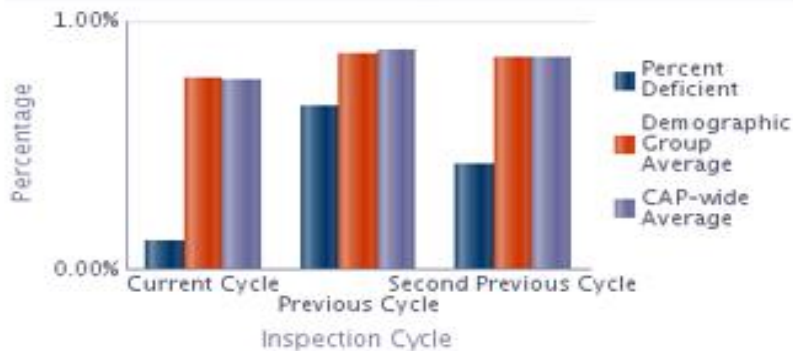
Reporting Year	Acceptable %	Demographic Group Average 	CAP-wide Average
2021	99.83%	99.06%	98.68%
2020	98.76%	98.99%	98.58%
2019	99.35%	99.00%	98.63%

Lab General - Bridgeport

Accreditation Performance Overview


Select View: Graph

Deficient Accreditation Performance by Cycle and Group



Last Accreditation Decision	Date
Accredited	3/8/2021

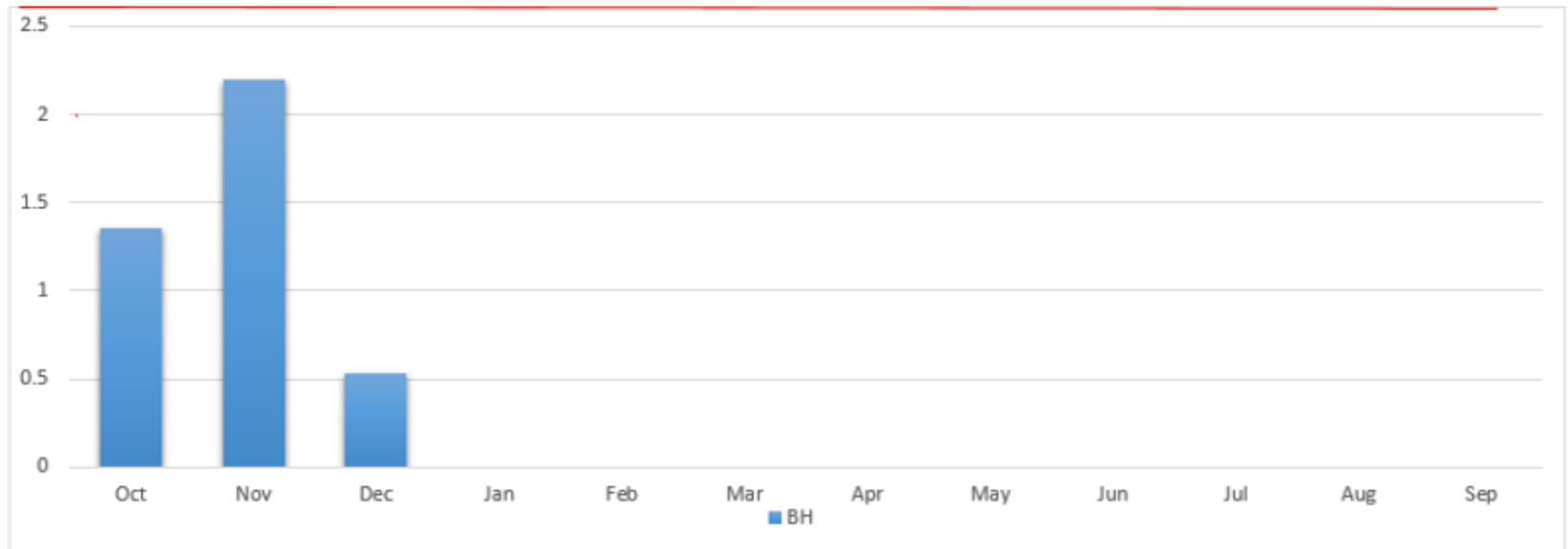
Current Cycle Inspection(s)			
Date	Inspection Type	% Deficient	Recurring Deficiencies
9/25/2020	Routine	0.11	0

Period Name	Percent Deficient	Demographic Group Average 	CAP-wide Average
Current Cycle	0.11%	0.77%	0.76%
Previous Cycle	0.65%	0.86%	0.88%
Second Previous Cycle	0.42%	0.85%	0.85%

Lab General - Bridgeport

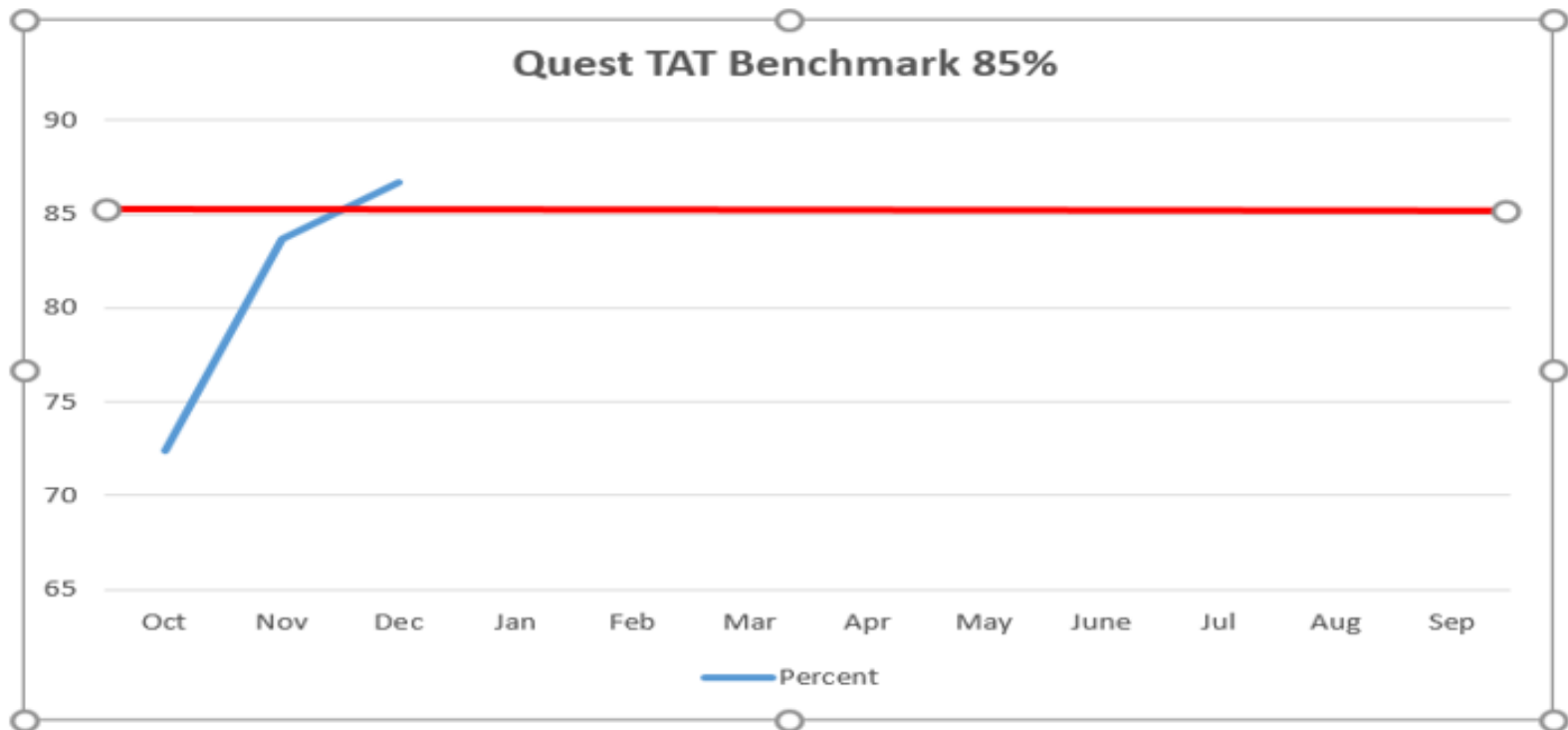
Quality Metric	Target	Sample size	Current performance	Previous month	Patient Impact	Corrective action and follow-up	Responsible
BC Lab Corrected/amended reports	<2.7/10,000 tests	281,918 tests	0.53 Per 10,000 results (0.005%)	2.2 (0.2%)	Corrected reports can lead to adverse patient outcomes	None needed benchmark met	Laboratory administration

Corrected Reports per 10,000 test results
Benchmark <2.7



Lab General - Bridgeport

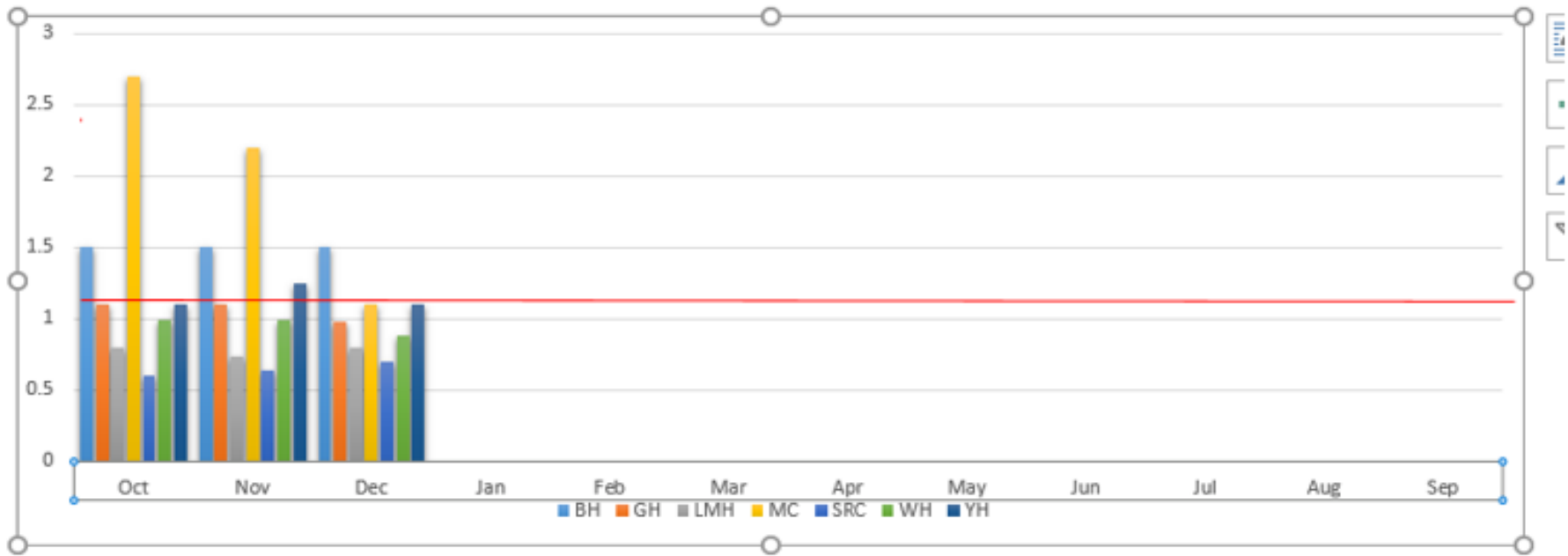
Quality Metric	Target	Sample size	Current performance	Previous month	Patient Impact	Corrective action and follow-up
Quest TAT Top 10 tests by volume	85% On time	391 tests	86.7%%	83.7%	Can cause delays in patient treatment/therapy	Met target Target was lowered to 85% in FY21 Continue increasing test sent to YH and bringing some sendouts inhouse .



Lab General – Bridgeport (Adjusted Specimen Rejection Analysis)

Percent Redraws FY2021

Benchmark < 3.5 %* Specimens Rejected

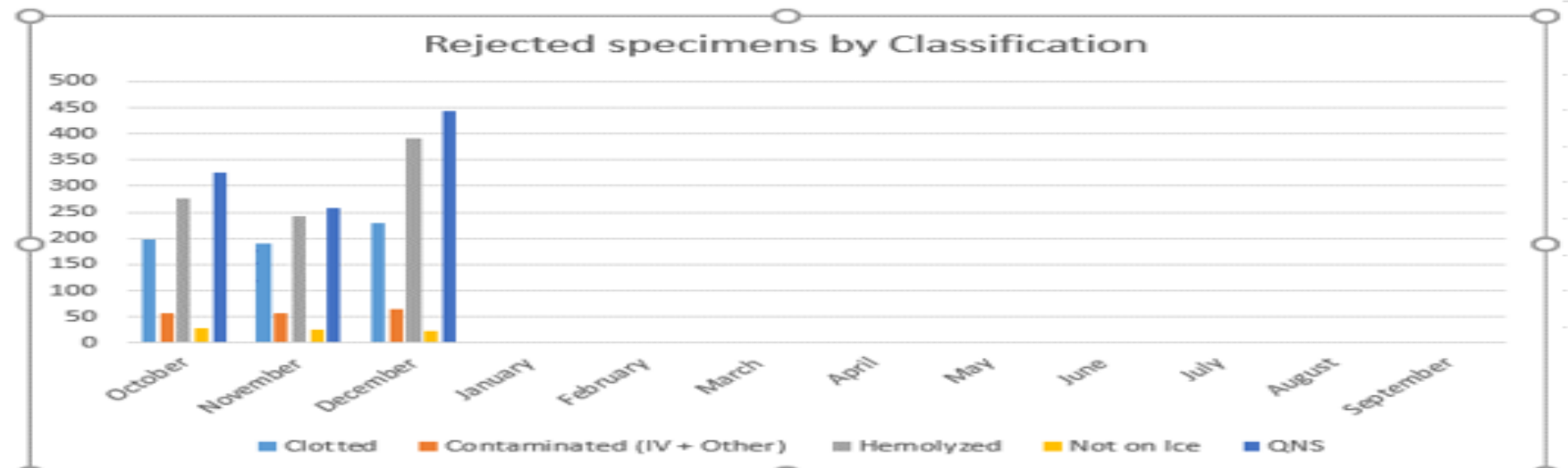


YNHHS Benchmark (1.1% Oct, Nov, Dec 2021)

*Rooney 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
Nov	1.5	1.1	0.74	2.2	0.64	0.99	1.25
Dec	1.5	1	0.8	1.1	0.7	0.88	1.1

Laboratory General - Bridgeport



	Clotted	Contaminated	Hemolyzed	Not on Ice	QNS
October	198	56	276	28	325
November	190	57	243	25	259
December	229	65	391	24	443

QNS Totals

Unit	Dec	Nov	Oct	Sep
ED	115	53	77	108
NE9	21	12	12	25
Burn Unit	7	1	0	5
NW7	57	23	34	31
WT10	28	16	17	23

Events Calendar Task Completion (Both Campuses)

Target=100%

4/4 events completed

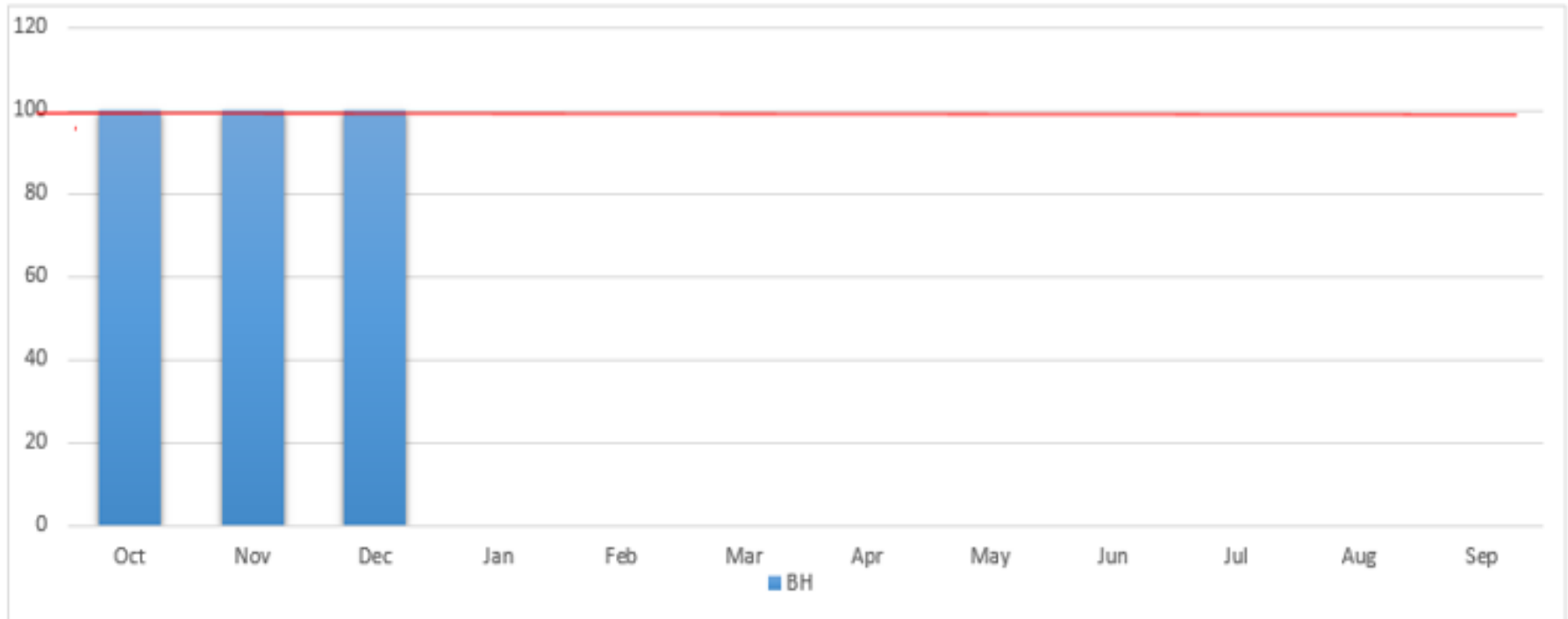
Laboratory General - Bridgeport

Events Calendar Task Completion (Both Campuses)

Target=100%

4/4 events completed

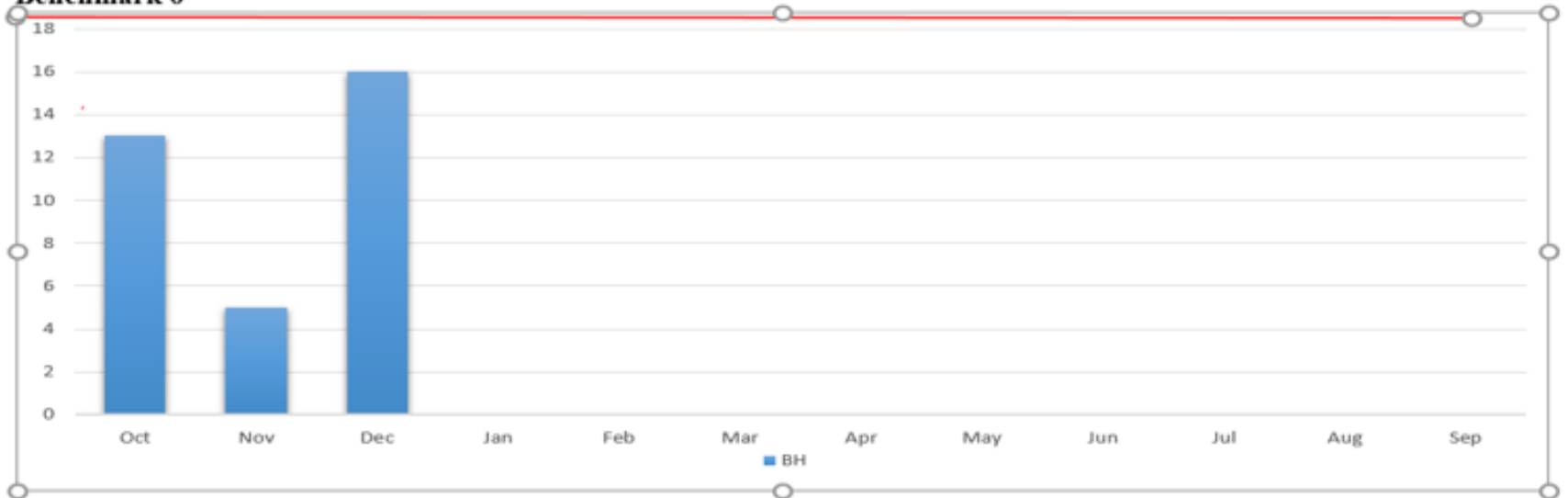
Events Calendar Completed
Benchmark 100%



Laboratory General - Bridgeport

Quality Metric	Target	Sample size	Current performance	Previous month	Patient Impact	Corrective action and follow-up	Responsible Staff
Nonconforming events BC	0	281,918 tests	16 events	5	All 16 events resulted in patients being redrawn/recollected which could lead to delays in treatment	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**



Sample not on ice by Delivery Network

YaleNewHavenHealth

Beaker Lab Rejections Rejection Classification Totals



System Organization	Rejection Classification	Test Cancellation Date		Grand Total
		2021 Q4	December	
BH	Collection Issue: Not on Ice		25	25
L&M	Collection Issue: Not on Ice		1	1
WH	Collection Issue: Not on Ice		2	2
YNHH	Collection Issue: Not on Ice		58	58
Grand Total			86	86

Select Timeframe
Last Full Month ▼

Begin Date
5/14/2019

End Date
5/15/2019

Delivery Network
(Multiple values) ▼

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	7	5	9
MICU	4		3	4	3	7	4	1	7	2	1	0	0	2.91
NW7	3		0	2	1	3	0	1	2	1	3	1	0	1.27
SICU	3.33		1	1	0	4	2	2	0	3	0	1	2	1.45
WT10	2.33		1	1	0	2	2	2	1	6	0	1	3	1.73
WT7	2.17		0	0	1	3	0	0	1	1	1	1	1	0.82
WT8	1.17		3	3	1	2	3	1	1	2	0	1	3	1.82
			19	22	15	32	16	18	17	27	13	12	14	

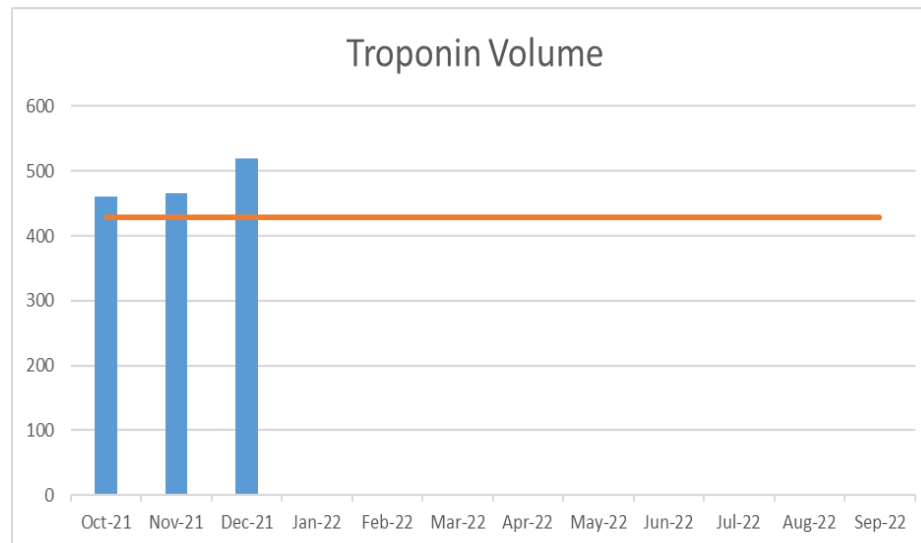
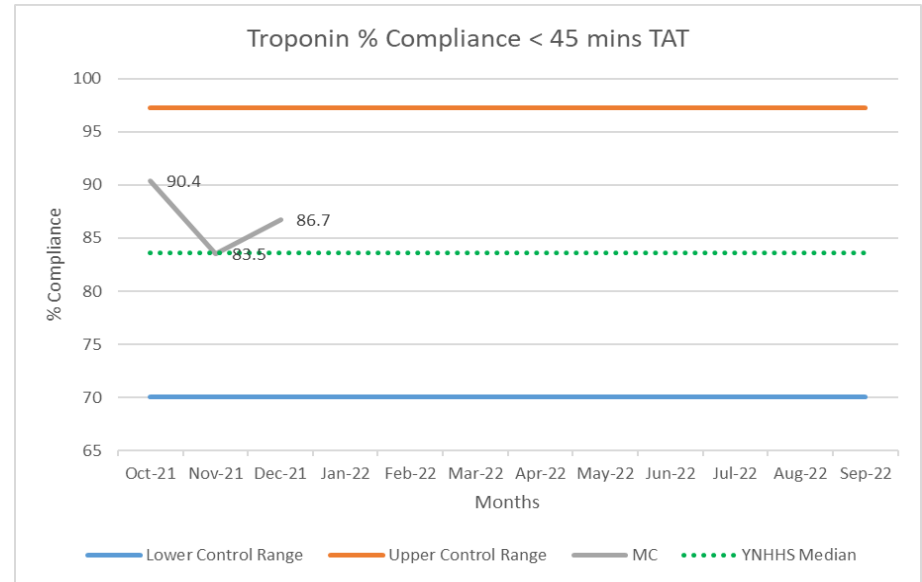
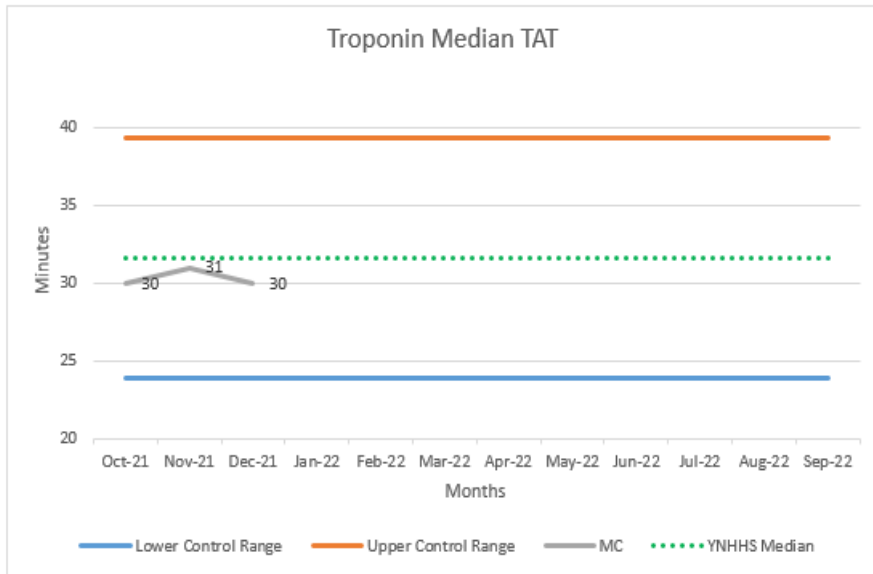
Overall Tests:

Row Labels	Count of Specimen ID
AMMONIA	10
BLOOD GAS, VENOUS	1
CALCIUM, IONIZED, WHOLE BLOOD	7
METHYLMALONIC ACID (YH BH)	4
PTH, INTACT (BH)	3
(blank)	
Grand Total	25

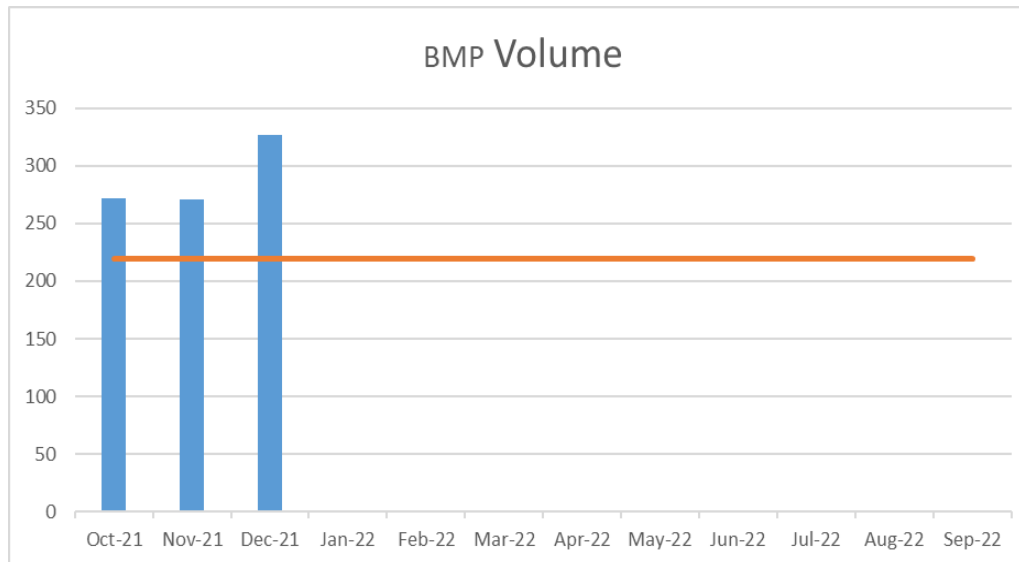
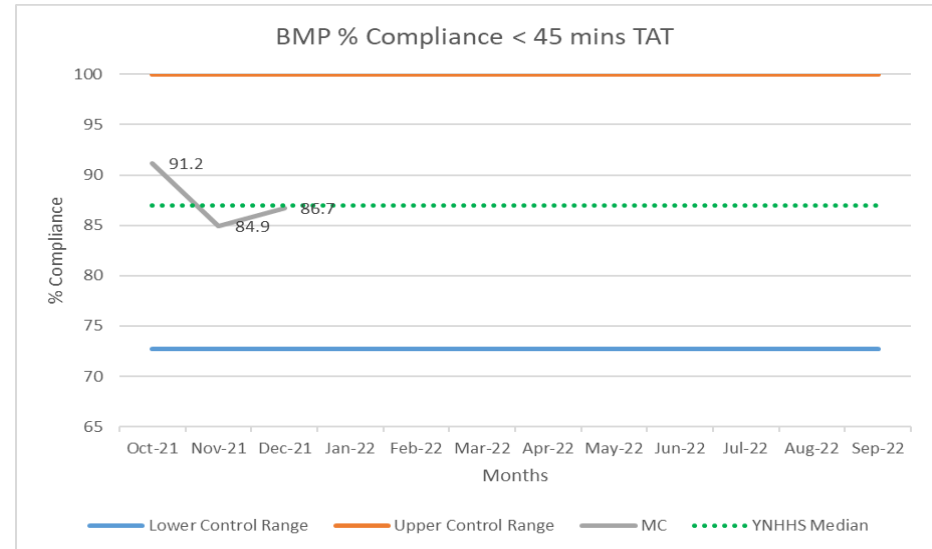
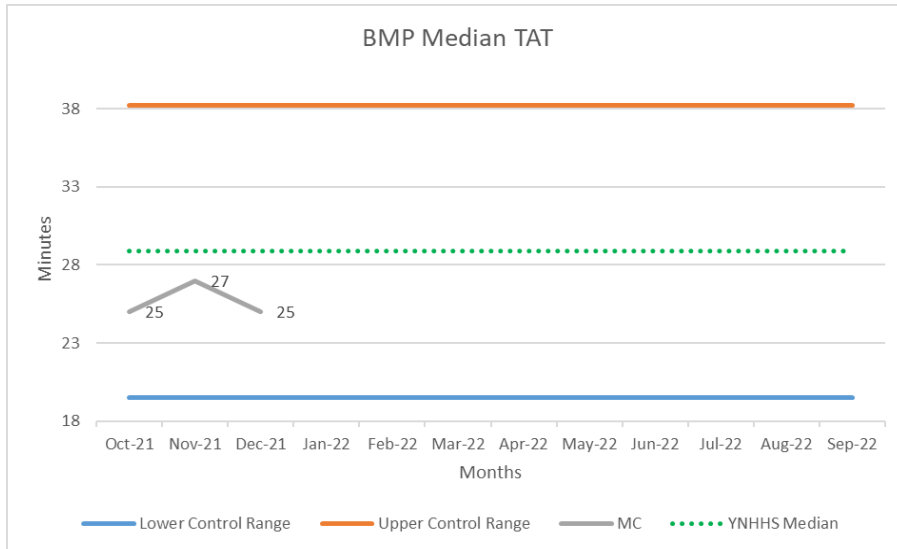
Milford Campus ED TAT Ordered to Collected and Collected to Received

	Oct 1 - 31, 2021		Nov 1 - 30, 2021		Dec 1 - 31, 2021	
	Ordered to Collected	Collected to Received	Ordered to Collected	Collected to Received	Ordered to Collected	Collected to Received
Troponin	18	9	19	9	19	10
BMP	20	10	18	9	20	11
CBC	18	11	16	11	21	11
D-dimer	13.5	12	13	11	21	12
PTINR	16	12	14	11	18	12
Type and Screen	16	11	16.5	11	18.5	15
COVID Cepheid	14	12	13	12	17	12

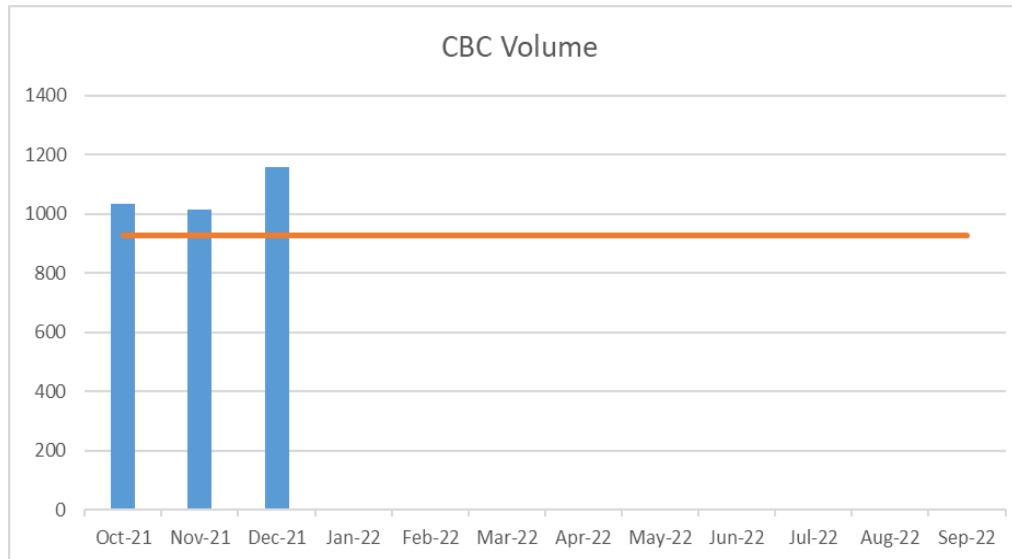
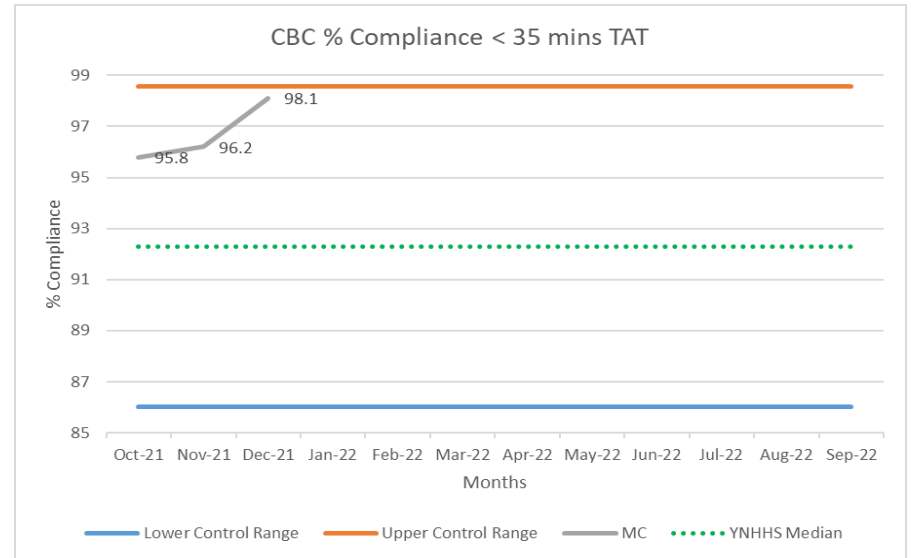
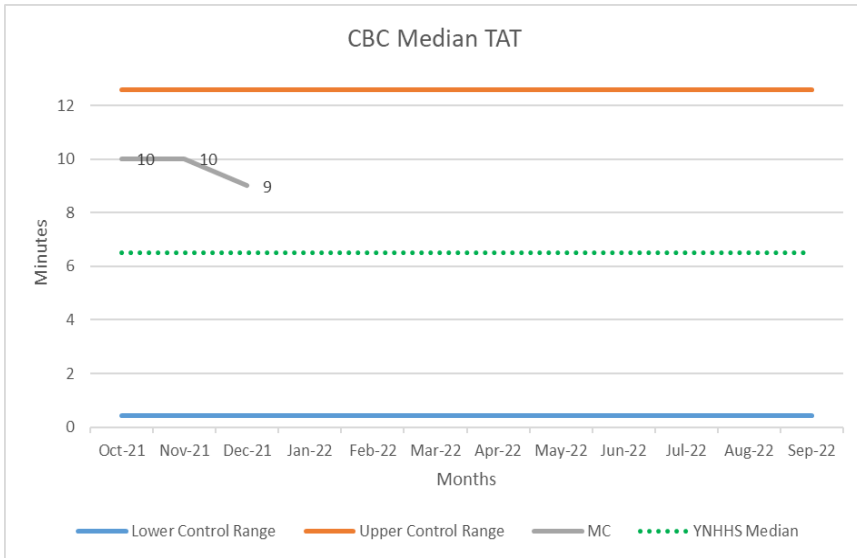
Milford Campus – Troponin ED TAT



Milford Campus – Basic Metabolic Panel (BMP) ED TAT

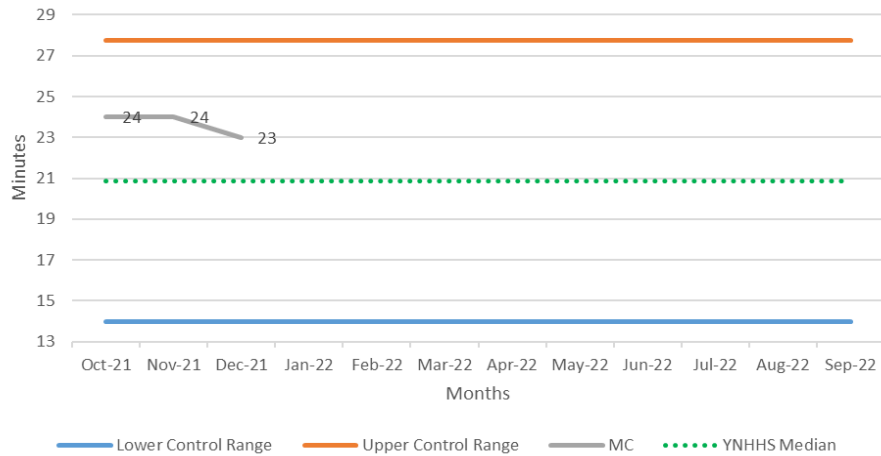


Milford Campus – Complete Blood Count (CBC) ED TAT

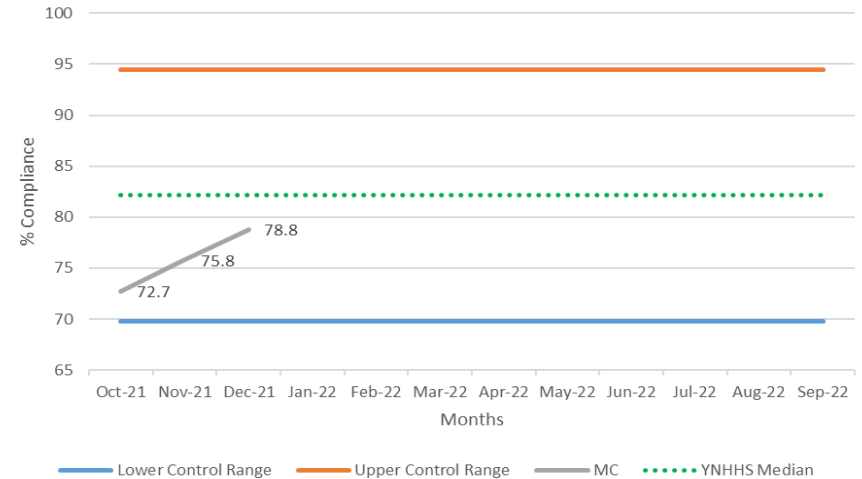


Milford Campus – D-dimer ED TAT

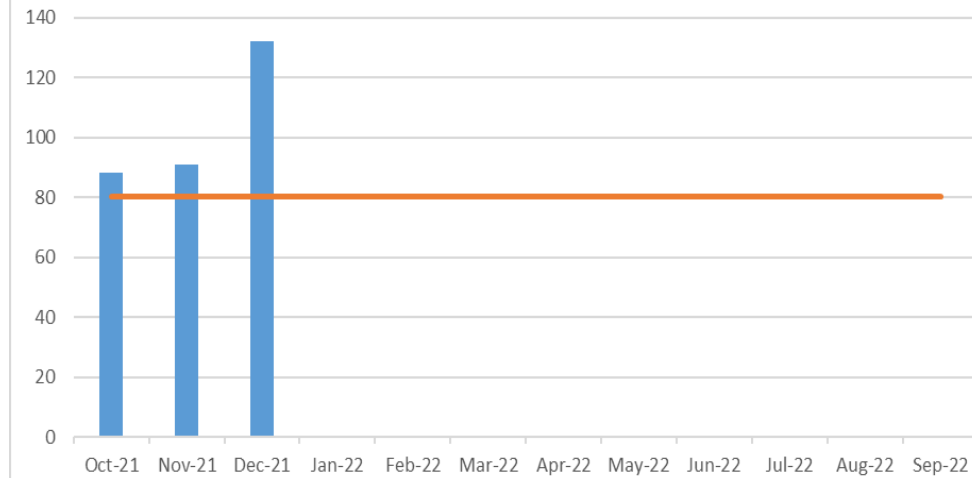
D-dimer Median TAT



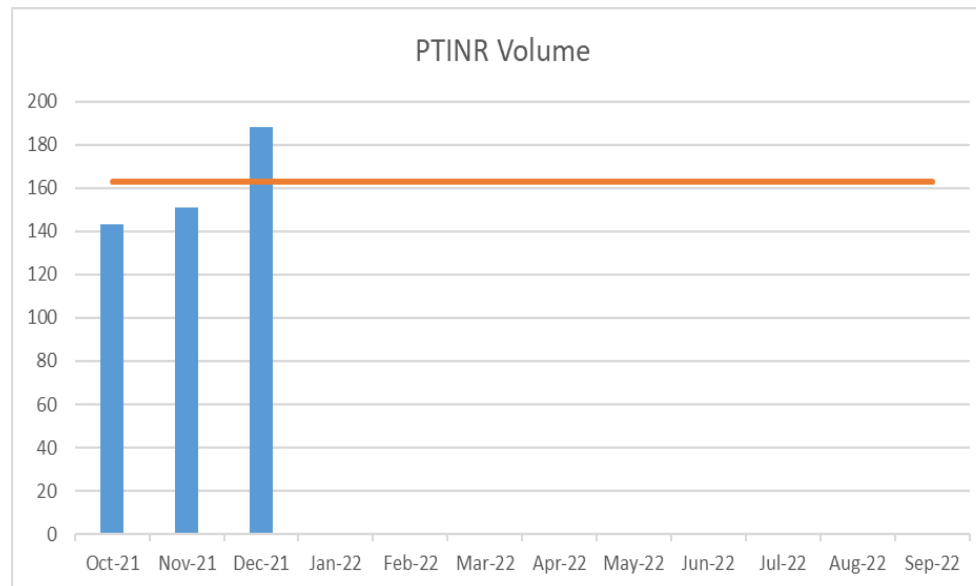
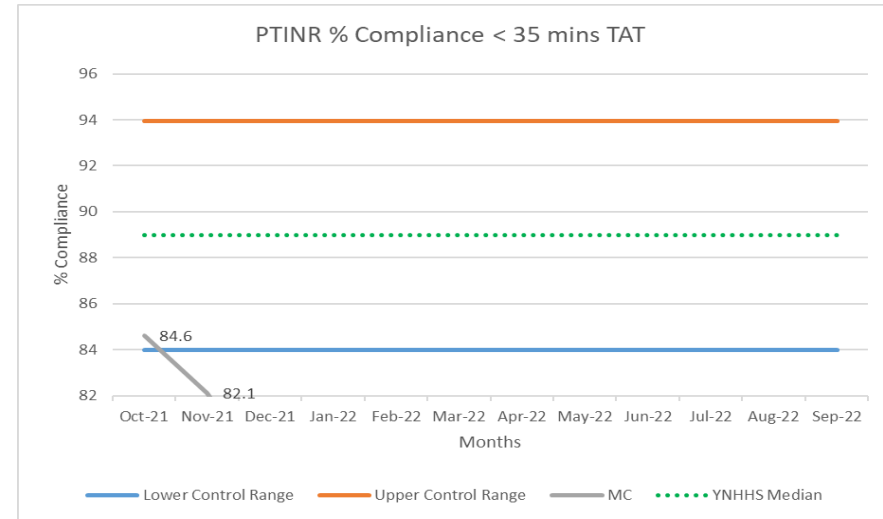
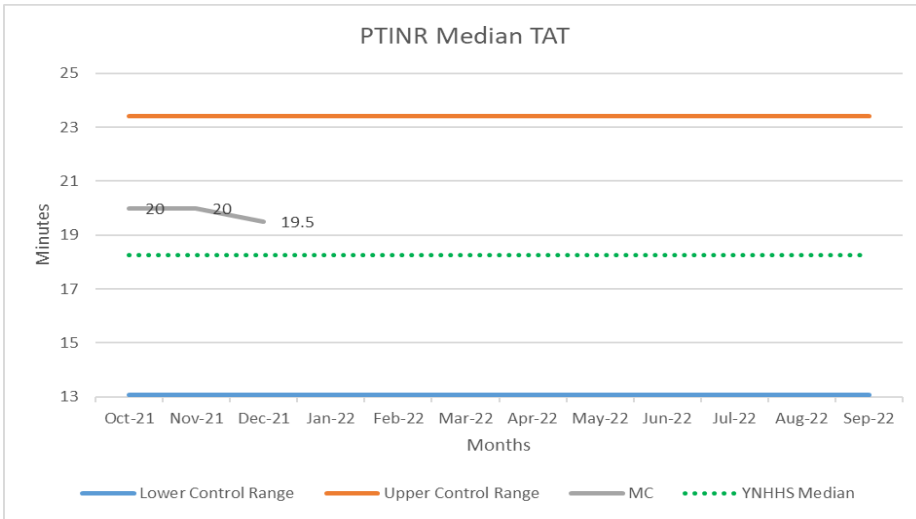
D-dimer % Compliance < 35 mins TAT



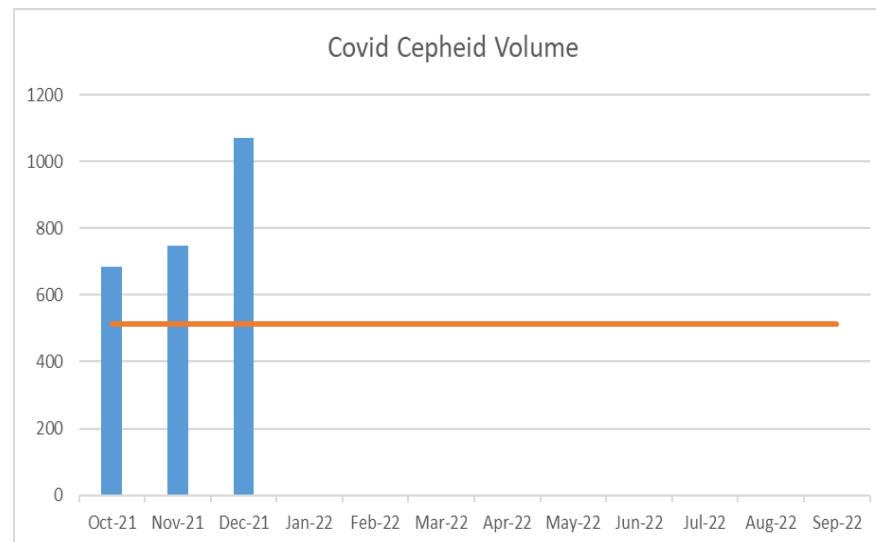
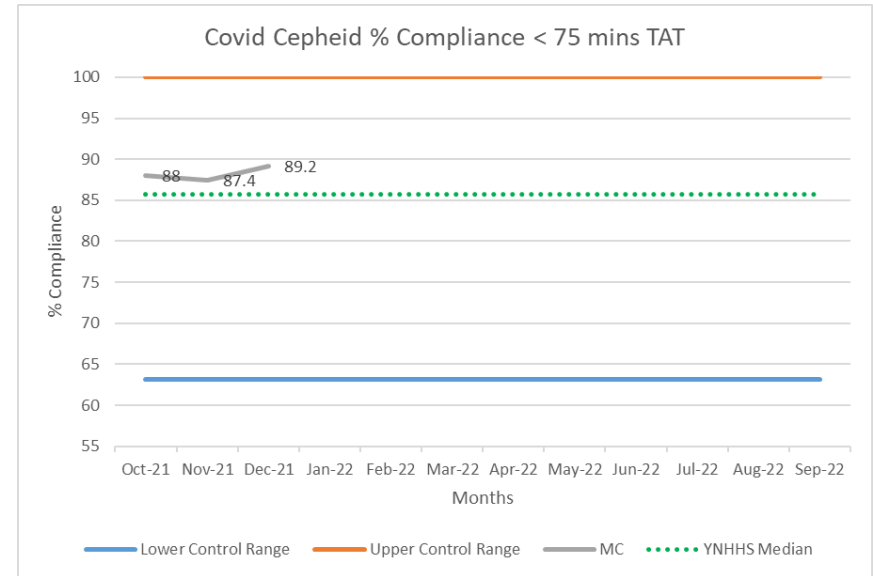
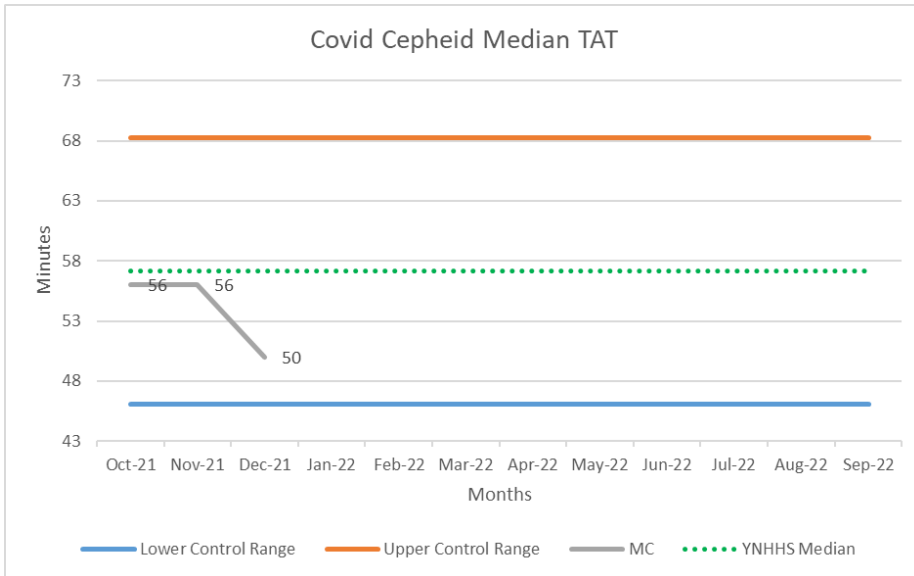
D-dimer Volume



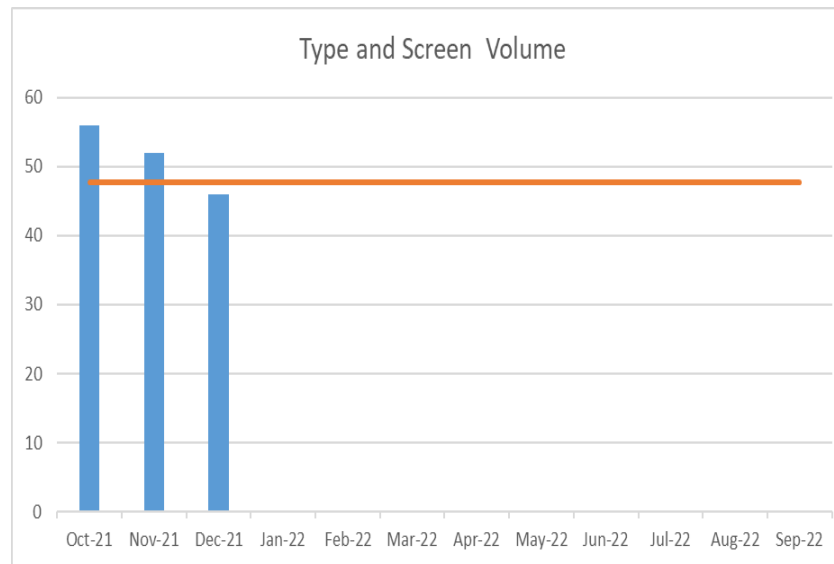
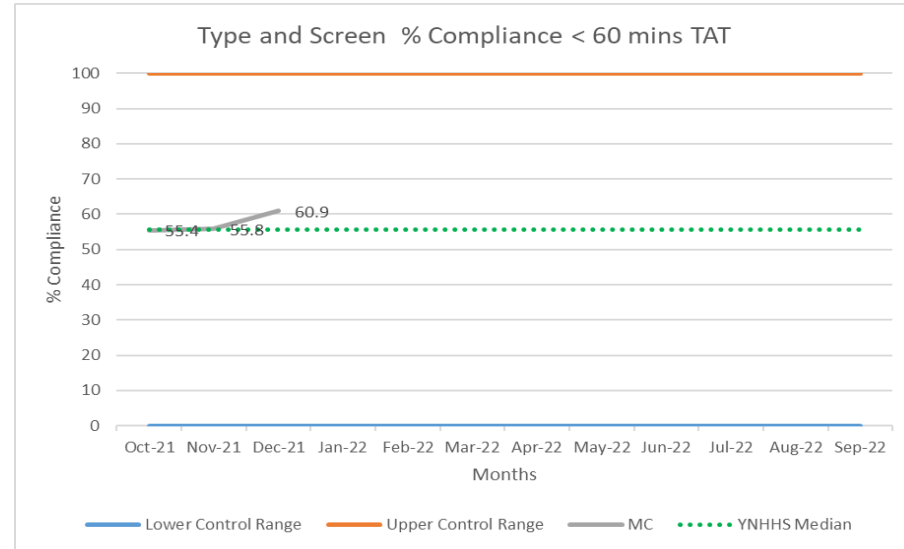
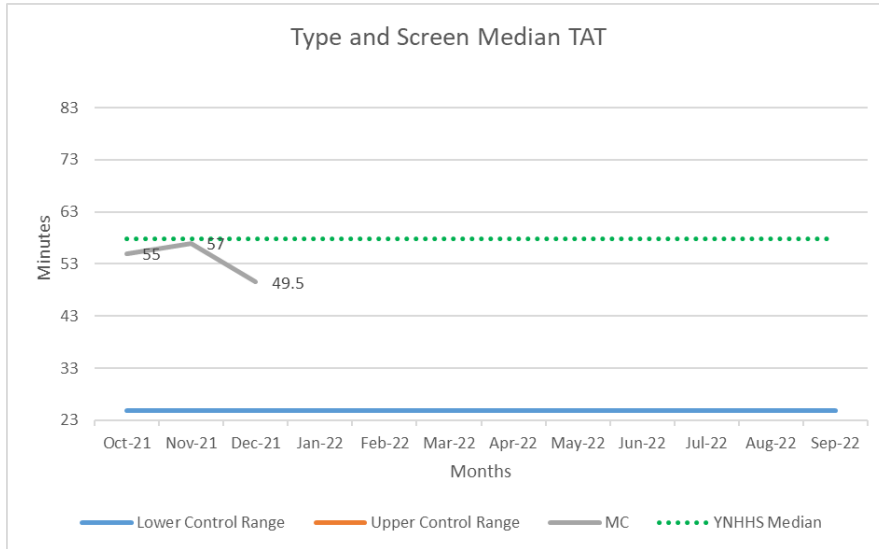
Milford Campus – PTINR ED TAT



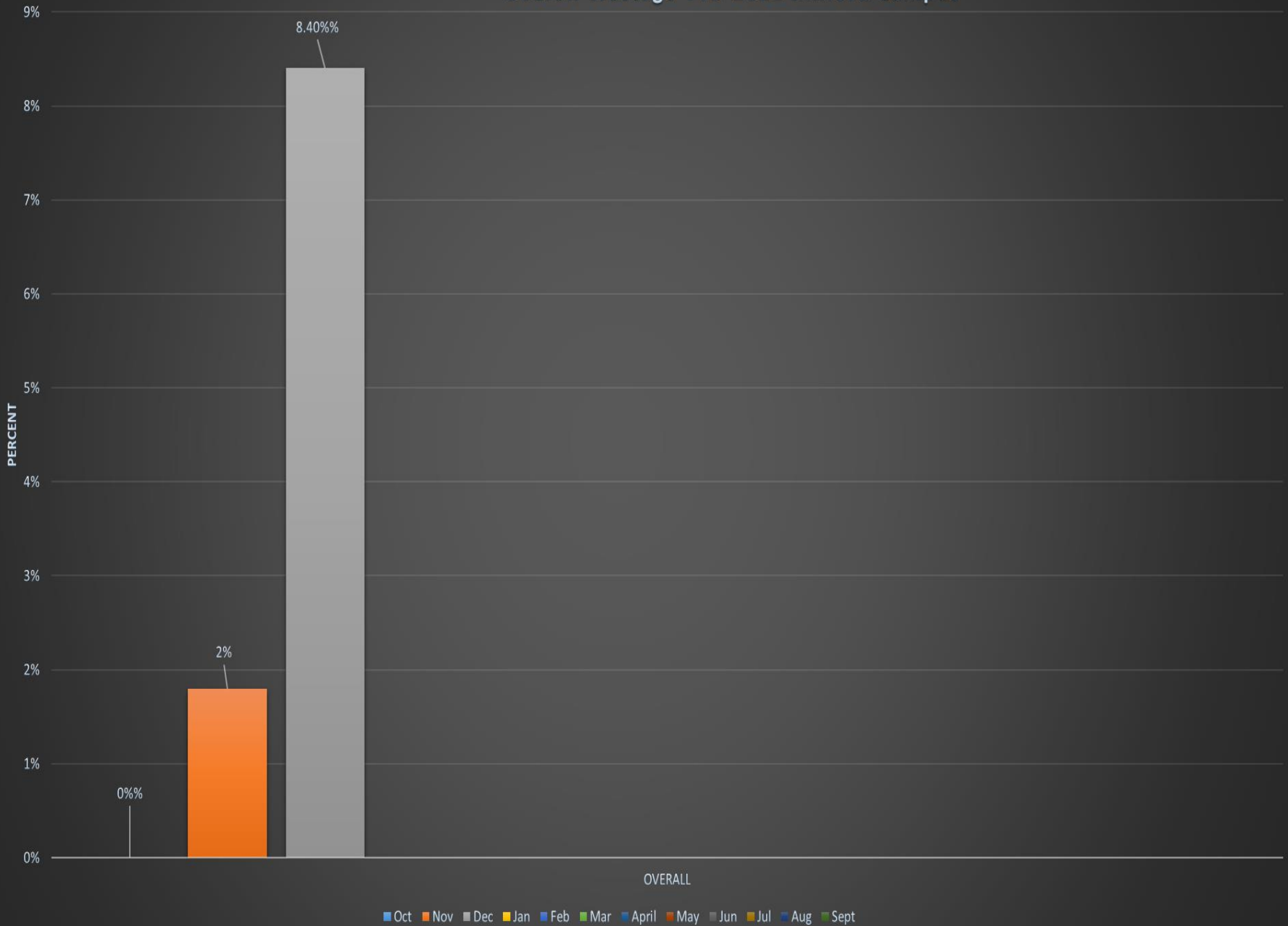
Milford Campus – COVID Cepheid PCR ED TAT



Milford Campus – Type and Screen ED TAT



Overall Wastage YTD 2022 Milford Campus



Lab General - Milford

Aspect of Care	Threshold Expected/Target	Sample Size	Data Source	Achieved Current month	Previous month	Corrective Action	Patient Impact	Follow up and evaluation	Staff responsible
Non-Conforming Events	0	# Tests 20,553	Manual Collection	8	7	All corrected reports have been investigated. Retraining of staff is ongoing	none	Each corrected report is reviewed by lead tech or manager. Responsible staff are coached regarding the correct procedure. This month 5 corrections were due to data entry errors, 3 due to instrument malfunction.	Supervisors
Proficiency Testing	98% CAP Q Probe data	# Analytes	CAP	100%	100%	None required	None	None needed	Supervisors
Laboratory corrected reports	2.7/10,000	# tests 20,553	Manual collection	3.8	2.0	Individual coaching/counseling, and/or documented verbal warning.	none	Manual entry errors accounted for most corrected reports, technical errors produced the rest.	Supervisors
Laboratory Injuries	0	Employees n=33	IMC	0	0		none	None needed	Supervisors
Redraws		# Tests 20,553						"Other" category expanded using Tableau to capture Incorrect specimen type, Duplicate order, and Incorrect order by provider. "QNS" category divided into QNS and unable to obtain specimen.	Nursing, Providers & Phlebotomy
Clotted	0			4	10				
Contamination (IV & other)	0		Beaker+ Tableau	4	3				
Hemolyzed (RN)	0			58	34				
(Phleb)	0			1	4				
Not on ice	0			4	2				
QNS	0			15	11				
Wrong container	0			5	5				
Duplicate order	0			2	0				
Incorrect order by provider	0			3	9				
Unable to obtain specimen.	0			9	10				
Incorrect specimen type.	0			5	5				
Critical Call TAT	60 min		Beaker	6.0	11.9	Formatted report to show true TAT	none	Critical call TAT report settings in Epic have been modified to show the interval between report availability and when the comm log is completed. Prior settings underreported the TAT. Still under System threshold.	Supervisors