



UHNBC Emergency Department and the Lab Quality Improvement Project

AIM STATEMENT

To improve the variability in the time it takes for physicians to receive their lab work results by 30% by April 2019 in the UHNBC Emergency Department.

► BACKGROUND

Physicians and others have raised concerns with the lab's response time to providing blood work results in the Emergency Department (ED) at UHNBC. Lab staff have not had significant increases to the number of full time equivalents in the department over a number of years despite large increases in the workload. This has led to an increasingly stressful work environment and stresses to other parts of the hospital system.

► PROBLEM STATEMENT

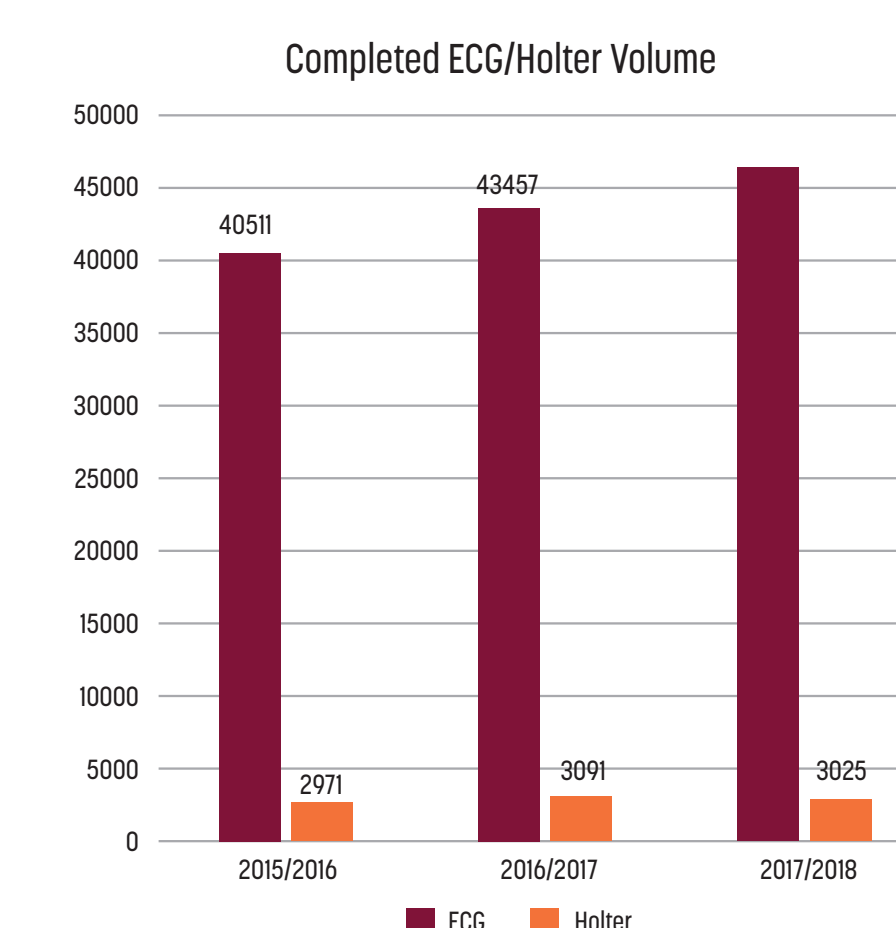
There was too much variability in the amount of time it took to get lab results once the ED physicians ordered them. It could take anywhere between 36 minutes and 5 hours to get lab results. The median amounts of time for each step in the process, from the labs being ordered to the labs being verified and ready for the physicians, is seen in the table to the right.

Doc orders Lab	Lab entered into the System	Lab Collected Sample	Sample Received in Laboratory	Sample on MPA	Sample Analyzed	Lab Verified
6 min	9 min	9.5 min	6 min	39 min	4 min	1 hour 21 min

	2016	2017	2018	Difference from 2016 - 2018	% Change
Blood	1089063	1095899	1148934	59871	5.5%
Body Fluid	2390	2845	3169	779	32.6%
CSF	757	663	905	148	19.6%
Hold	4635	7202	8521	3886	83.8%
Whole Blood	19577	21258	23021	3444	17.6%

In the last 3 years, there was a significant increase in the workload for the UHNBC lab department, as can be seen in the table above.

In addition to the blood work that the lab assistants needed to collect, they were also responsible for performing the ECGs that were ordered. The volume of ECG orders at UHNBC has gone up by 6000/year in the last 3 years.

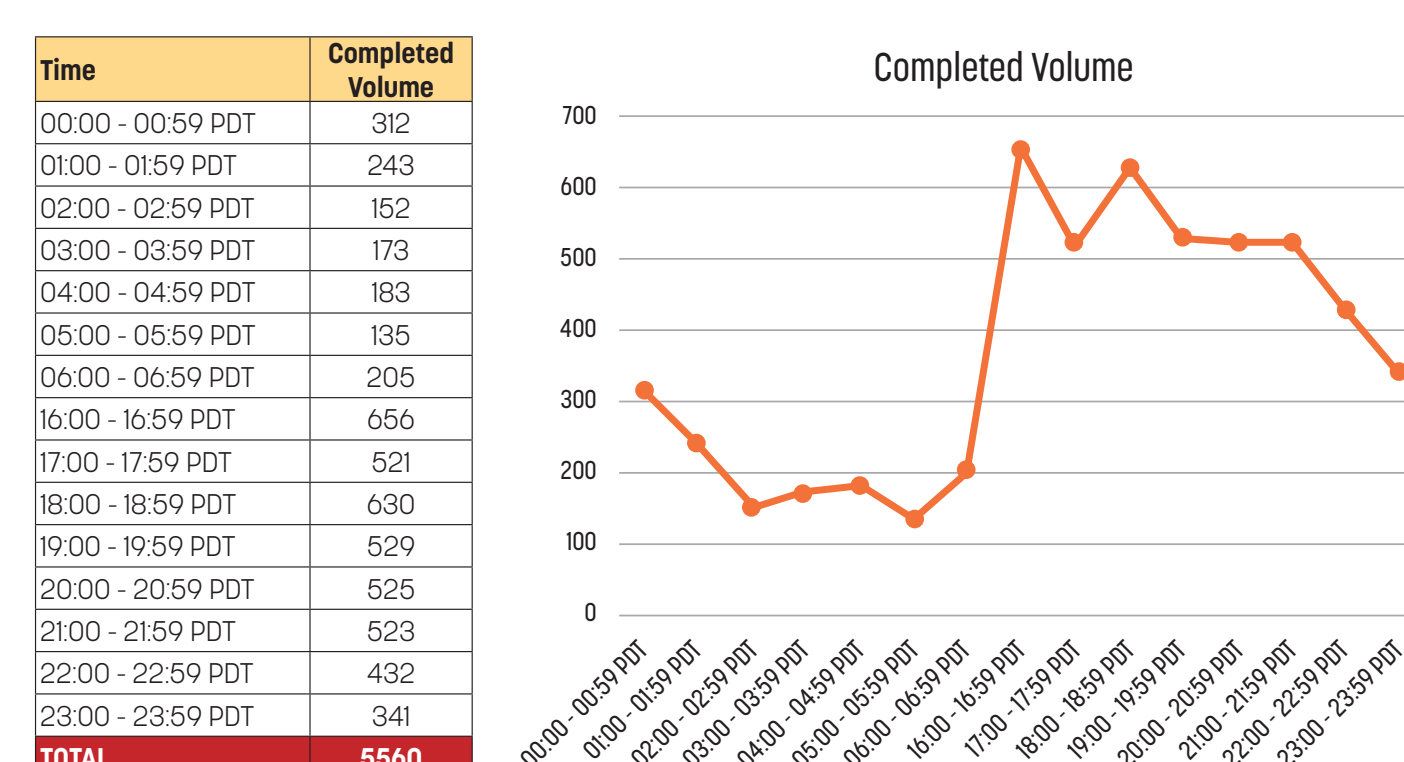


► CHANGE IDEAS

To trial having two extra lab assistants; one would help improve lab response time in the ED and the other would help with earlier sample collection throughout the hospital. The ED would be supported with an extra lab assistant during peak ECG times based on analysis of ECG ordering patterns:

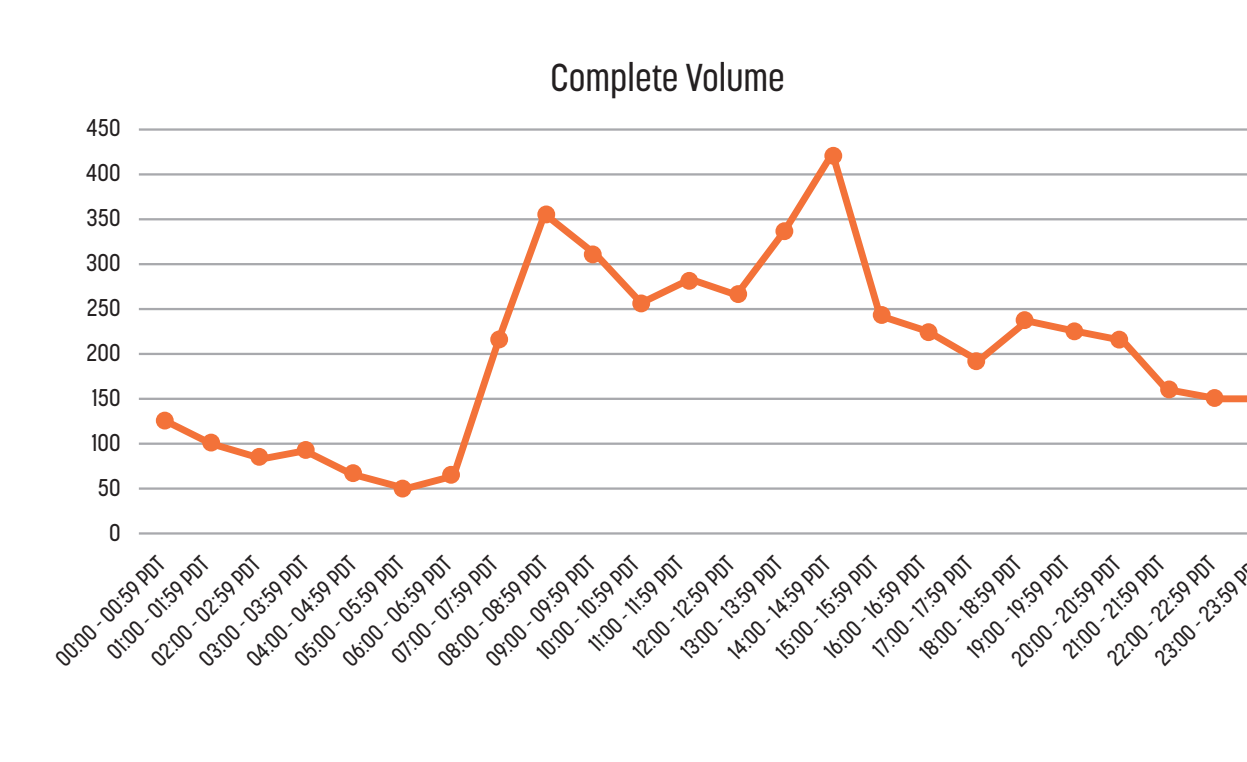
- 1500-2300 Monday to Friday / 1300-2100 on Weekends

Monday to Friday ECG Volumes



Saturday & Sunday ECG Volumes

Time	Completed Volume
00:00 - 00:59 PDT	128
01:00 - 01:59 PDT	104
02:00 - 02:59 PDT	87
03:00 - 03:59 PDT	93
04:00 - 04:59 PDT	68
05:00 - 05:59 PDT	51
06:00 - 06:59 PDT	65
07:00 - 07:59 PDT	221
08:00 - 08:59 PDT	356
09:00 - 09:59 PDT	311
10:00 - 10:59 PDT	258
11:00 - 11:59 PDT	283
12:00 - 12:59 PDT	267
13:00 - 13:59 PDT	338
14:00 - 14:59 PDT	424
15:00 - 15:59 PDT	244
16:00 - 16:59 PDT	226
17:00 - 17:59 PDT	193
18:00 - 18:59 PDT	240
19:00 - 19:59 PDT	226
20:00 - 20:59 PDT	218
21:00 - 21:59 PDT	101
22:00 - 22:59 PDT	152
23:00 - 23:59 PDT	151
TOTAL	4855



A morning lab assistant would support early discharges from the rest of the hospital and the ED.

- 0600-1000 (7 days a week)

Also noteworthy: having extra lab assistants ensures that lab technologists remain in the lab to expedite sample processing, rather than being called away to help with sample collections.

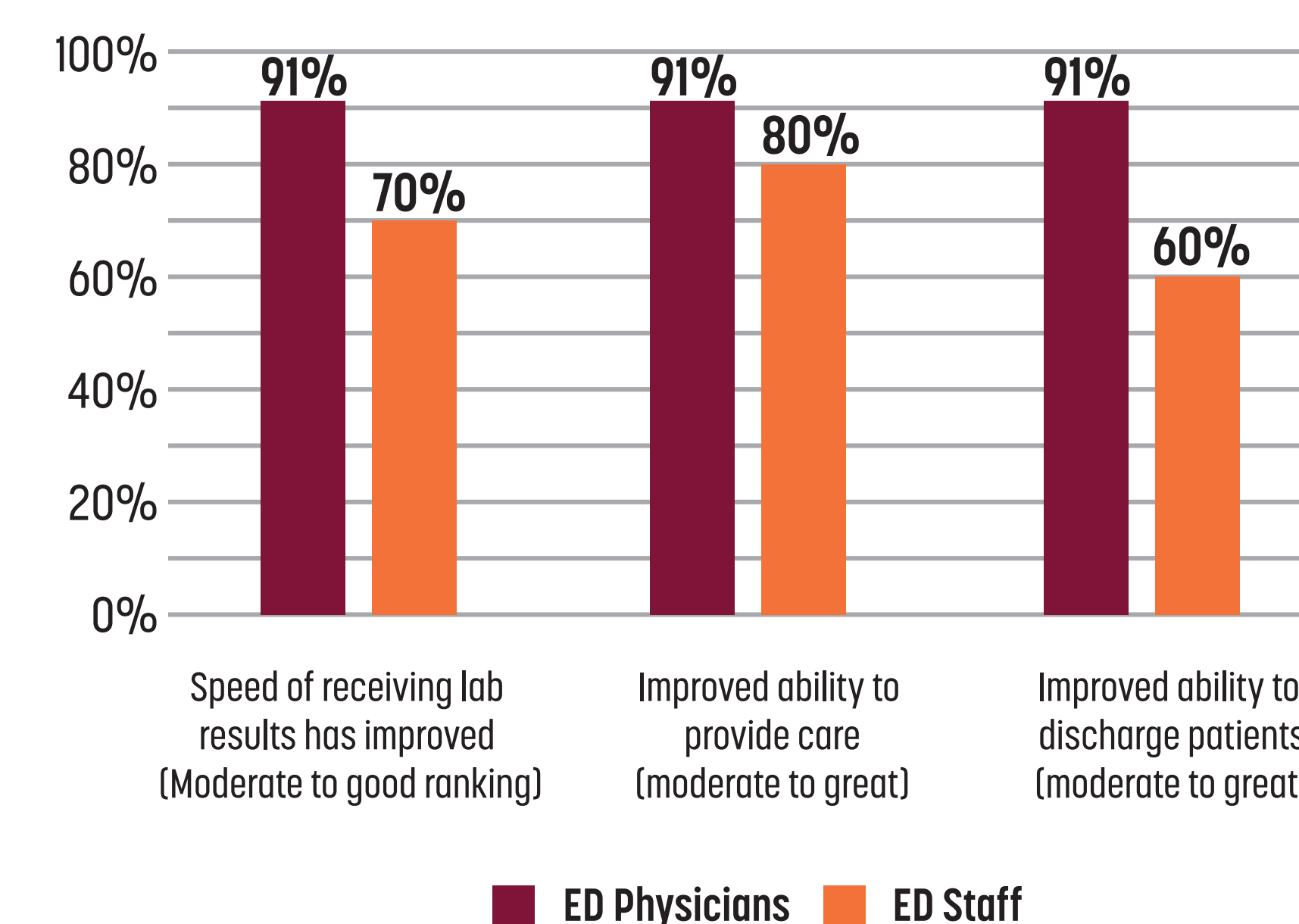
► RESULTS

The variability in the amount of time it took to get lab work results improved to a range of 35 minutes to 3.5 hours. There was improvement seen in the percentage of cases done in a specified time period across the board.

Percentage Cases	Baseline	Pilot
Less than 1 hour	21%	38%
Less than 1 hour 30 min	68%	75%
Great than 2 hours	9%	6%
Greater than 2.5 hours	3%	1%

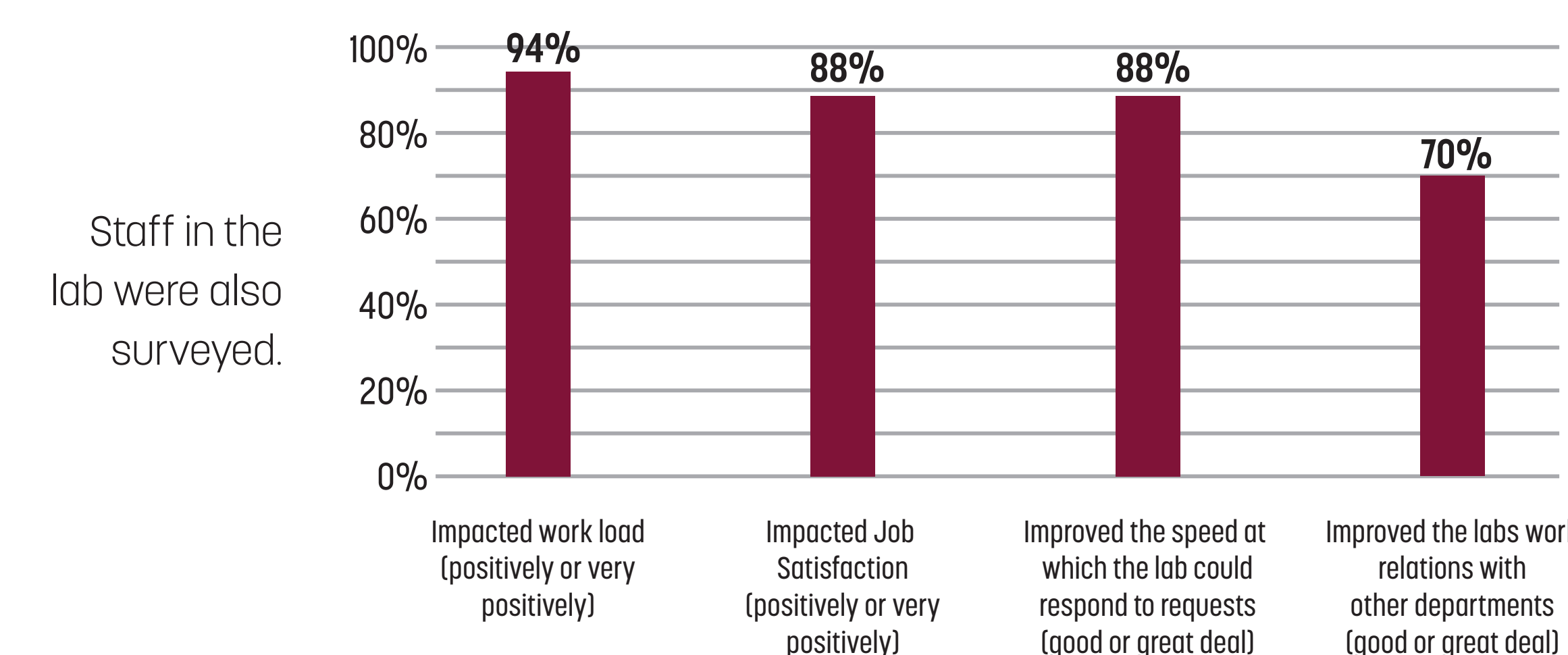
In addition to the ED, the entire hospital benefitted from the trial because morning lab work was available earlier to help physicians make decisions about discharge while doing their morning rounds. On the surgical floors complete lab work was available for review by 0809 (median time) which was an improvement from 0935 (median time) prior to the trial.

Pilot Feedback from the Emergency Department



Staff and physicians were surveyed and asked about the trial.

The Pilot's Impact on the Lab Staff



Staff in the lab were also surveyed.

► NEXT STEPS / SUSTAINING THE GAINS

The project was hugely successful with physicians and staff; a business case is being developed to sustain the changes.

NEXT STEPS....

1. Improving the percentage of ED labs available in under 1 hour
2. Ensuring lab results are available in the early morning to enable earlier discharges, improve hospital-wide patient flow and help with overcapacity issues
3. Continue to examine the optimal times of day to have extra lab assistant shifts

► TEAM MEMBERS

Dr. Kathleen Cuniffe (ED Physician), Dr. Melissa Dymond (ED Physician), Roma Toor (Diagnostics Manager), Darcy Hamel (Manager High Intervention), Caroline Perrin (Specimen Logistics Charge Technician), Laura Elsenheimer (Chief Technologist Laboratory UHNBC), Shelley Movold (Physician Quality Improvement Coach)

PRIMARY EMAIL CONTACT:

cunniffek@gmail.com

SECONDARY EMAIL CONTACT:

shelley.movold@northernhealth.ca