Using Value-Added Analysis to Improve an Emergency Department

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• Our health care system includes five hospitals:
  - UMass Memorial Medical Center (Worcester, MA)
  - Clinton Hospital (Clinton, MA)
  - HealthAlliance Hospital (Leominster and Fitchburg, MA)
  - Marlborough Hospital (Marlborough, MA)
  - Wing Memorial Hospital (Palmer, MA)

• Largest health care system in Central and Western Massachusetts
  – 1,125 beds
  – 60,000 inpatients in 2011
  – 1.4 million outpatients visits in 2011
  – Nationally acclaimed specialists
    • Cardiology, orthopedics, cancer care, diabetes, newborn intensive care, children’s services, women’s services, emergency medicine and trauma

• Clinical partner of the University of Massachusetts Medical School
• Visit www.umassmemorial.org for more information
UMass Memorial Health Care

**Process Improvement**

- **Mission Statement:** Enable improvements in patient-centered care, quality, safety, efficiency and staff satisfaction by using Patient-centered care principles with a Lean approach

- Division of Quality & Patient Safety, team of 7 PI Specialists, and Director of PI

- Over 2000 employees have received formal PI classroom training
  - 25% of UMMHC employees have had some form of Patient-Centered Lean training
  - Brown Bag lunches, just-in-time training, departmental education sessions
Case for change

US spends roughly $750 Billion annually on unneeded care, intricate paperwork, fraud and other waste in health care (IOM, 2012)

In recent years, new technologies, EMRs, payers and regulatory bodies have added tasks to clinical and frontline staff employees.

– Process Changes
  • EMRs (Holden and Karsh, 2010; Carayon et al., 2006; Linder et al., 2009)

– Outcomes
  • Medical Errors (Steyrer et al., 2012)
  • Physician Burnout (Wright et al., 2012)
  • Staff Satisfaction (Rathert and May, 2007)

But, what has been taken off their plates? Has the same proportion of time intensive work been taken off?
Types of Work

Value-Added Work
Activities that transform material, information, or people into something that the customer cares about ($)
- Diagnosis, treatment, care plan

Required Non-Value
No value in the customer’s eyes, but can’t be avoided
- Billing, Regulatory tasks

Pure waste – Non Value
Consumes resources but doesn’t add value.
- Looking for supplies
- Staff waiting
- Re-work, redundant paperwork
Value-Added Analysis

• Value-Added Analysis helps us understand the current state of people’s workload:
  – Are they working to their license or to what we hired them to do?
  – Are there things that they can stop doing? (i.e. - Duplicate work)
  – Is there waste that we can just eliminate?
  – Are there tasks that others can do for them?
  – Who really should be doing what to maximize the efficiency of patient flow?
  – Can we increase the value-added time with patients? – thereby, increasing employee satisfaction and patient satisfaction
Value-Added Analysis Example

Value-Added Work
- Role needed
- Role not needed

Non-Value Added Work
- Role needed
- Role not needed

WASTE
- Eliminate
Value-Added Analysis Tool

<table>
<thead>
<tr>
<th>#</th>
<th>Task Description</th>
<th>VA</th>
<th>NVA Required</th>
<th>Waste</th>
<th>Does this have to be done by a Nurse?</th>
<th>Time to Complete (Min/Max/Average)</th>
<th>Frequency (times done per day, wk)</th>
<th>Time of day when completed</th>
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</table>

**Departments starting to use this tool:**
1. University ED
2. University EMH
3. Hand Therapy at Hahnemann Campus
4. Ambulatory Front-end Design

**How do we increase patient and staff satisfaction and efficiency?**
**We increase our Value-Added time!**
**We can not afford to have our clinical staff working at 20-40% Value-Added time!**
University Campus Emergency Department

• Problem Statement:
  – University Hospital ED staff is not working to their highest capacity and a portion of the tasks they perform incorporate pure waste, therefore lowering the amount of time spent on value added direct patient care.

• Current State:
  – Low staff satisfaction
  – Low patient satisfaction
  – Long patient wait times
  – Inefficient processes
ED Nurse Analysis

- VA tasks that can be done by other staff:
  - Deliver food tray
  - Assign patients in IBEX
  - ADL (portion)

- NVAM tasks that can be done by other staff:
  - Housekeeping
  - Transport patients (NON-ICU)

- Waste tasks:
  - Searching for equipment and supplies
  - Searching/waiting for the physician
  - Searching for forms
  - Rework with Pharmacy – extra phone calls, incorrect labs

- Value Added - nurse needed 51%
- Value Added - RN not needed 9%
- NVAM Mandatory - RN needed 13%
- NVAM Mandatory - Nurse not needed 9%

Waste 18%
ED Physician Analysis

- VA tasks that can be done by other staff:
  - Help change/undress the patient
  - Transporting and equipment for hallway patients in need of rectal/pelvic exams
  - Med Reconciliation

- NVAM tasks that can be done by other staff:
  - Locate patient chart
  - Searching for equipment/supplies & dealing with broken equipment/supplies
  - Resolving issues with labs – incorrect or missing

- Waste tasks:
  - Searching multiple IS systems for patient info.
  - Looking for forms and rewriting orders (paper charting)
  - Looking for nurse
  - Waiting for transport
Future Project Work

- Value-Added Analysis on other staff members
- Key take-aways and opportunities
- Resource redistribution
- Spread of Value-Added Analysis in other clinics/departments
Thank You!

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Other References