

# Boosting Patient Satisfaction Scores By Using Lean to Improve In-Patient Phlebotomy

Jeff Seiple  
Administrative Director  
Holy Spirit Hospital



## Outline

- Introduction
  - Holy Spirit Hospital
  - Holy Spirit Laboratory (Phlebotomy)
  - Challenges
  - Goals/Objectives & Opportunities
- Project Scope and Goals
- The Process
- The Results
- Summary/Lessons Learned
- Next Steps
- Questions

# Outline

- **Introduction**
  - **Holy Spirit Hospital**
  - **Holy Spirit Laboratory (Phlebotomy)**
  - **Challenges**
  - **Goals/Objectives & Opportunities**

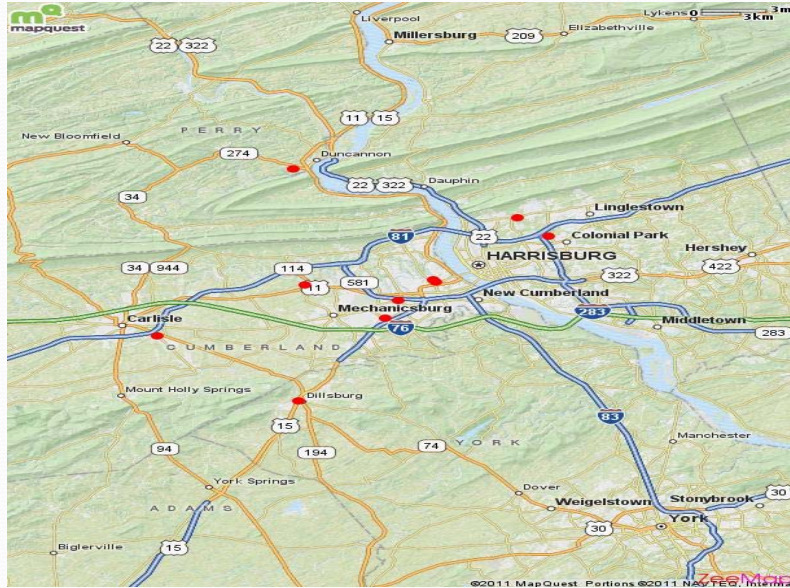
# Holy Spirit Health System



- 327-bed acute care community hospital with a heart center
- Regional outpatient network with six family health centers, ten outpatient service centers, a sleep center, a wound healing and hyperbaric center, a cancer center, home health care, and patient transport services
- Level III Neonatal Intensive Care Unit, Gamma Knife services, and recently acquired the DaVinci robot



## Holy Spirit Hospital & Draw Sites



## Challenges

- Our productivity numbers indicated we were overstaffed, but managers & employees disagreed.
- Have an aging laboratory technical workforce – numerous staff will retire, no staff to replace them.
- Negative perception/mistrust of management
  - Cut staff and budgets with little or no staff input
- Getting people to think outside of their immediate department & look at global impact on

PROCESSES

## Goals/Objectives

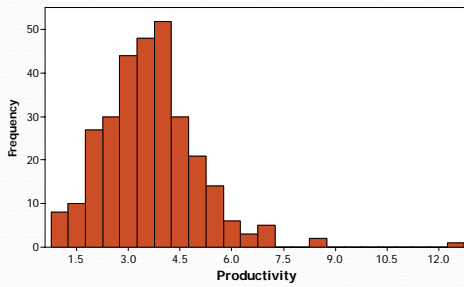
- Contract with a third-party consultant to perform a Lean Assessment of the entire laboratory.
- Ascertain areas of opportunity within the laboratory and prioritize in terms of greatest return.
- Look for opportunities for efficiency and improvement that can be accomplished using point Kaizens and with limited resources.
- Train key personnel and staff on lean principles to establish a core knowledge of the process and what is involved.

## Opportunities

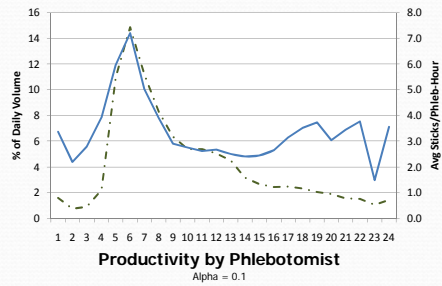
- Primary Emphasis
  - Phlebotomy Staffing Alignment and Process
  - Processing Staffing Alignment and Process
  - Micro Blood Culture Contamination
  - Micro Revenue Leakage
- Other Opportunities
  - Micro TAT – Process
  - Stat Body Fluids
  - Blood Bank Staffing Alignment

# Phlebotomy Productivity

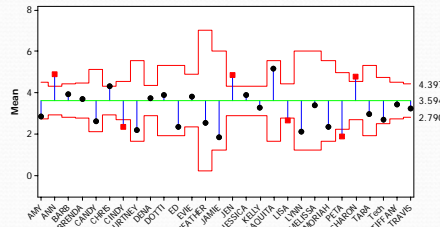
Histogram of Phleb Productivity



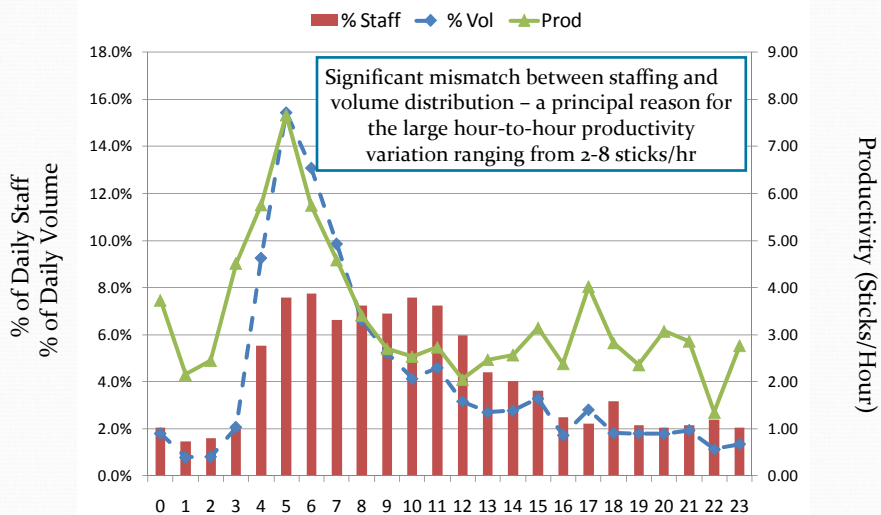
Phlebotomy Productivity and Relative Volume by Hour of Day



- Significant mismatch between staffing and volume distribution – a principal reason for the large hour-to-hour productivity variation ranging from 2-8 sticks/hr
- Second tier productivity driver involves individual practices; this probably more impacts TAT, errors, and patient sat



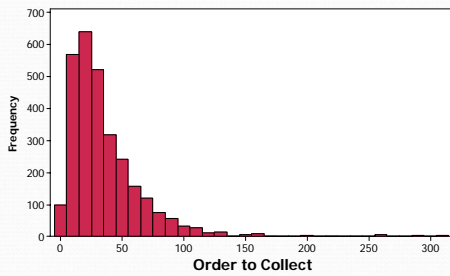
# Baseline Staff & Volume Distribution



# Baseline Turn-Around Time

- HSH Inpatient Stat Order to Collect
- 2900 tests (HGB, NA, PT)
- Week of January 17, 2011
- Data removed if less than 0 or greater than 360 minutes

HSH Inpatient Stat Turn-Around Time



Hour of Day	Avg TAT Order to Collect	Avg TAT Order to Result
0	30	55
1	33	55
2	27	51
3	31	58
4	30	62
5	28	63
6	22	52
7	37	70
8	31	66
9	26	60
10	34	68
11	45	75
12	39	67
13	43	74
14	38	69
15	33	64
16	37	66
17	35	69
18	31	60
19	31	62
20	30	58
21	35	63
22	41	70
23	39	65
Overall	35	65

# Outline

- Introduction
  - Holy Spirit Hospital
  - Holy Spirit Laboratory (Phlebotomy)
  - Challenges
  - Goals/Objectives & Opportunities
- **Project Scope and Goals**

## Project Scope and Goals

- **Scope:** HSH Inpatient phlebotomy processes
- **Goals:**
  - Improve time from order to collection
  - Improve Phlebotomist utilization – reduce delays such as decision points, phone interruptions, Mobilab cache, and other non-value add elements such as log sheets, micro forms, etc...
  - Potential Targets
    - Reduce morning order-to-collect from ending at 9-10 am to ending at 7am
    - Improve productivity from 3.7 sticks/phleb to 4.4+
    - Reduce OT from 30 hrs/week to less than 10 hrs/week

## Outline

- Introduction
  - Holy Spirit Hospital
  - Holy Spirit Laboratory (Phlebotomy)
  - Challenges
  - Goals/Objectives & Opportunities
- Project Scope and Goals
- **The Process**



## Phlebotomy Lean Team



## Improvement Themes

### AM Approach (55% of Day's volume)

- **"Water Spider" to handle calls, test changes, problems**
- **Remote/Dispatch to cover OPS, ER Holds, Stats, ...**
- **New schedule with 3:30-6:30am focus**

### Work Standardization & Start-up

- **Rise and Shine Quick Start ... Supplies ready to go**
- **Smooth Sailing ... common approach to phlebotomy**
- **Additional tubes**

### Forms and Comments

- **No Log Sheet**
- **No Micro Form**
- **Reduced NDR and Comments**
- **No more label auto-print for 3<sup>rd</sup> Floor**

# AM Approach

## Morning Crew

- 3:30-6:30am well staffed crew to ensure rapid TAT
- Focused on sticks; problems, calls, stats in remote areas diverted

## Stat/Remote

- Cover OPS, Stats, other areas
- Allow morning crew to stay in core areas

## “Water Spider”

- Absorb “waste” to allow rest of team to be productive
- Handle incoming calls, reassignments, and problems

## Stats/Remote Coverage

ER - Holds  
 OPS - Stats  
 GI Service - Stats  
 SDSA - Stats  
 PACU - Stats  
 CVU (timed/stats)  
 SICU (timed/stats)  
 Behavioural Health (routines)  
 Select Specialty (routines)

## H2O Spider (one regular assignment for mornings - flip role on other shifts as needed)

Incoming phone calls from the floors/units  
 note: all calls forwarded to one number for inbound; still a phone with each phlebotomist  
 Review unreceived list  
 Re-assign resources as needed  
 Test change or test added  
 Need label for a line draw  
 Need supplies  
 Provide tubes  
 Cover or Assign for the Unexpected (as needed)  
 Coworker-assisted stick support  
 Drug and Alcohol  
 Can't draw off line as planned

## Day Prep Tasks

Cart, Mobi, Phone Prep  
 Line Calls  
 Lines into Mobis  
 Remove Dups  
 Assignments

Pilot and Adjust Approach, Staffing to Drive best TAT, Staff Utilization, and Quality

# AM Approach – Pilot Schedule

Avg Weekday Volume	Current	1.0	1.0	1.0	2.5	2.5	11.3	11.3	19.5	19.5	16.4	16.4
Role	4-9AM Vol	0130	0200	0230	0300	0330	0400	0430	0500	0530	0600	0630
Heart	17					2.0	1.0	1.0				
SICU	5					1.0						
MICU	5						1.0					
6 East	20						1.0	1.0	1.0	1.0		
7 Main	30						1.0	1.0	2.0	2.0	1.0	
4	20							1.0	1.0	1.0	1.0	
8 Main	26						1.0	1.0	1.0	1.0	1.0	1.0
6 Main	25										2.0	3.0
3	5											Tech
Day Prep		1.0	1.0	1.0	1.0							
Stats/Remote						1.0	1.0	1.0	1.0	1.0	1.0	1.0
H2O Spider						1.0	1.0	1.0	1.0	1.0	1.0	1.0
General Coverage		1.0	1.0	1.0	1.0							
FTE		2.0	2.0	2.0	2.0	5.0	7.0	7.0	7.0	7.0	7.0	6.0

Staffing Aligned to Focus on 3:30-7am  
 DRAFT Roles/Assignments by Half-Hour

# Work Standardization & Set-Up

## Moving Forward

For the past several days we have been reviewing our AM phlebotomy process, keeping in mind the concerns of both our phlebotomy staff and physicians. We have come up with some ideas to try to improve our morning turnaround times, reduce interruptions and help us unite as a team.

### To help us get started more efficiently:

- Carts will be fully stocked by 11:7 staff
- Please keep in mind Laboratory policy and leave all personal cell phones and electronic devices in your locker.
- Once you arrive at your assigned floor collect any Stats or Timed studies first.
- Begin collecting in the odd number rooms and then move on to the even numbered rooms.
- This will allow your co-workers to assist more efficiently.
- Do not skip over isolation rooms or patients with Blood Culture orders.
- Per JCAHO intact gloves must be worn and tubes must be labeled at the patient's bedside.
- When cancelling a test please include specific reason for the cancellation and the person's full name and title who is authorizing the cancel.

### Additional changes to improve work flow:

All calls will be forwarded to one phone that will be manned by a coordinator  
(text to phlebotomist will still carry their hospital assigned phone)



# Forms & Comment

## Mobi and NDR Comment Changes

Starting March 9<sup>th</sup>, 2011 we will be doing away with Collection Logs in order for this to be successful we will need everyone to please put the necessary comments into their mobi's. We have been able to reduce our Mobi comments from 26 to 6; also we have reduced the NDR comments from 32 to 11.

### Mobi Comments

Mobi Comment	Purpose of the Comment
Drawn above IV site	Med contamination
Drawn below IV site	Med contamination
Co worker assisted	Account for co-workers and times
Hard stick	Blood culture tubes
Patient receiving blood	Important to know for cardiac's and blood cultures
Patient receiving plasma	Important to know for cardiac's and blood cultures

### NDR Comments

NDR Comment	Purpose of the Comment
Nurse to collect	Line
Labels sent to floor	Send labels to floor for the nurse
In test/unavailable	Need to check on the pt
Patient refused collection	Notify nursing staff of refusal, decisions will be made after nursing staff has talked to pt...
Attempt 1	To keep track how many times the pt was stuck
Attempt 1&2	To keep track how many times the pt was stuck
Attempt 3	To keep track how many times the pt was stuck
Attempt 4	To keep track how many times the pt was stuck
Blood culture, 2 <sup>nd</sup> set not obtained	When you only obtain one set done and only need the 2 <sup>nd</sup> set
Wrong screen accessed	If you accidentally accessed pt screen

Starting March 1<sup>st</sup>, 2011 we will have a trial on Micro Slips our goal is to do away with the Micro Slips. In order for this to happen we ask that when drawing blood cultures you carefully hand write time of collection on labels. Again it is very important that collection time be written on label. If we are not complying with writing the times on the labels we will have to go back to using the Micro forms.

## Outline

- Introduction
  - Holy Spirit Hospital
  - Holy Spirit Laboratory (Phlebotomy)
  - Challenges
  - Goals/Objectives & Opportunities
- Project Scope and Goals
- The Process
- **The Results**

## Monthly Phlebotomy Dashboard

Metric	Goal	Baseline	April	Sept	September vs. Baseline
AM Collect % Timeliness (*)	90% by 7 am	0%	64%	84%	84% improvement
Avg Stat Order to Collect TAT (mins)	<30.0	36.4	31.0	29.1	20% improvement
Sticks per Hour (excluding Leads)	5.2-6.0	3.3	4.0	5.3	61% improvement
OT Hours/week	<10	30.5	N/A	18.25	40% improvement
FTE (Inpatient)	N/A	15.8	13.8	11.8	25% Decrease
Press Ganey Scores	67	47	72	93	98% improvement

Baseline: January 18- February 14, 2011

## Outline

- Introduction
  - Holy Spirit Hospital
  - Holy Spirit Laboratory (Phlebotomy)
  - Challenges
  - Goals/Objectives & Opportunities
- Project Scope and Goals
- The Process
- The Results
- **Summary/Lessons Learned**

## Summary

- Improved staff satisfaction
- Reduced TAT (ordered to receipt) for Stat collections
- Increased phlebotomy staff productivity
- Decreased incidence of overtime
- Reduced staffing levels & redefined job responsibilities
- Increased customer satisfaction:

**93<sup>rd</sup> Percentile – Press Ganey**

## Lessons Learned

- Adequate training and staff involvement are keys to success.
- It's best to break complicated projects into smaller more manageable projects that have a better chance for success.
- Don't ignore your history and your corporate culture.
- Celebrate your victories, learn from your mistakes.
- Never let your team believe that the project is over, constantly remind them that lean is a journey with no end. You can always be better.
- There is no perfect solution, there is the best solution for any given situation.

## Outline

- Introduction
  - Holy Spirit Hospital
  - Holy Spirit Laboratory (Phlebotomy)
  - Challenges
  - Goals/Objectives & Opportunities
- Project Scope and Goals
- The Process
- The Results
- Summary/Lessons Learned
- **Next Steps**

## Next Steps

- Additional projects are underway
  - Processing/Specimen Receiving
  - Courier
  - Automated Lab (Chem, Heme, Coag, & Urinalysis)
- Other areas are being assessed
  - Transfusion Services
  - Anatomic Pathology
  - Microbiology
- Interest is growing in lean outside the Lab

Questions?