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 Laboratory (Phlebotomy)

- Accredited by CAP, CLIA, PA Department of Health, & AABB
- Ten locations in a four-county area (Cumberland, Adams, Dauphin, & Perry)
- Phlebotomy
  - Inpatient: 15.8 FTE
  - No routine ER coverage
  - AM Rounds – 9:30 AM
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*

- 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**

Significant mismatch between staffing and volume distribution – a principal reason for the large hour-to-hour productivity variation ranging from 2-8 sticks/hr
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

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<thead>
<tr>
<th>Hour of Day</th>
<th>Avg TAT Order to Collect</th>
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<td>Overall</td>
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</table>

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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

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- **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 3:30-6:30 am 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 3rd 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 - Walls
- OPS - Stats
- GI Service - Stats
- SDSA - Stats
- PACU - Stats
- CVU (timed/stats)
- SICU (timed/stats)
- Behavioral Health [routines]
- Select Specialty [routines]

**H20 Spider** (one regular assignment for mornings - flip role on other shifts as needed)
- Incoming phone calls from the floors/funds
- Review unassigned list
- Reassign 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, Mobile, Phone Prep
- Line Calls
- Lines into Mobi's
- Remove Dups
- Assignments

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**AM Approach – Pilot Schedule**

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**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 Adelphobotany process, bringing to mind the concerns of both our Adelphobotany 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 start more efficiently:
- Cars will be fully stocked by 11:00 staff.
- A second Adelphobotany laboratory policy will be added per cell phone and electronic devices to your folder.
- Phone Meetings at your assigned floor conference suite in Board Room levels one and two.
- High-ranking medical office numbers will then run to the most essential.
- The phone will be given a set of numbers to start more efficiently.
- There will be some revisions on phones while working in the office.
- An updated telephone system will need some numbers to be labeled for patient's quick access.
- When calling, please include specific reason for the conversation on the phone.

Additional changes improve our flow.
All calls will be transcribed to one phone that will be handed by a coordinator (applicable to all Adelphobotany floor representatives).

Forms & Comment

Mobi and NDR Comment Changes

Starting March 8th, 2011 we will be doing away with Collection Logs. In order for this to be in place, we will need some phone by phone and this microcenter components in order to streamline our processes. We have been able to reduce our Mobi comments from 76 to 38, also, we have reduced the NDR comments from 62 to 11.

### Mobi Comments

<table>
<thead>
<tr>
<th>Mobi Comment</th>
<th>Purpose of the Comment</th>
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<tbody>
<tr>
<td>Nervous above the line</td>
<td>Med contamination</td>
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<tr>
<td>Sleep below the line</td>
<td>Med contamination</td>
</tr>
<tr>
<td>Co-workers upset</td>
<td>Account for co-workers and times</td>
</tr>
<tr>
<td>Practice changing</td>
<td>Improper patient for non-refundable and non-cancelable</td>
</tr>
<tr>
<td>Patients not receiving</td>
<td>Improper patient for non-refundable and non-cancelable</td>
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### NDR Comments

<table>
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<tr>
<th>NDR Comment</th>
<th>Purpose of the Comment</th>
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<tbody>
<tr>
<td>Trouble to correct</td>
<td>Line</td>
</tr>
<tr>
<td>Label not clear</td>
<td>Send labels to floor for the nurse</td>
</tr>
<tr>
<td>Patient not connection</td>
<td>Hardly moving staff or tech, please call them to help</td>
</tr>
<tr>
<td>Attendant, Attendant, Attendant</td>
<td>Keep track how many times the phone is picked up</td>
</tr>
<tr>
<td>Attendant, Attendant, Attendant</td>
<td>Keep track how many times the phone is picked up</td>
</tr>
<tr>
<td>Blood culture 2 fast not obtained</td>
<td>When you only obtain one set done and only need one set done</td>
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<tr>
<td>Wound on arm</td>
<td>If you无线电 approved as per patient</td>
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</tbody>
</table>

Starting March 14th, 2011 we will have a trial on Micro Slip. Our goal is to do away with the Micro Slip. 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 important that collection time be written on label. If we are not complying with the times on the labels, we will have to go back to using the Micro forms.
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### Monthly Phlebotomy Dashboard

<table>
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<tr>
<th>Metric</th>
<th>Goal</th>
<th>Baseline</th>
<th>April</th>
<th>Sept</th>
<th>September vs. Baseline</th>
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<tr>
<td>AM Collect % Timeliness (*)</td>
<td>90% by 7 am</td>
<td>0%</td>
<td>64%</td>
<td>84%</td>
<td>84% improvement</td>
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<tr>
<td>Avg Stat Order to Collect TAT (mins)</td>
<td>&lt;30.0</td>
<td>36.4</td>
<td>31.0</td>
<td>29.1</td>
<td>20% improvement</td>
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<tr>
<td>Sticks per Hour (excluding Leads)</td>
<td>5.2-6.0</td>
<td>3.3</td>
<td>4.0</td>
<td>5.3</td>
<td>61% improvement</td>
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<tr>
<td>OT Hours/week</td>
<td>&lt;10</td>
<td>30.5</td>
<td>N/A</td>
<td>18.25</td>
<td>40% improvement</td>
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<td>FTE (Inpatient)</td>
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<td>15.8</td>
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<td>11.8</td>
<td>25% Decrease</td>
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<tr>
<td>Press Ganey Scores</td>
<td>67</td>
<td>47</td>
<td>72</td>
<td>93</td>
<td>98% improvement</td>
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Baseline: January 18- February 14, 2011
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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:

  93rd 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.

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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?