HELP: Shifting Nursing Time from Care Support to Care Delivery

Moderator: Isaac Mitchell, Director of Lean Continuous Improvement, East Tennessee Children’s Hospital

Today’s Presenter: Seth Hostetler, Lead Process Engineer, Geisinger Health System
Conference Website: www.shsconference.org

Date: February 18-20, 2015

Location: Rosen Plaza Hotel, 9700 International Drive, Orlando, FL 32819
1. Webinar
2. Q&A
3. Conference Overview
   - Keynote Speakers
   - HSPIC Panel Discussion
   - Conference Tracks
   - Pre-Conference Workshops
   - Poster Sessions and Vendor Exhibits
   - Student Activities
   - Young Professionals Program
   - What to Expect
Seth Hostetler

- Lead Process Engineer in the Care Support Services Division at Geisinger Health System.
- In this position he is tasked with driving innovations within care support processes by leading strategic process improvement projects across the health system.
- Active in research aimed at re-engineering healthcare at Geisinger. Co-investigator on 2 research grants with total funding of over $750K.
- Current PhD candidate at Penn State University, studying industrial engineering and operations research, with a research focus in healthcare systems engineering.
- Bachelors and Masters Degrees from Ohio University, both in Industrial and Systems Engineering.
- Seth is an active member of the Society for Health Systems (SHS), the Institute of Industrial Engineers (IIE), and the Institute for Operations Research and Management Science (INFORMS).
HELP
Healthcare Enabled Logistics Program

Shifting Nursing Time from Care Support to Care Delivery

January 22, 2015

Seth Hostetler
Lead Process Engineer, Care Support Services
Research Associate, Center for Healthcare Systems Re-engineering
Geisinger Health System
“Healthcare is not Broken”

“Who designed this wasteful, incapable, unavailable, inadequate, inflexible, uneven, and disconnected value stream in the first place? And who is responsible for its performance now? The answer in most cases is that usual suspect, No One.”

– James Womack, Founder and Chairman Lean Enterprise Institute, Inc.
Agenda Topics

- Project HELP Background and Motivation
- Support Service Improvements
- The Bill of Resources
- The Care Support Assistant
Project HELP Team

- **Executive Sponsors:**
  - Deb Templeton, RPh, Chief Care Support Services Officer
  - Crystal Muthler, RN, Chief Nursing Officer, GMC
  - Ken Wood, DO, Chief Medical Officer, GMC (Principal Investigator for AHRQ Funding)

- **Project Director:** Kevin Capatch, Director, Supply Chain Technology and Process Engineering

- **Project Manager:** Seth Hostetler, Lead Process Engineer, Care Support Services

- **Process Engineers:** Aaron Homiak, John Pulaski, Kris Heimbach

- **Interns:** 22 former interns since 2010

- **Charter Floor Sponsor:** Gavin Claycomb, RN, Operations Manager, GP2

- **CSA Supervisor:** Vinnie Timpanelli, Supervisor Logistics Operations, Linen Services and Equipment Transport

- **Stakeholders:** Many, many others…
PROJECT HELP’S BACKGROUND & MOTIVATION

Reducing clinician involvement in logistics related tasks and improving support service processes.

“We will do our job, you will never do our job.”
- Deb Templeton, Chief Care Support Services Officer
Work Observation Methods

1. Work Sampling
   - Randomly cycle through the unit, observing all staff, recording “who”, “what”, and “where”

2. Direct Observation
   - One observer follows one RN/NA for a full shift, recording “what” and “where”

3. RTLS (Real-Time Locating System) Staff Tags
   - Tags are uniquely assigned to each unit staff member
   - Data can be collected at all times
The “Original” Nursing Study

Work sampling study conducted by 2 engineering interns in early 2010

Approx. 40,000 data points (staff observations) were collected across 19 inpatient units at GMC

Each observation documented:

– Who – RN, NA, environmental services, etc.
– What – patient care, documentation, idle, etc.
– Where – e.g. patient room, unit desk, med cart, etc.
Project HELP Background

A work sampling study performed at Geisinger Medical Center, which studied all inpatient areas and the ED, found that nurses, on average, spend 19.8% of their time with logistics related tasks. This includes activities such as searching for, walking to get, and calling for needed supplies & equipment.

Project HELP (Healthcare Enabled Logistics Program) aims to give back clinical time to nursing by engineering improved methods to support the delivery of care.
HELP has 3 Key Focus Areas

1. Improve the support services operations to provide better customer service to the inpatient nursing units.

2. Be proactive in gathering resources for nursing, by using IT tools to capture and understand nursing knowledge. *(Bill of Resources)*

3. Improve frontline care delivery support by closing the gap between nursing and support services. *(Care Support Assistant)*
SUPPORT SERVICES

Increasing logistics effectiveness and efficiencies to improve customer service and remove waste in order to redeploy resources to the frontline of care.
Support Services Re-Engineering

Redesigning delivery patterns and departmental processes

- Improved use of RTLS to provide real-time decision support

Redeploying staff closer to the frontline of care as departments become more efficient

Creating a cooperative and coordinated logistics group

- Staff cross-training and resource sharing across logistics groups

- Common job description

- Linen Services
- Supply Logistics
- Mail Services
- Equip. Transport
- Patient Transport
- Pharmacy
- Central Sterile
- EVS
- Food Services
- Lab Services
Project Examples:

• Improved the linen distribution process to increase service levels, eliminate stock-outs, and reduce delivery trips, without increasing FTEs.
• Reduced requests for equipment by over 90% by implementing on-unit equipment cleaning and utilizing a real-time locating system.
• Performed layout redesigns for the package and mail receiving areas to improve throughput.
• Performed 5S projects in on-unit supply rooms to improve accessibility to needed resources.

For more details see: “Process Improvements in Hospital Supply Chain Logistics” in the 2014 Healthcare Systems Process Improvement Conference proceedings.
THE BILL OF RESOURCES

Using technology to enable support services to know what is needed, when it is needed, and where it is needed.
The Bill of Resources (BOR)

• Similar to OR Preference Cards
  • Includes supplies, equipment, and medications required for a given care activity
• Bridges the knowledge gap between logistics staff and nursing
  • Provides the information required for support service staff to collect and prepare everything for the clinician
• Additionally, allows for the identification of unwarranted variation and provides a platform to work towards standardization
Current Procedure Example: Supplies Required for IV Insertion

1. IV Flush Syringe
2. Blunt
3. Hub
4. Alcohol Pad
5. Extension
6. IV Start Kit
7. IV Needle (Choose correct size)
Current Nurse Travel for IV Insertion

Example Unit: HfAm8

AVERAGE NURSING TIME SPENT w/LOGISTICS: 19.8%

Hallway cart

Patient Room

PAR Room
Kits based on BORs will either pre-built or created as required depending on demand. Kits will be delivered to patient room.
Creating the BOR Database

Currently working with nursing to build database

- Documented resource requirements for 60+ procedures on 6 nursing units
- Working with the Professional Practice Council to standardize procedures

<table>
<thead>
<tr>
<th>No.</th>
<th>Procedure Description</th>
<th>No.</th>
<th>Procedure Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Primary Setup (START - PICC/Central Line/Interosseous)</td>
<td>13.</td>
<td>UA (Male)</td>
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<tr>
<td>2.</td>
<td>Primary Setup (START - Peripheral)</td>
<td>14.</td>
<td>MRSA/VRE Screen</td>
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<tr>
<td>3.</td>
<td>Primary Setup (CONTINUE - PICC/Central Line/Interosseous)</td>
<td>15.</td>
<td>Flu Culture</td>
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<td>4.</td>
<td>Primary Setup (CONTINUE - Peripheral)</td>
<td>16.</td>
<td>Istat Test</td>
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<td>5.</td>
<td>Secondary Setup (START - Peripheral)</td>
<td>17.</td>
<td>Glucose Control</td>
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<td>7.</td>
<td>Primary Setup (Change - Tue/Fri Peripheral)</td>
<td>19.</td>
<td>Arterial Blood Gas Kit</td>
</tr>
<tr>
<td>8.</td>
<td>Primary Setup (Change - Tue/Fri - PICC/Central Line/Interosseous)</td>
<td>20.</td>
<td>Gastroccult Test</td>
</tr>
<tr>
<td>10.</td>
<td>UA C&amp;S (Female)</td>
<td>22.</td>
<td>Stool for Cdiff</td>
</tr>
<tr>
<td>11.</td>
<td>UA C&amp;S (Male)</td>
<td>23.</td>
<td>Sputum Culture</td>
</tr>
<tr>
<td>12.</td>
<td>UA (Female)</td>
<td>24.</td>
<td>PCA Setup w/Maintenance Infusion (Start - PICC/Central)</td>
</tr>
<tr>
<td>13.</td>
<td>UA (Male)</td>
<td>25.</td>
<td>PCA Setup w/Maintenance Infusion (Start - Peripheral)</td>
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<tr>
<td>15.</td>
<td>Flu Culture</td>
<td>27.</td>
<td>Humidified Oxygen Setup With Extension Nasal Cannula</td>
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<tr>
<td>18.</td>
<td>Glucose Patient Test</td>
<td>30.</td>
<td>Face Tent Setup with Cannula</td>
</tr>
<tr>
<td>19.</td>
<td>Arterial Blood Gas Kit</td>
<td>31.</td>
<td>Humidified Trach Collar</td>
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<td>20.</td>
<td>Gastroccult Test</td>
<td>32.</td>
<td>NG Tube Placement</td>
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<td>21.</td>
<td>Hemoccult Test</td>
<td>33.</td>
<td>Suction Setup</td>
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<td>22.</td>
<td>Stool for Cdiff</td>
<td>34.</td>
<td>Suction Setup (Chest Tube)</td>
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<td>23.</td>
<td>Sputum Culture</td>
<td>35.</td>
<td>Suction Setup (NG Tube)</td>
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<tr>
<td>24.</td>
<td>PCA Setup w/Maintenance Infusion (Start - PICC/Central)</td>
<td>36.</td>
<td>Suction Setup (Deep)</td>
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<tr>
<td>25.</td>
<td>PCA Setup w/Maintenance Infusion (Start - Peripheral)</td>
<td>37.</td>
<td>Suction Setup (Yankauer)</td>
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<td>27.</td>
<td>Humidified Oxygen Setup With Extension Nasal Cannula</td>
<td>39.</td>
<td>PEG Tube (Flush/Administer Meds/Feeds)</td>
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<tr>
<td>28.</td>
<td>Non-Humidified Oxygen Setup Nasal Cannula</td>
<td>40.</td>
<td>NG Tube (Flush/Administer Meds/Feeds/Suction)</td>
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<tr>
<td>30.</td>
<td>Face Tent Setup with Cannula</td>
<td>42.</td>
<td>Feeding Pump Setup</td>
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<tr>
<td>48.</td>
<td>Sacral Wound Wet To Dry</td>
<td>49.</td>
<td>Blood Administration Setup (Peripheral - line)</td>
</tr>
<tr>
<td>49.</td>
<td>Blood Administration Setup (Peripheral - line)</td>
<td>50.</td>
<td>Blood Administration Setup (PICC/Central/Interosseous)</td>
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<tr>
<td>51.</td>
<td>Incontinent Care Kit</td>
<td>52.</td>
<td>Normal Saline Solution Bolus Infusion (Peripheral Site)</td>
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<tr>
<td>53.</td>
<td>IVP Medication</td>
<td>54.</td>
<td>Ileostomy and Colostomy Wafer Change</td>
</tr>
<tr>
<td>55.</td>
<td>Trach Kit Plastic</td>
<td>56.</td>
<td>Trach Kit Metal</td>
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<tr>
<td>57.</td>
<td>Foley Insertion Kit</td>
<td>58.</td>
<td>Straight Cath Kit Per Protocol</td>
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<td>59.</td>
<td>IV Fluid To Saline Lok Change Over Kit</td>
<td>60.</td>
<td>IV Flush Kit (Peripheral)</td>
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<td>61.</td>
<td>IV Flush Kit (Central/PICC)</td>
<td>62.</td>
<td>IV Site Discontinue Kit</td>
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<tr>
<td>63.</td>
<td>Contact Isolation Kit Setup</td>
<td>64.</td>
<td>Droplet Isolation Kit Setup</td>
</tr>
<tr>
<td>65.</td>
<td>Airborne Isolation Kit Setup</td>
<td>66.</td>
<td>C-Diff Isolation Kit Setup</td>
</tr>
</tbody>
</table>
THE CARE SUPPORT ASSISTANT

Bridging the gap between support services and the frontline of care.
The Care Support Assistant (CSA)

Performs non-clinical tasks in-order to give time back to nursing staff for improved patient care

Closes the gap in the current supply chain
  ➢ Moving “point-of-use” to the point-of-care

Eliminating the 4 H’s:
  ➢ Hunting, Hoarding, Hiding, & Hoping

Responsible for communication with support service staff/departments and distribution of resources to a specific zone/unit
Typical CSA Tasks

- Gathers resources for clinical staff as requested
- Supply and linen ordering and stocking
- Creates bed and bath kits
- Restocks isolation caddies and ensures proper signage
- OmniCell (Rx) restocking
- Restocks med carts and med rooms
- Urgent patient transports

- Equipment cleaning and management
- Removes food trays and soiled linen from patient rooms
- Assists housekeeping with room cleans on discharge
- Performs room setup prior to admission with proper supplies and equipment
- Patient belongings collection
Current State of CSA Program

CSAs are currently staffed on one Charter Floor

- Charter Floor is 24 bed med/surg unit
- CSAs previous experience includes: Nursing Assistant, Logistics (supply distribution), Linen Services, Equipment Management, Environmental Services

Provide support 7 days per week

- Monday thru Friday 2 shifts (6a-2:30p, 1:30p-10p)
- Sunday thru Saturday 1 shift (6a-6:30p)

Preparing for Go-Live on 2 additional units (Mar ‘15)

- 28 bed Med/Surg Unit
- 19 bed Special Care Unit
What are the clinical staff saying?

“I haven’t been in the supply room in days.”
~ Charter floor nurse

“I wouldn’t know what to do without the CSAs now.”
~ Charter floor nursing assistant

“I feel like my mornings go smoother. I don’t have as many interruptions.”
~ Charter floor nurse

“Why doesn’t my floor have a CSA? How do we get them?”
~ RN who floated to Charter Floor from another unit
In what ways have the CSAs positively impacted our unit?

January 5, 2015

1. More time at the bedside for NAs.
2. Transporting patients to the main entrance at discharge.
3. Save time so NAs and nurses can get more done, especially with Isolation rooms, where going in and out takes longer because of gowning.
4. They save us time by preparing isolation rooms.
5. I love them!
6. They keep the storage rooms well organized.
7. They stock med carts.
8. They are page-able from any computer, they pass fresh water each morning.
9. Extremely helpful during RRTs to run for supplies!!
10. Stocked supplies, clean, orderly
11. We can’t do it w/out their help. We need each one!
12. They set up rooms for admits!
13. They order our supplies.
<table>
<thead>
<tr>
<th>Charter Floor Data</th>
<th>Feb '10</th>
<th>Jan '14</th>
<th>Jul '14</th>
<th>Jan '14 to Jul '14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing Practice</td>
<td>65.2%</td>
<td>63.8%</td>
<td>73.0%</td>
<td>+9.2%</td>
</tr>
<tr>
<td>Others</td>
<td>16.3%</td>
<td>15.1%</td>
<td>12.3%</td>
<td>-2.8%</td>
</tr>
<tr>
<td>Logistics</td>
<td>18.5%</td>
<td>21.1%</td>
<td>14.7%</td>
<td>-6.4%</td>
</tr>
</tbody>
</table>

**Nursing Practice**
- Patient Care Activities
- Patient/Family Education
- Documentation

**Others**
- Nonclinical
- NVA - Opportunity
- Unit-Related Functions

**Logistics**
- Waiting
- Looking/Retrieving
- Delivering
- Traveling
- Other Logistics

Includes 3,438 observations from the charter floor unit. Samples were taken during each hour of the week.
Project HELP Impact

Support Services Re-Engineering

✓ 378 delivery trips per week eliminated (hospital-wide)
✓ 4.7% decrease in supply cost per patient day (Charter Floor)

The Bill of Resources (BOR)

✓ 66 high-use kits have been documented on 6 nursing units
✓ Using this information to help drive system standardization
✓ Developing a nurse supply request system
Project HELP Impact

The Care Support Assistant (CSA)
Charter Floor Go-Live was January 2014

✓ 14.4% increase in time spent with patients
  – Based on work sampling study (see slide 14)

✓ 39.6% more RN time in patient rooms vs. comparable units
  – Based on RTLS staff tags

✓ 13.2% increase in job satisfaction for RNs
  – Based on RN satisfaction survey (Fall 2013 compared to Spring 2014)

✓ 15.7% reduction in Observed to Expected Length of Stay
  – Data for 2/13-9/13 compared to 2/14-9/14
THANK YOU FOR ATTENDING!

WHO HAS QUESTIONS?

Please feel free to contact me with any additional questions.

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570-214-7029

You can also find me at the SHS and IIE annual conferences.

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Keynote Speakers – Day 1

Kim Barnas

• Faculty, ThedaCare Center for Healthcare Value
• Author, *Beyond Heroes, A Lean Management System for Healthcare*
• M.S. in healthcare administration and served as a senior vice president of ThedaCare and president of Appleton Medical Center and Theda Clark Medical Center.
• Development of a lean management system designed to deliver improved performance through a predictable process that develops leaders, identifies defects, solves problems and develops people.
Dr. Chuck Webster  
EHR Workflow Inc.

- He earned his degree in medicine at the University of Chicago along with degrees in accountancy, industrial engineering, and intelligent systems.
- Designed the first undergraduate program in medical informatics, was a software architect in a hospital MIS department, and also vice president and chief medical informatics officer for an EHR vendor for more than a decade.
- Ceaseless evangelist for process-aware technologies in healthcare, including workflow management systems, business process management and dynamic and adaptive case management.
Healthcare Systems Engineering Report to the U.S. President

**Moderator:** Heather M. Young, Ph.D., R.N., F.A.A.N.

- A nurse leader, educator and scientist and a nationally recognized expert in gerontological nursing and rural healthcare.
- Dr. Young is also the primary investigator for a recently approved $2.1 million Patient-Centered Outcomes Research Institute study seeking to improve health for individuals with diabetes.
- Co-director of the new UC Davis Latino Aging Research Resource Center.
- Served as a member of the Presidential Council of Advisors on Science and Technology Working Group on Systems Engineering for Healthcare.
Conference Tracks

i. Process Improvement
ii. Leadership and Change Management
iii. Operations Research and Analytics
iv. Population Health Management
v. Bridging the gap between education, research and care delivery
vi. Quality and Safety
vii. Future of PI Experts – Cross Industry Learning's
viii. Education
ix. Information Technology
Pre-Conference Workshops

- **Jump Start Your Clinical Analytics Program to Accelerate Improvement Results**
  - Julie Bartels and Brian Veara, ThedaCare Center for Healthcare Value, Cort R. Garrison, M.D., Salem Hospital, Christopher Elfner, Bellin Health Systems

- **Practical Advice and Real-World Examples for Improving Surgical Performance**
  - Keith Poole, khrusallis, Joseph Swartz, Franciscan St. Francis Health

- **Mastering Your EQ – Emotional Intelligence – The Key to Change Leadership Success**
  - Jean Ann Larson, Jean Ann Larson & Associates

- **Measuring and Managing Costs Using Time-Driven Activity-Based Costing**
  - Derek Haas, Harvard Business School
Student Activates

• Student Welcome Reception
• Poster Competition
• Volunteer Opportunities
• Mentoring Program
• The opportunity to listen and learn from the paper competition presentation and the simulation case study competition
Young Professionals Program

- Panel session presentation highlighting careers of several YP program professionals
- YP recommended conference sessions to highlight those that may be of particular interest to program participants
- Coaching program to pair up participants with senior members
- Meet ups at welcome reception, conference meals, and networking breaks
- YP Dutch treat dinner outing
Poster Sessions and Vendor Exhibits

- Binghamton University
- Cardinal Health Performance Improvement Consulting
- Comindware
- CreateaSoft
- FlexSim HC
- FormFast
- Northeastern University Healthcare Systems Engineering Institute
- Khrusallis
- Lehigh
- Wolters Kluwer-Lippincott Solutions
- McKesson’s
- Minitab
- Nebraska Methodist College
- North Carolina State University ISE
- Ohio University
- Parallon
- Performance Logic
- The Quality Group
- Simio
- SIMUL8
- Society for Health Systems
- The Society of Cardiovascular Patient Care (SCPC)
- Truven Health Analytics
- University of Tennessee Graduate & Executive Education
- U.S. News Hospital Data Insights
What to Expect

• Multitude of networking opportunities
  – Meeting Match App (http://meetingmatch.com)
  – Dutch treat dinners, book signing, receptions

• Excellent continuing education opportunities
  – Workshops, Tours, Conference sessions, Poster presentations

• Fantastic opportunity to reconnect or collaborate with peer practitioners

• Environment for new improvement idea generation
  – Access to cutting edge practitioners from world-class institutions
Oh…and we like to have a little fun

- **Networking:**
  - Student Reception
  - Welcome Reception
  - Networking Reception

- **Dutch-Treat Dinners**
  - Copper Canyon Grill Restaurant
  - Cuba Libre
  - Maggiano’s Little Italy
  - Marlowe’s Tavern
  - Taverna Opa
  - Tommy Bahama Restaurant & Bar

- **Local Music Venues**

- **Shopping at Pointe Orlando**

- **Theme Parks:** Discounts through [www.visitorlando.com](http://www.visitorlando.com)
Join us in Sunny Orlando, FL!

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