RHA Central

INTERCEPTORS
Quality Improvement Project
Report Out

June 18, 2012

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Define

What process did we look at?

The INTERCEPTORS Team's LEAN Project looked at the following processes:

- Are INRs completed on clients on Coumadin presenting in the ER and subsequently admitted?
- Is the communication of the information (lab results) occurring and in a timely manner?

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Define

What were the main perceived problems with the process?

- Inconsistent ordering of INRs on clients on Coumadin presenting to the ER
- Lack of communication at transition points between the ER and admission to the Unit
- Lack of communication of urgency of lab results and subsequent treatment

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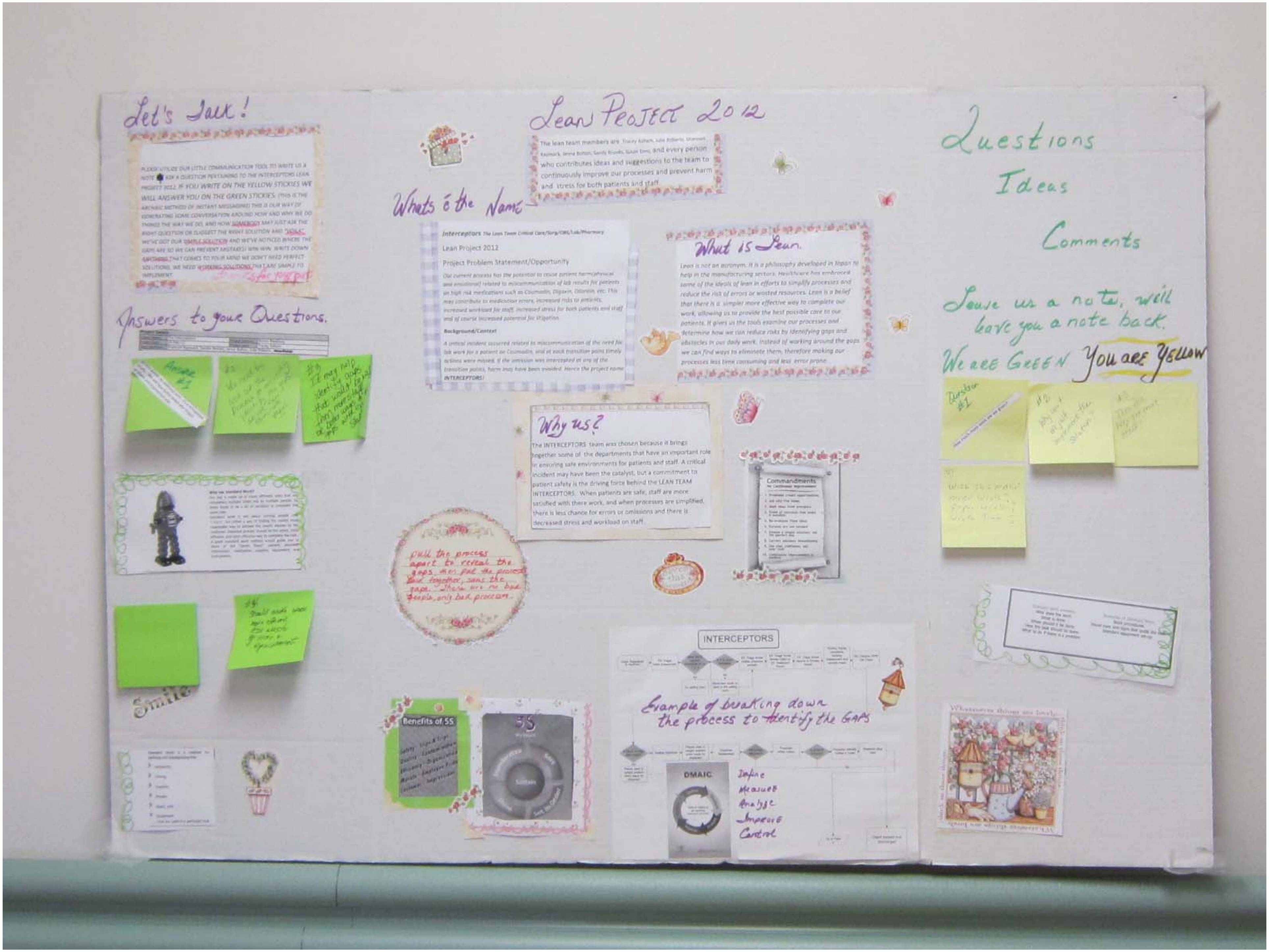
Let's Talk!
Answers to your Questions.
Lean Project 2012
and every person who contributes ideas and suggestions to the team to continuously improve our processes and prevent harm and stress for both patients and staff.
Whats ē the Name
Lean Project 2012
Project Problem Statement/Opportunity
Background/Context
What is Lean.
Why us?
The INTERCEPTORS team was chosen because it brings together some of the departments that have an important role in ensuring safe environments for patients and staff. A critical incident may have been the catalyst, but a commitment to patient safety is the driving force behind the LEAN TEAM INTERCEPTORS. When patients are safe, staff are more satisfied with there work, and when processes are simplified, there is less chance for errors or omissions and there is decreased stress and workload on staff.
pull the process apart to reveal the gaps, then put the process back together, sans the gaps. There are no bad people, only bad process.
Commandments
INTERCEPTORS
Example of breaking down the process to identify the GAPS
DMAIC
Define
Measure
Analyze
Improve
Control
Benefits of 5S
5S
Smile
Questions
Ideas
Comments
Leave us a note, will leave you a note back.
We are GREEN You are YELLOW

Measure

What did we measure and why? How are the measures related to the process?

The Team did a retrospective audit for a 3 month time period:

1. Audit parameters:

- Clients on Coumadin who presented to the ER and were subsequently admitted
- Random sampling of admissions to determine the % of clients on high risk medications

2. Measurements:

- What percentage had INRs completed?
- Was communication to the ER and physicians in a timely manner?

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Measurement Sheet

MEASUREMENT DATA WORKSHEET

PARAMETERS:

- Measurement Timeframe: First 50 ER admissions in Feb to Surg, Med, ICU,
- High Alert meds include Coumadin (C), Digoxin (D), anticonvulsants (A)

PROCESS:

- Susan to request HIS to pull charts for March 20, 21
- Auditing by Tracey, Julie, Shannon, and Amy Foster, completed by end of March.
- Audit data forwarded to Susan for analysis, charts by April 11 Analyze/improve mtg

QUESTIONS TO BE ANSWERED:

- % of time pt admitted and results are not available when leaving ER
- Time order written til lab draws, time lab called to drawn, time to received in the lab, time results reported
- # of times pts on high alert med and corresponding labwork not ordered and/or completed
- % of lab results identified as critical

	Date	Client ID#	Admitted to Unit Name	Time admitted to the Unit	On high risk med?	Relevant Labwork ordered for high alert meds		Routine labwork ordered	Time Ordered	Stat vs Urgent	Time results completed in lab	Time results available in ER	Time results available on the ward	Type of result i.e. Critical, Abnormal, Normal	Date & Time physician follow up order written	Date & Time follow up order carried out
	EX: Feb 2	12345	Surg	1315	A	y		na	1300	U	1325	1340	1500	c	1515	Feb 3 @900
1		1945														
2		4239														
3		6576														
4		7280														
5		10712														
6		11083														
7		13288														

Analyze

What story did our measures tell us about our system?

1. The measurements confirmed that INRs are done consistently on clients on Coumadin who present to the ER and are admitted.
2. The measurements revealed a gap in the documentation of times that the communication had occurred.

Did the measures validate what we initially thought the problem was?

The measures did not validate either of our initial hypothesis:

1. That INRs were not ordered consistently on Coumadin clients
2. That documentation in the record would reveal the time of communication

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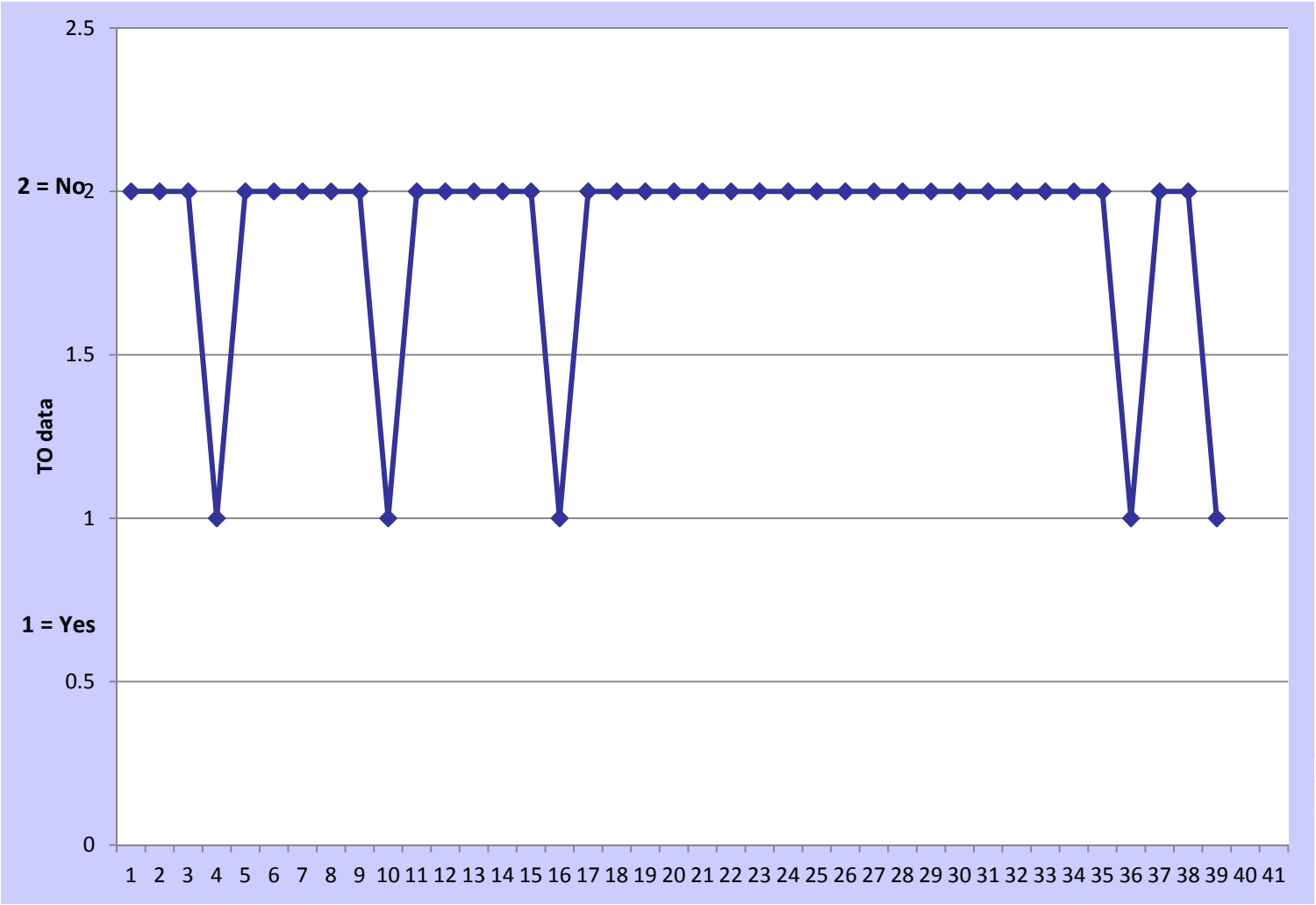
of times Lab Order time documented



2 Means NO; 1 Means Yes

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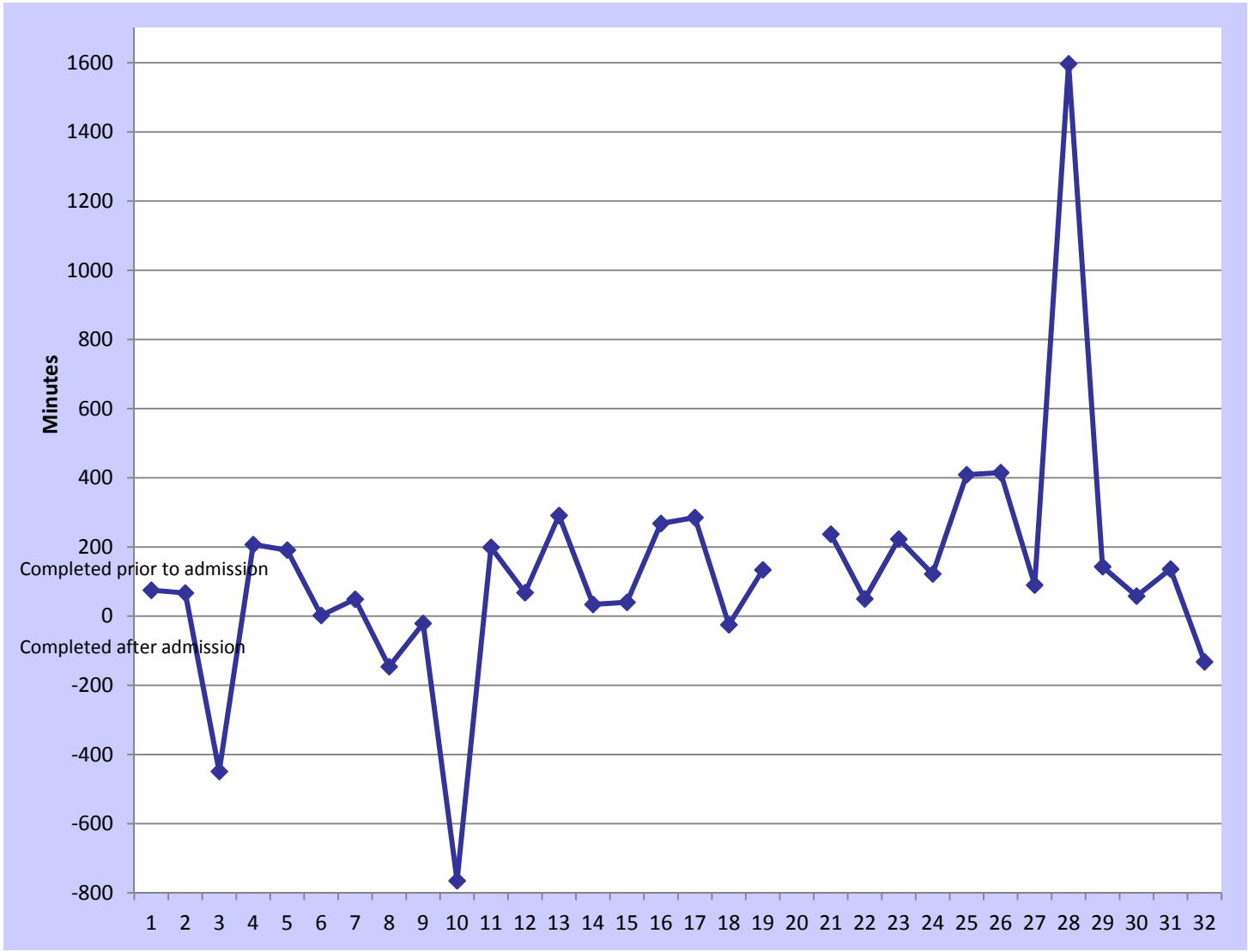
Results completed by Lab prior/after Admission

(unable to measure time received in ER/Unit due to lack of documentation)



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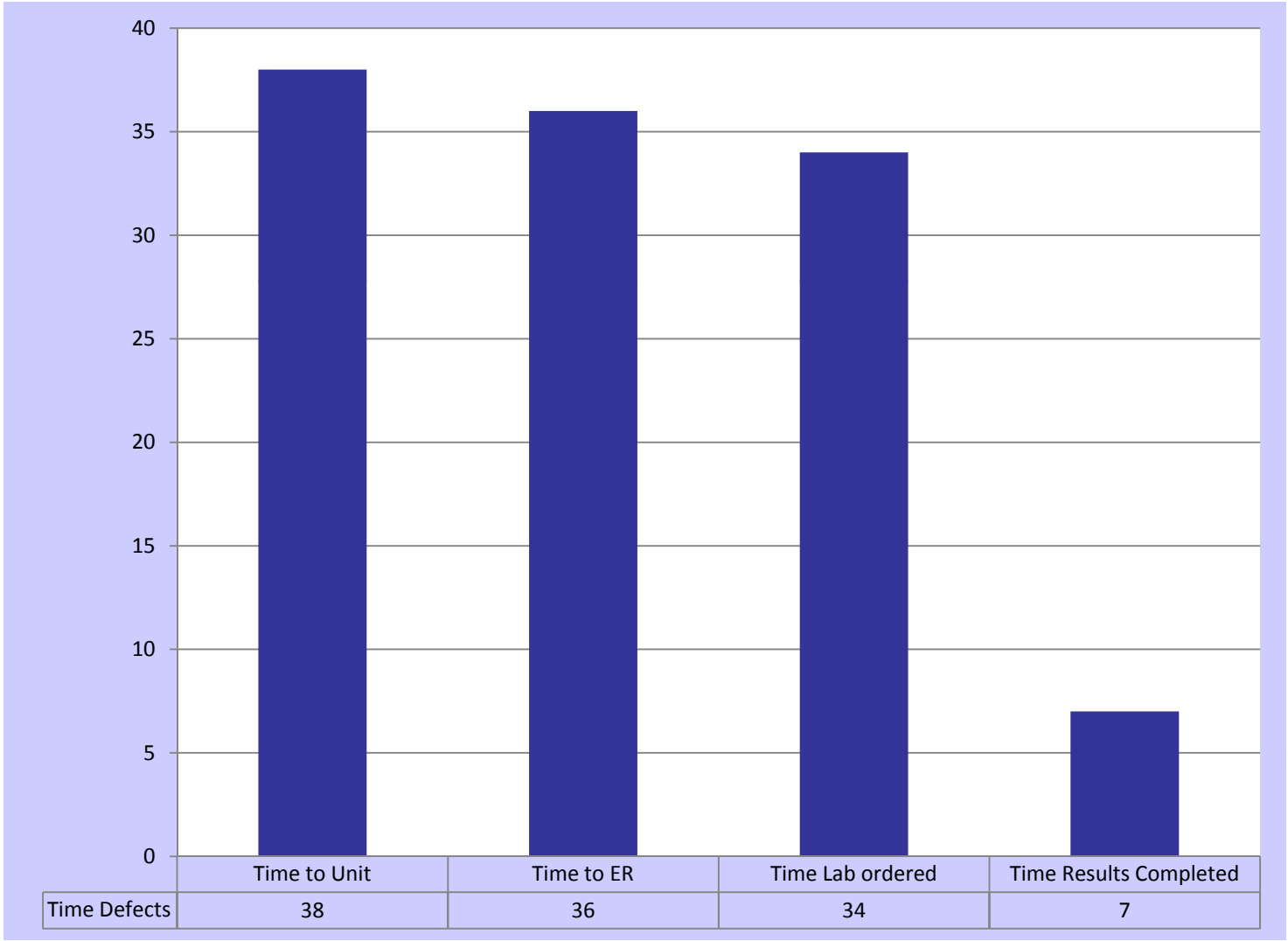
of Documentation of Times Defects

(Stat vs Urgent,Time Lab Called, and Time Results Reviewed not available initially)
Based on 39 Admissions from ER



	Time to Unit	Time to ER	Time Lab ordered	Time Results Completed
Time Defects	38	36	34	7

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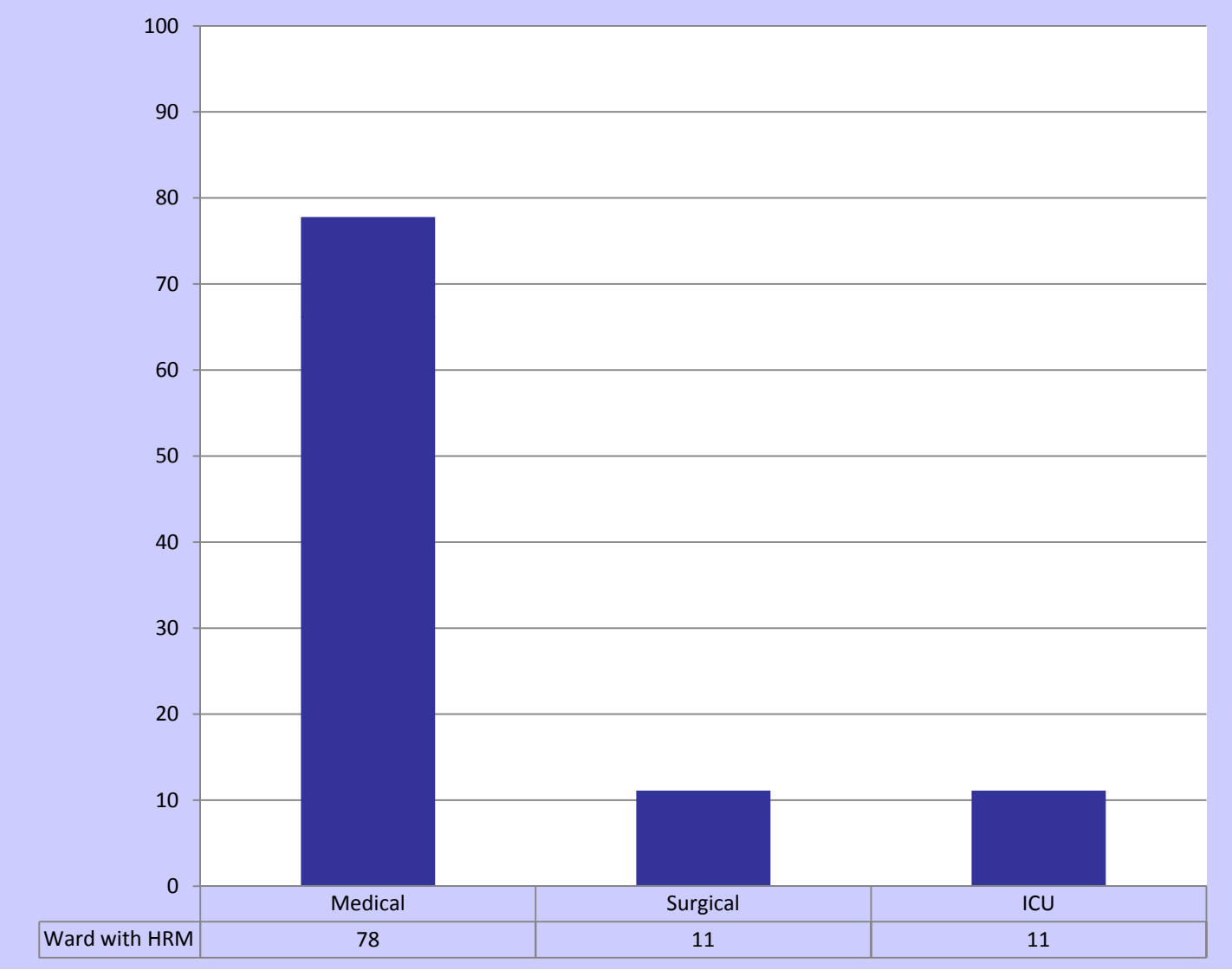
% of High Risk Med clients per Unit



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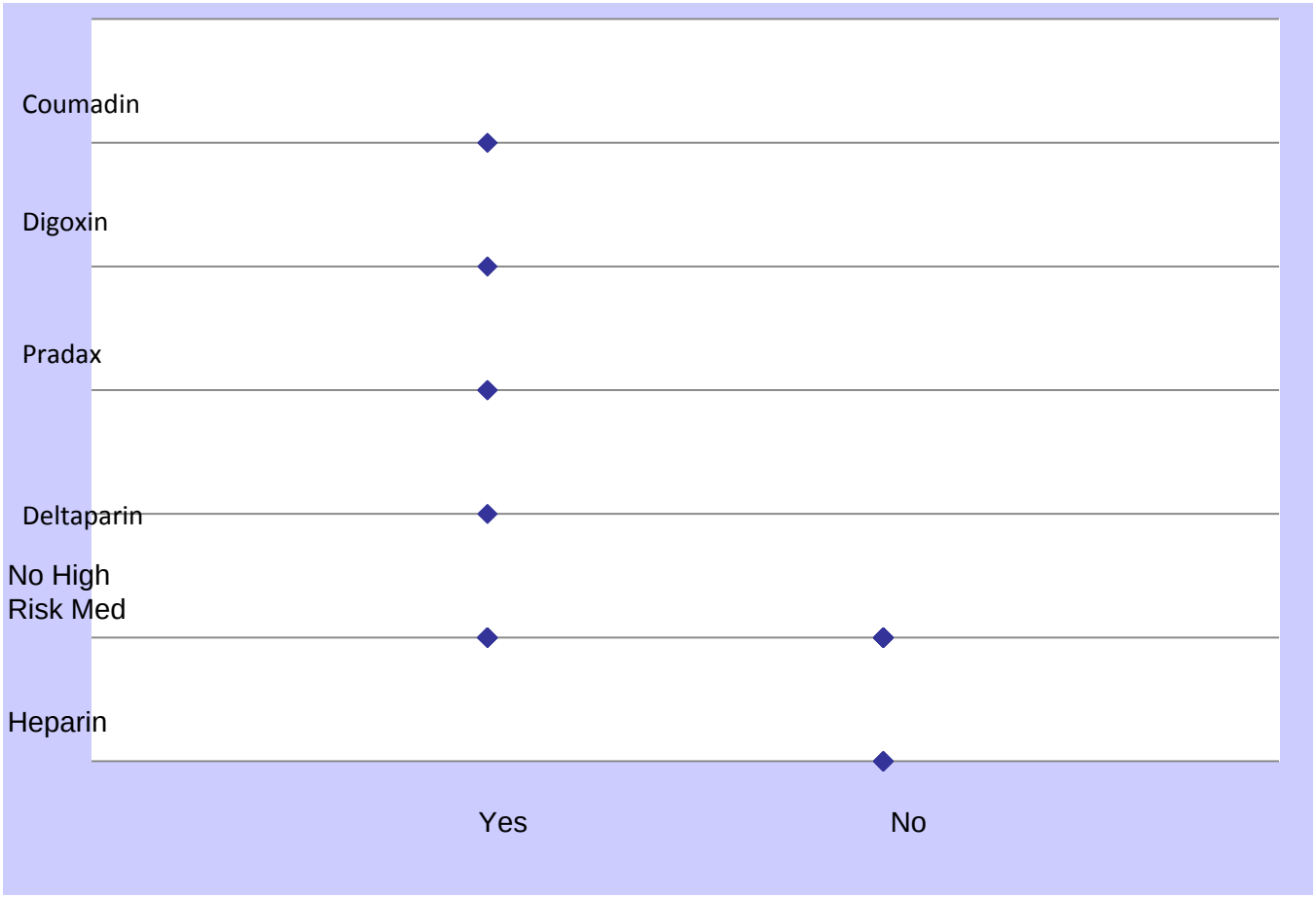
Scatter Plot of High Risk Med & Lab ordered



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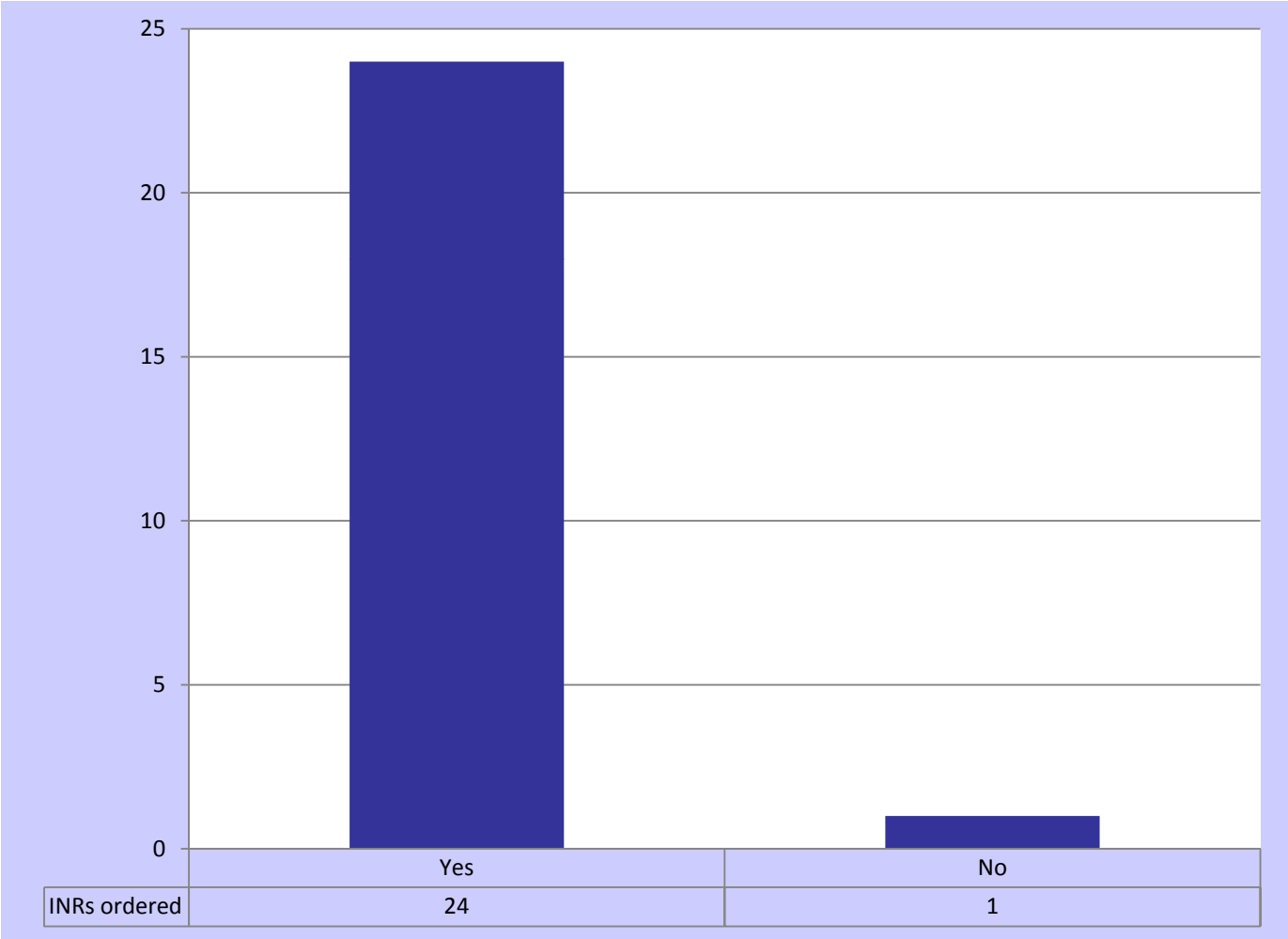
INRs done on clients on Coumadin presenting to ER and Admitted
(the 'No' was done shortly after admission)



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Improvement Ideas

What improvements did our team come up with?

1.	Redesign of OPD sheet	
2.	Redesign of SBAR	Implemented
3.	Physician orders – date/time	
4.	Physician date/time on results	Implemented
5.	Purchase stamp for time result received	Implemented
6.	Purchase stamp for stat vs urgent/Lab Called	Implemented
7.	Reduce # of places for lab work on Unit	Implemented
8.	Consistent point person – Unit Clerk	Implemented
9.	Auto fax of results by Lab for Units	

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Improvement Ideas cont'd

9.	Education and red flag for high alert meds (a guideline of 'be aware' meds created)	Implemented
10.	CRN for Medical and Surgical Units	
11.	5S for ER – footprinting	In Progress
12.	Pre-stamp of lab reqs as Urgent (ramp up of PDSA #4)	Implemented
13.	Reduction of verbal orders	

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Revised Spreadsheet

New categories added

- Time lab called
- Is lab work required?
- Is physician order required?
- High Alert Meds redefined as Coumadin only for auditing of this project

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MEASUREMENT DATA WORKSHEET

PARAMETERS:

- According to PDSAs
- High Alert meds include ~~Coumadin (C), Digoxin (D), anticonvulsants (A)~~ according to discussions with Pharmacy

PROCESS:

- Susan to request HIS to pull charts for May 29
- Auditing by Team, analysis by Susan for presentation June 6
- Daily audit - May 22-27 by Julie related to High Risk Meds with Relevant lab work and physician signature/date/time

QUESTIONS TO BE ANSWERED:

- According to PDSAs

PDSAs		
1 SBAR - admissions from ER		Apr-30
2 Unit Clerk	TBD	No audit
3 High Alerts		Apr-23
4 Stamps & Machine		May-07
5 Physician Signature/date/time		May-07

NR - not required

NA - not available

NM - not measurable

Categories to be completed from lab reqs

Red font — New/revised categories

SBAR - all admissions from ER — Apr-30

Unit Clerk — TBD — No audit

High Alerts — Apr-23

Stamps & Machine — May-07

Physician Signature/date/time — May-07

	Date	Client ID#	ER or Direct?	Admitted to Unit Name	Time admitted to the Unit	On high risk med?	Lab work required	Relevant Labwork ordered for high alert meds	Routine labwork ordered	Time Order Written	Stat vs Urgent	Time lab Notified	Time lab drawn	Time results completed in lab	Time results available in ER	Time results available on Unit	Result Type: Critical, Abnormal, Normal	INR #	Time physician sign/date /time Lab Work S/D/T	Is a physician order required?	Date & Time physician follow up order written	Date & Time follow up order carried out
	EX: Feb 2	12345	ER	Surg	1315	A	n	y	na	1300	U	1301	1310	1325	1340	1500	c		1510	n	1515	Feb 3 @900
1																						
2																						
3																						
4																						
5																						
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7																						
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9																						
10																						

PDSA Sample

PDSA 4 Equipment Purchase

Implementation May 7, 2012

Region/Agency:	RHA Central
Facility:	PDGH
Project:	INTERCEPTORS INR Project

PLAN	
What process are you planning to change? What will the new process look like?	Consistent documentation with regards to the times lab results are requested and received in ER or on the Unit.

DO	
What are the changes to be made - action items? Who will do it and where and when will the test happen? What will you continue to measure?	**WHAT**: • Purchase time/date machine for ER and all Units • Purchase a Stat and Urgent stamp with time Lab Called added for ER and all units STAT(URGENT) Lab called at _____ • Education of staff on revised process **WHO**: T. Asham/S. Raymack to CSM meeting **WHEN**: May 7 implementation Audit: May 29 for May 21-27 **WHAT** • S. Brooks to provide lab requisitions for the applicable week May 21-27 **MEASURE**: • Stat vs Urgent • Time results completed • Time results in ER • Time results available on Unit

STUDY	
What are the measurements from the test telling you?	Significant decreases in missed documentation of time on the following: Time to Unit: 74% improvement Time to ER: 78% improvement Time Lab called only 48% completed for Admissions, 31% for ER visits Stat vs Urgent only 28% completed for Admissions, 29% for ER visits

ACT	
Is the change complete and can be moved to the control plan? Do you have to make additional changes and test the process again? What are the changes?	Not complete! RAMP UP at Analyze/Improve Day: • Pre-stamp lab requisitions in the ER as Urgent. This stamp includes *Lab called at* and should be a reminder to complete the time. STAT stamp is used as required. • Lab requisitions from ICU and ER have priority. RECOMMENDATION: T. Asham to investigate the purchase of higher quality date/time stamp CHECKPOINT AUDIT: Time to ER/Unit, Time lab called and Stat vs Urgent – weekday vs weekend Monthly Sept 2012 through Feb 2013 SPREAD: Support from CEO and DHS at presentation to spread throughout region.

Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

AIM STATEMENT:

Implement a process that mitigates the risk for harm and improves interdisciplinary communication and documentation of this. Our goal was a 75% improvement in documentation of times which validates effective communication.

PDSA #1

Update SBAR to include

- **Date/time of hand off to another Unit**
- **Identify whether lab work pending**
- **Check off box that physician is aware of results**
- **Signature by reporting and receiving nurse**
- **Identified as permanent part of the health record**

RESULTS: 77% of ER clients admitted to the Unit now have an SBAR

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Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

PDSA #2 **Consistent point person – Unit Clerk in ER**

- **Unit Clerk hired May 14, 2012 (term position)**
- **RESULTS: Impact still to be determined!**

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Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

PDSA #3 High Risk Meds identification/education

- **Instead of a list of High Alert meds that always require blood work, a guideline has been established in consultation with Pharmacy.**
- **A guideline is not a consistent rule but more of a 'be aware meds' document.**
- **This includes approximately 10 medications that staff should consider ordering applicable labs for.**
- **Posters were completed and available in ER and on the Units as of May 30.**

Measurements confirmed that INRs continue to be done consistently on clients on Coumadin who present to the ER and are subsequently admitted.

- **RESULTS: Impact of 'be aware meds' poster to be determined!**

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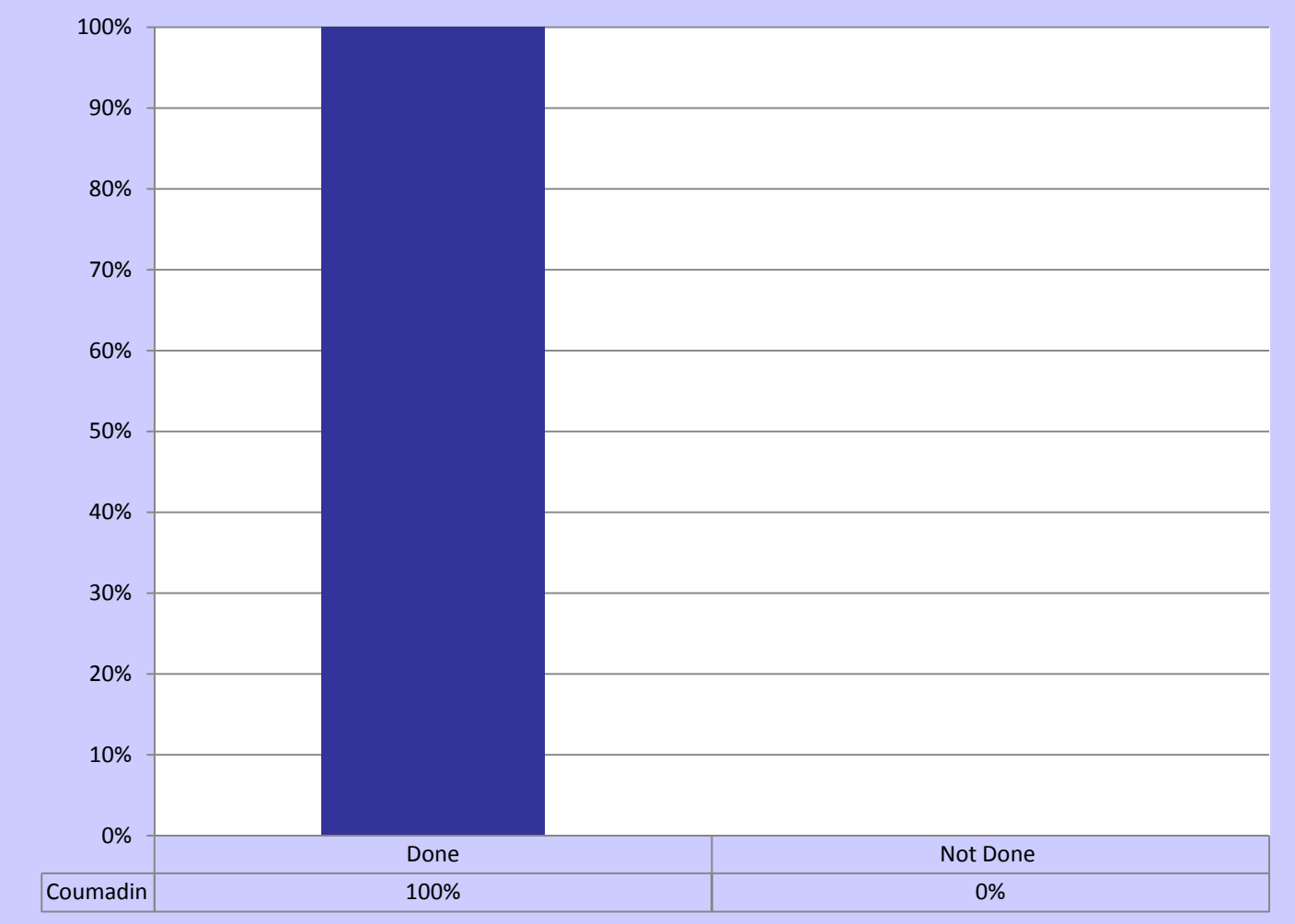
of INRs done

(based on 5 clients – One client's results were forwarded from the transferring facility)



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Poster of ‘Be Aware Meds’

BE AWARE:

Clients admitted on these medications should have the following Lab work done…

MEDICATION	LAB WORK
Warfarin	INR
Furosemide	Serum Creatinin and Potassium
Insulin	Blood Glucose
Chlorpromide	
Glidazide	
Glyburide	
Glimerpiride	
Nateglinide	
Repaglinide	
Acarbose	
Sitagliptin	

If your client is on any of these medications and the necessary Lab work has not been done, notify their physician right away.

Thank You

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Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

PDSA #4 Purchase of Equipment

- **Purchase of a time/date stamp for ER and all Units for use when results received**
- **Purchase of a Stat and Urgent stamp with time 'Lab Called_____'**

RESULTS (Admissions from ER):

Significant decreases in missed documentation of time on the following:

	Results
Time to Unit:	**74% improvement**
Time to ER:	**78% improvement**

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Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

PDSA #4 Purchase of Equipment (cont`d)

Two results (Admissions from ER) did not meet our AIM statement of 75% improvement,

	Results
• Time lab called	48% completed (2 with no time)
• Stat vs Urgent identified:	28% identified

so.....Modification to PDSA:

1. Pre-stamp of Lab reqs in ER with *URGENT Lab Called* _____
2. Survey to determine roadblocks for physicians to document times for lab results reviewed and physician orders.
3. Future project to enhance OPD sheet for visual cues.

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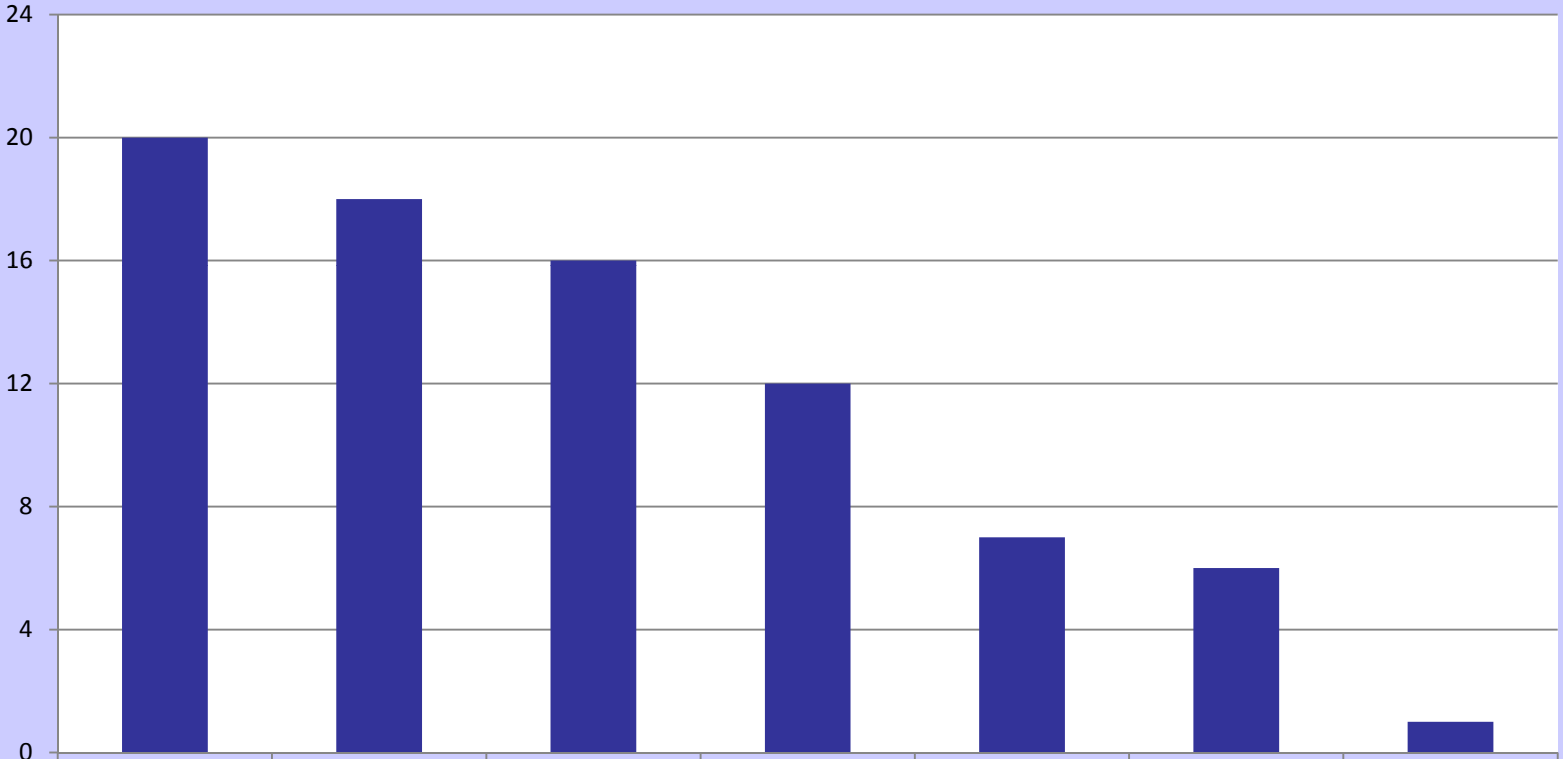
of Documentation of Times Defects

(Stat vs Urgent, Time Lab Called, and Time results reviewed not available initially)
Based on 34 Admissions from ER with 9 not requiring lab work – 25 data points



	Time Lab ordered	Stat vs Urgent	Time results reviewed	Time lab called	Time to Unit	Time to ER	Time Results Completed
Time Defects	20	18	16	12	7	6	1

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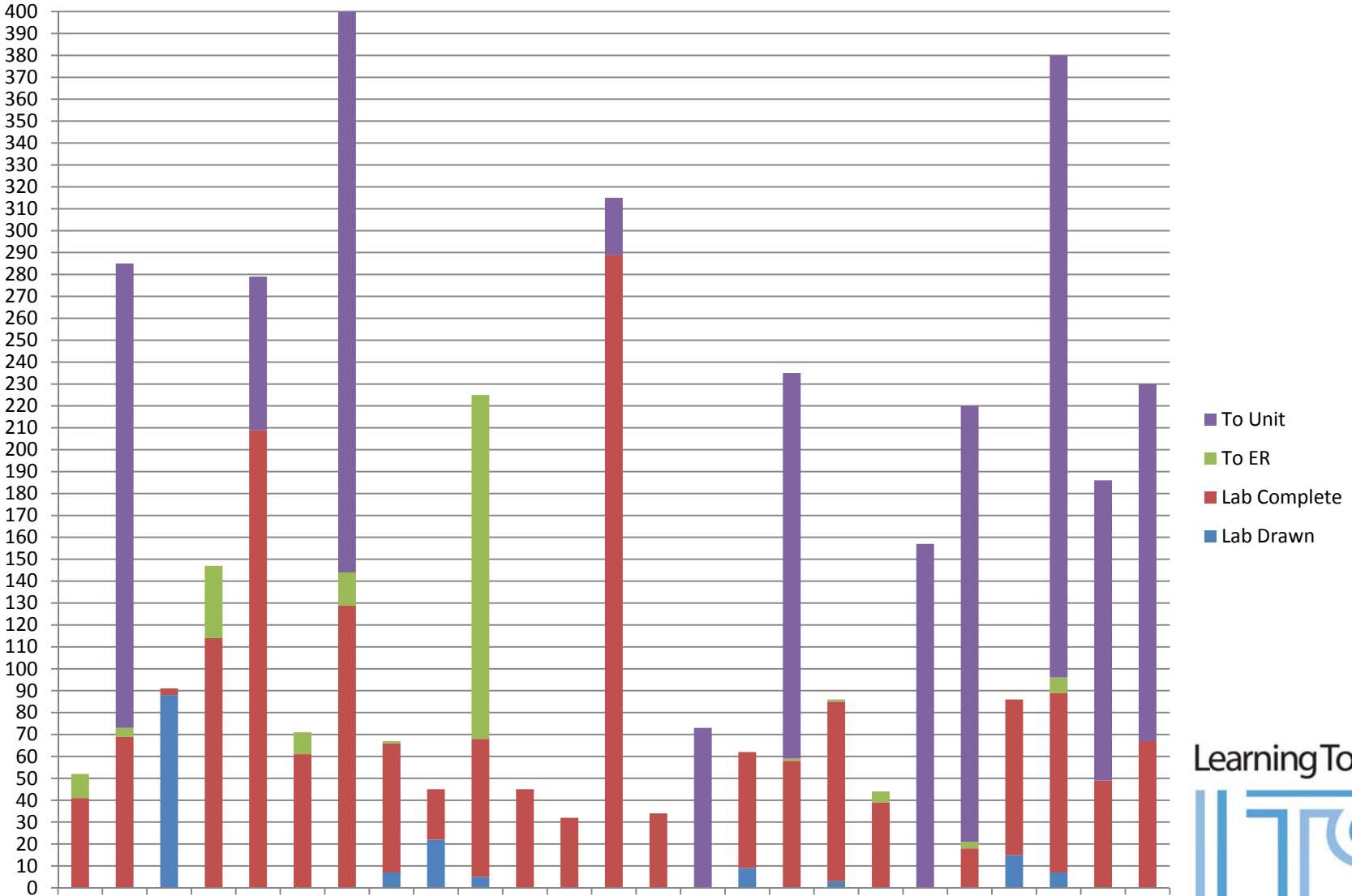
Communication of results (Admissions)

(a document we couldn't even create with our first analysis as times not documented!!!!)

(From time Lab called to completed to received in ER/Unit)



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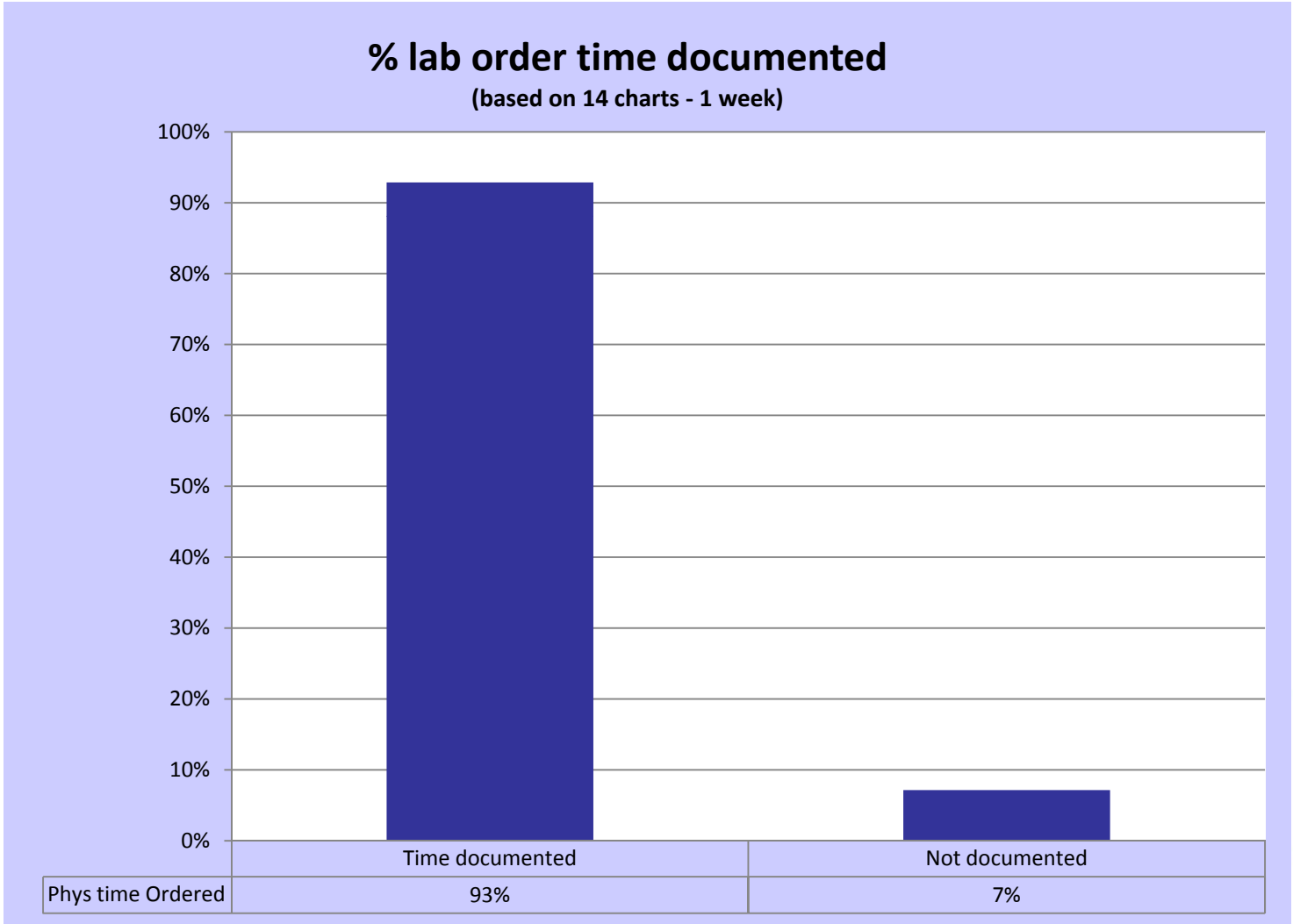
Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

PDSA #5 Documentation of date/time - Surgical Unit May 21-27, 2012 (based on 1 surgeon)



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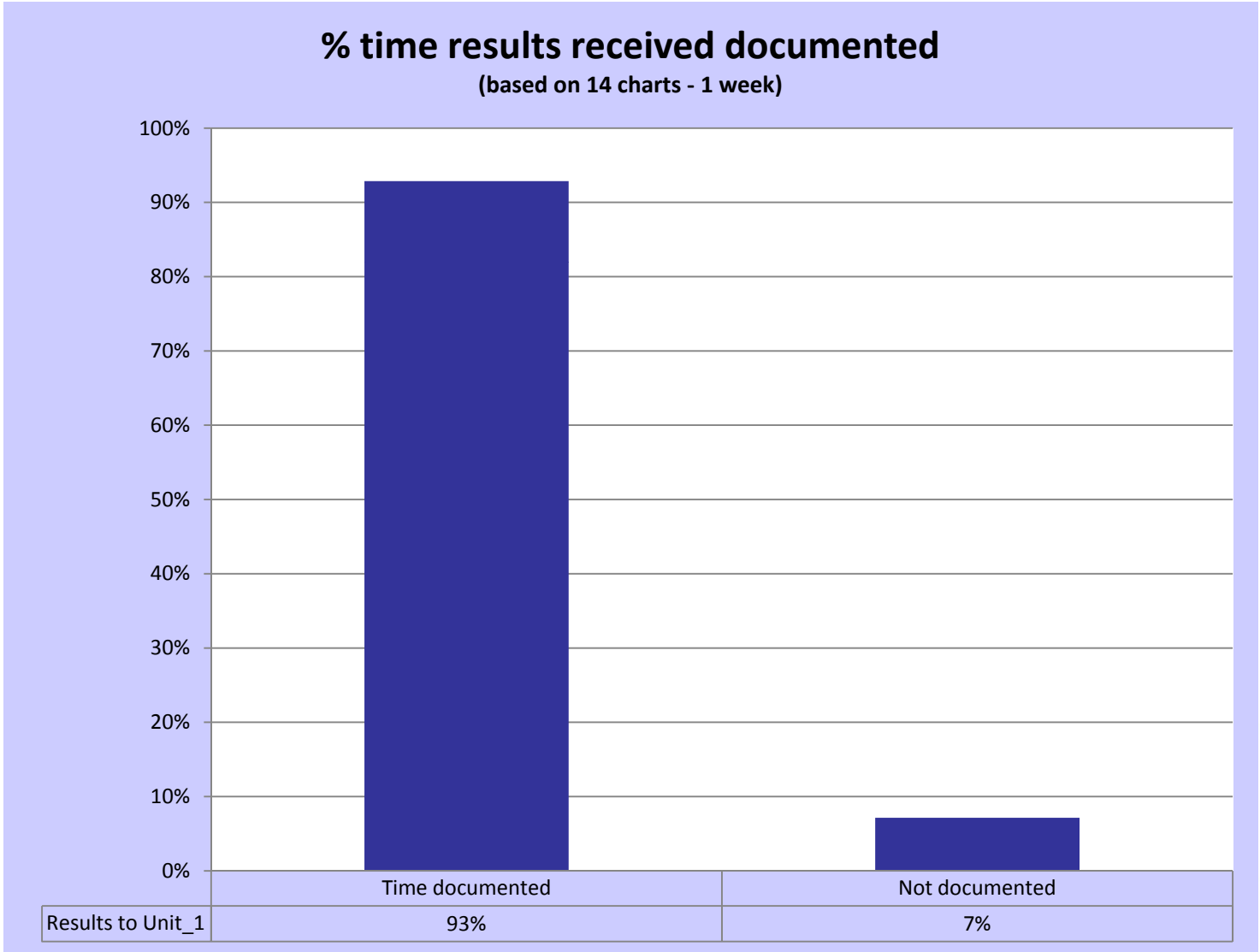
Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

PDSA #5 Documentation of date/time - Surgical Unit May 21-27, 2012 cont`d



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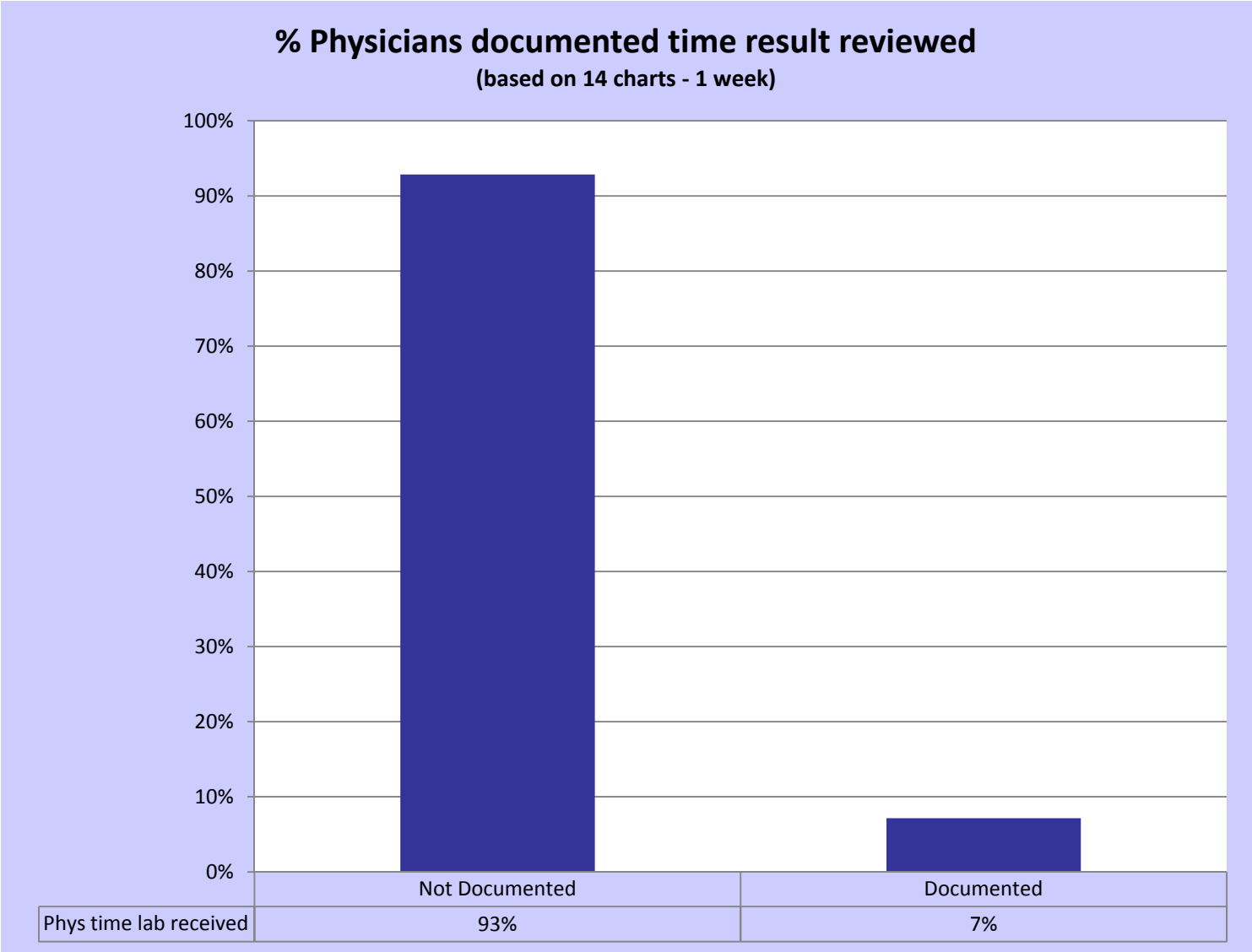
Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

PDSA #5 Documentation of date/time - Surgical Unit May 21-27, 2012 cont`d



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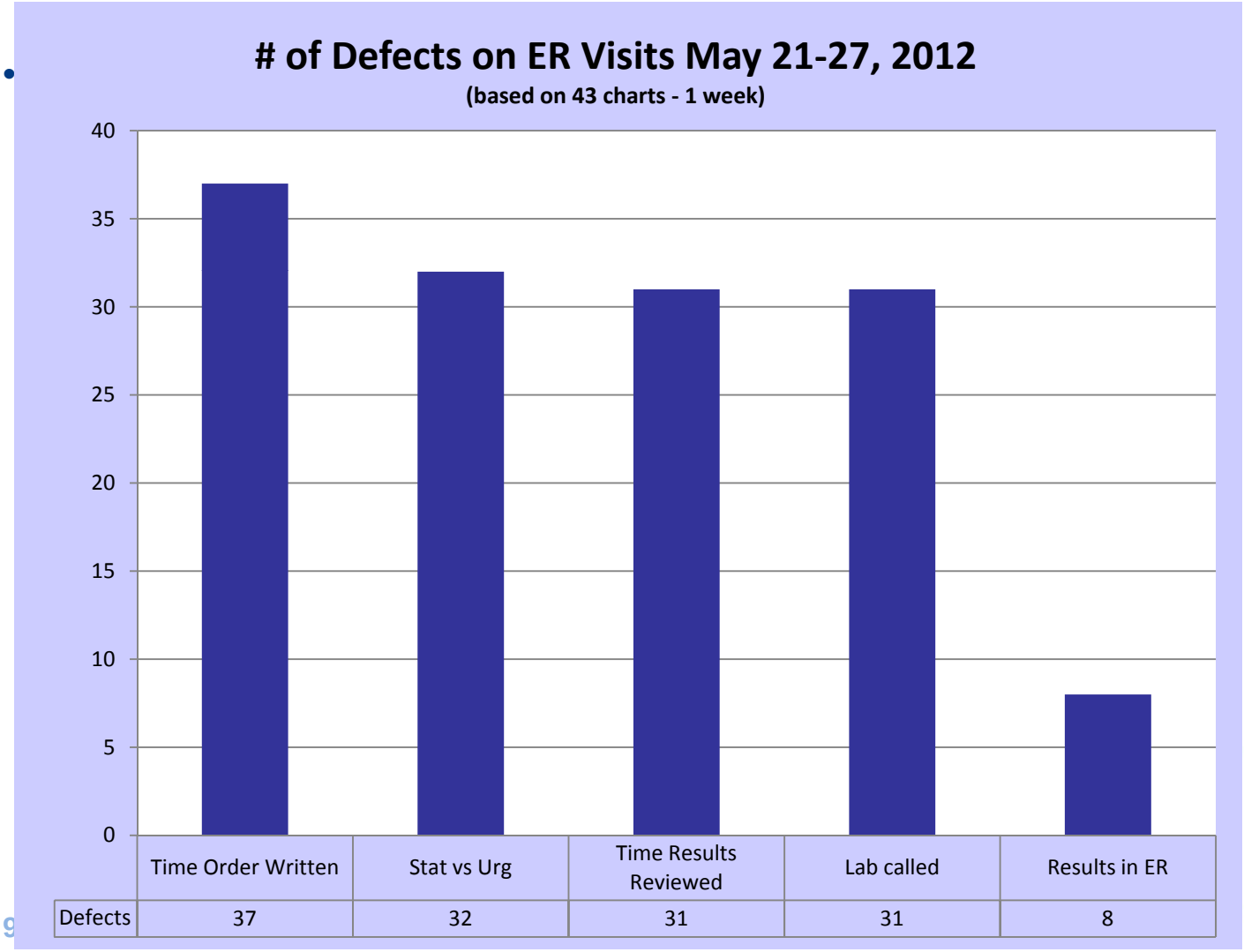
Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

PDSA #5 **Documentation of date/time - <u>ER visits (including those not admitted)</u>**



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Improvements Implemented!

Plan-Do-Study-Act (PDSAs)

SYNOPSIS:

The following data on ER Visits (including admissions) still did not meet our AIM statement

- **Time lab called** — **28% completed**
- **Stat vs urgent identified** — **26% identified**
- **Time results reviewed** — **28% completed**
- **Time order written** — **14 % completed**

The following data on Admissions from the ER still did not meet our AIM statement

- **Time lab called** — **48% completed (2 no time)**
- **Stat vs Urgent identified** — **28% identified**
- **Time results reviewed** — **36% completed**
- **Time order written** — **20% completed**

AIM STATEMENT:

Implement a process that mitigates the risk for harm and improves interdisciplinary communication and documentation of this.
Our goal was a 75% improvement in documentation of times which validates effective communication.

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Improve - Efficiencies

Efficiencies realized:

Consolidating lab results in one location on each Unit ensures they are readily available (without reprinting of results by the Lab) for:

- **Transfer of clients to another Unit**
- **Crisis situations**
- **Day-to-day care**

Documentation of Time Lab Called reduces follow up calls to the Lab

Awareness of status of results at transition points

- **SBAR documentation ensures staff are aware of pending results and status of physician communication at transition points eliminating additional calls for information to the Unit**
- **Development of Anticoagulant flowsheet for monitoring for continuity of care**
- **Identified requirement for DPIN information on each client to ensure 'Be aware meds' are identified**

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Improve – Inefficiencies identified

Other inefficiencies identified by this project:

A double check on set dose pre-packaged meds (i.e. heparin syringes) currently required.

- Prior to giving meds, a second nurse needs to be located to verify the dosage.
- An inefficiency also identified by the Releasing Time to Care (RTC) Team.

Autofaxing of lab results to Unit

- In process of implementation – date to be announced

Outpatient form

- No visual cues for documentation of times for physician orders
- No check box for INR and other relevant labwork

Verbal orders - Requires a LEAN Project!!

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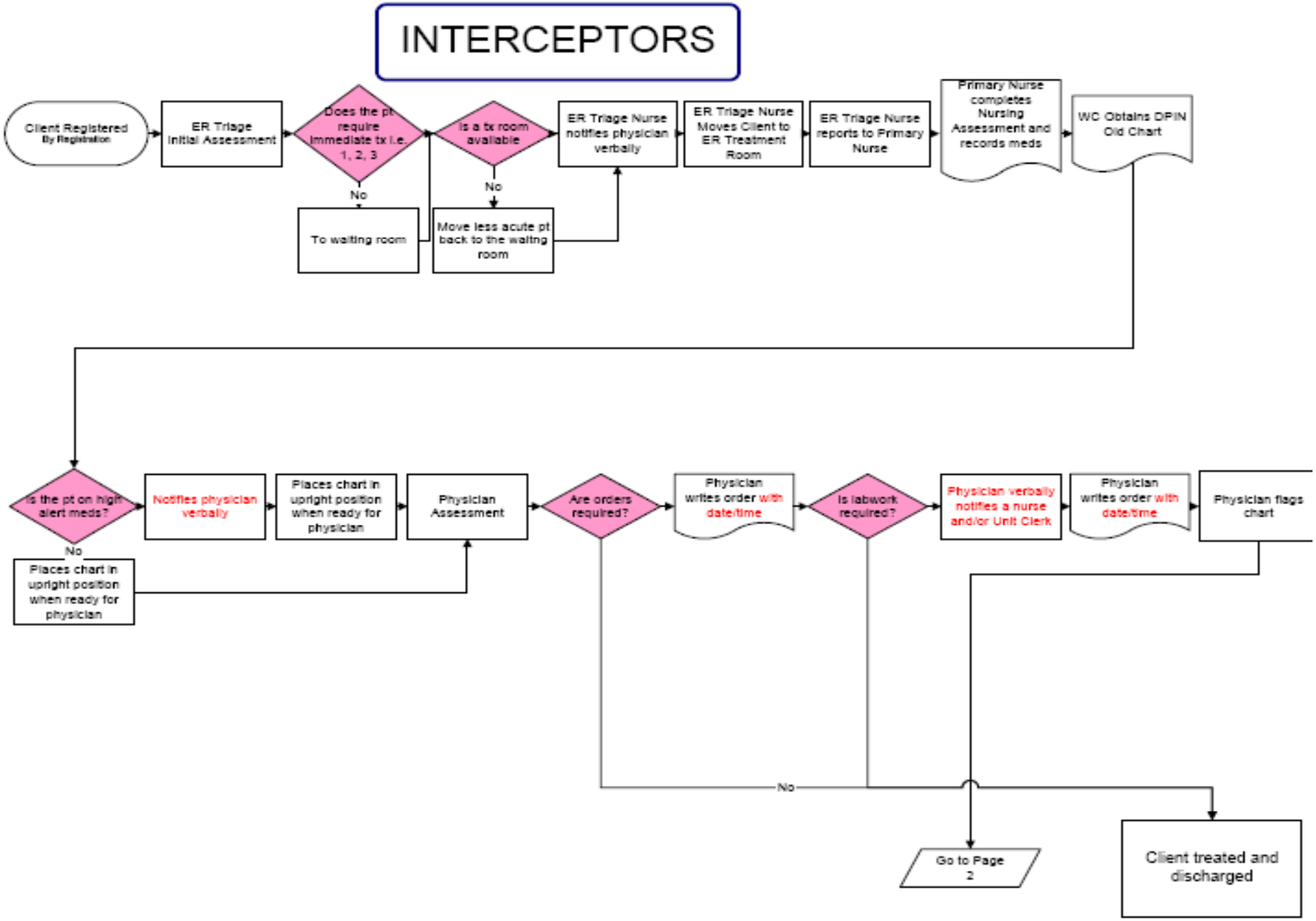

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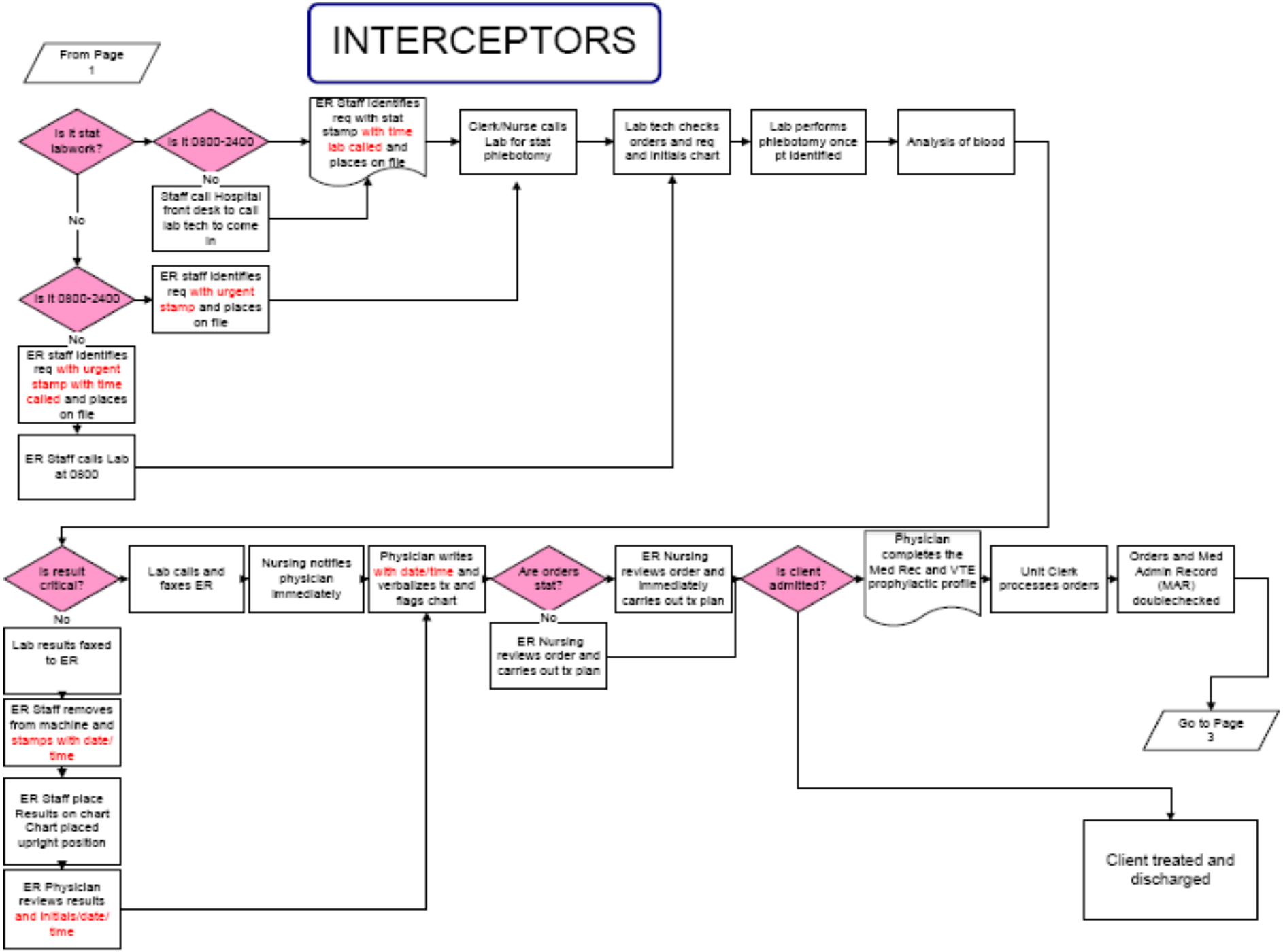

INTERCEPTORS

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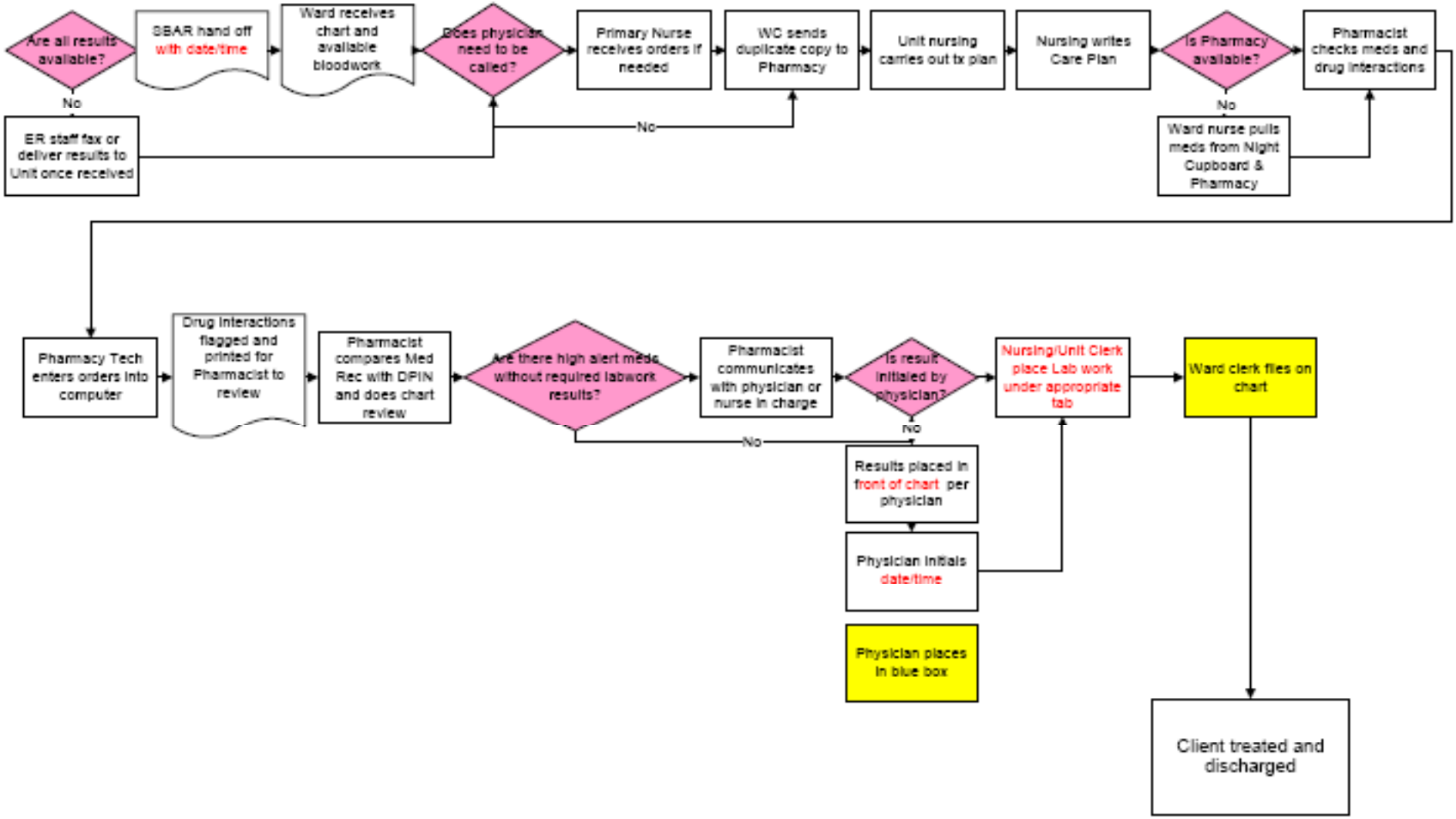

Control

What controls have we put in place to ensure that performance does not lapse?

- Pre-stamped lab reqs in ER as Urgent ‘Lab Called at _____’ on the pre-stamp to remind staff to complete time.
- Removal of ‘pink’ boxes (lab results location) on the Units
- Implementation of Anticoagulant flowsheet
- SBAR Revisions – Unit to Unit communication
- Unit Clerk position promotes continuity and Standard Work
- Be Aware Meds poster in ER and on the Units
- Date/time stamp for ‘time lab results received’

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Control

What we heard from staff:

Comments ranging from "Acknowledgement of the work required in a LEAN project' to 'This is a waste of time!'

Appreciative of decrease in repetitive calls to the lab and tracking physicians to ensure they saw results.

Time Stamp for results received has been well accepted!

SBARs appreciated by staff for communication.

Units – decrease in searching for lab work!

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Lessons Learned

What were some of the key things we learned about quality improvement while doing this project?

That the Define, Measure, Analysis, Improve, Control (DMAIC) cycle is crucial to identify the actual problem to ensure resources are directed to those areas that require attention.

Analysis of data provides valuable insights and supports or negates original theories.

Mentorship from LTS was instrumental as we changed the focus of our project after the initial analysis.

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Lessons Learned cont'd

What were some of the key things we learned about quality improvement while doing this project?

We continue to have challenges in meeting documentation standards i.e. no date/time on physician orders, OPD forms, etc.

Clients on Coumadin presenting to ER were and continue to have INRs done. Therefore, our focus changed to improve client care through enhanced communication i.e. SBAR and Anticoagulant flowsheet.

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Next Steps

What QI project is our organization going to be do next?

- 5S of the ER and ICU Supply Room (in progress)
- Audit of staff awareness of ‘Be Aware Meds’
- Survey of physicians to determine roadblocks for documentation of date/time
- Six check point auditing beginning in September through to February 2013

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The Team!

Shannon Raymack, Susan Enns (Green Belt), Tracey Asham (Team Lead), Donna Bleakney (Executive Sponsor), Julie Roberts, Sandy Brooks.
Missing from photo – Jenna Bolton

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