Scaling the Supply Chain: Perspectives from Academic Medical Centers

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Conflict of Interest

Jane Pleasants has no real or apparent conflicts of interest to report.

George Cheely MD has no real or apparent conflicts of interest to report.

Franco Sagliocca has no real or apparent conflicts of interest to report.
Agenda

**Duke University Health System:** Pursuit of Better Outcomes, Lower Cost through Care Redesign and Clinical Supply Chain Integration
- George Cheely, MD, Medical Director, Care Redesign
- Jane Pleasants, VP, Supply Chain

**Mt. Sinai Health System:** Building the technology and data infrastructure to enable the Clinically Integrated Supply Chain
- Franco Sagliocca, Corporate Director, Supply Chain
Learning Objectives

• Identify the common elements, success points, and essential components of the clinically integrated supply chain in an academic medical setting

• Discuss the drivers of scale, the strategies needed to achieve the next level, and how to maintain a scaled down version of a clinically integrated supply chain

• Discuss the strategies needed for inter-professional collaboration across the healthcare ecosystem to achieve shared goals

• Develop a vision for integrating the community across the care continuum and beyond the walls of the healthcare organization
ACA: Focus on outcomes & cost

Care Redesign Oversight Committee formed in 2011 to:

- Improve the experience of care (safety, quality, and satisfaction)
- Improve the health of populations
- Reduce the cost of care

Care Redesign Oversight Committee Responsibilities

- Provide oversight for the Care Redesign program
- Review & approve team charters & initiatives
- Hold teams accountable to milestones & targets
- Resolve issues & remove barriers to progress
- Drive acceptance across departments & entities
- Support prioritization of implementation efforts

CR Oversight Committee Selected Members

Chief Medical Officer, DUHS
Executive Vice President, DUHS
Chief Nursing Officer, DUHS
Hospital Presidents
Chief Health Information Officer, DUHS
Associate Chief Financial Officer, DUHS
VP Supply Chain, DU and DUHS
Associate VP Performance Services, DUHS
Clinical Department Chairs (Ad Hoc)

Care Redesign Program Members

George Cheely, Medical Director
Tom Hopkins, Associate Medical Director
Judy Prewitt, Nursing Lead
Caitlin Daley, CR Program Manager

Improvement Facilitators

Clinical Data Analytics

Key Collaborators: Finance, Health IT, Pharmacy, Procurement, EBM Librarians
Analytics to Gauge Variation

Efficient Cases are cases with more efficient internal practices as compared to an average case based on cost (avg. variable cost per case).

Inefficient Cases are cases with less efficient internal practices as compared to an average case based on cost (avg. variable cost per case).

<table>
<thead>
<tr>
<th>Opportunity Area</th>
<th>Variability Management Levers</th>
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<tbody>
<tr>
<td>Length of stay</td>
<td>Standardization of protocols, handoff coordination, operational throughput improvement</td>
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<tr>
<td>Level of care</td>
<td>Agreed-upon criteria, capacity management efforts</td>
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<tr>
<td>Pharmaceuticals</td>
<td>Stewardship programs, therapeutic conversion, adoption of chemotherapy regimens</td>
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<tr>
<td>Supplies</td>
<td>Streamlining of vendors, evidence-based product introduction governance</td>
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Total Inlier Cost Variance x 30 - 40%

Total Outlier Cost Variance x 15 - 25%
Translated clinical goals to measures

**Care Redesign Organizational Goals**
- Pursue care delivery innovations and advancement of quality and safety through redesign of care for select populations
- Goals include: Quality, Patient Safety, Patient Experience, Finance and Growth, and Patient Population-specific measures

**Outcome Measures**

- **Avoid Extra Days in the Hospital (Length of Stay)**
- **Reduce Unplanned Returns (30 Day Readmissions)**
- **Improve Survival (Mortality)**
- **Improve Experience of Care (HCAHPS)**
- **Improve Efficient Use of Resources (Cost / Case)**

**Process Measures: Example Hip and Knee**
- **Process Metric**: % patients who ambulated with physical therapy on POD 0
- **Quality Metric**: % of patients readmitted within 30 days and 90 days
- **Safety Metric**: % urinary catheter’s removed POD 0

**Metrics must be relevant for a cross-section of stakeholders**

To *clinicians*, who must believe that the metric links activities to outcomes …

To *finance*, who must ensure that expected margin impacts are visible on the bottom line …

To *performance management*, who must be able to get the information into the right hands in a timely and predictable way …
# Executed tactics to achieve impacts

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Improvement Tactics</th>
<th>Intended Impacts</th>
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<tbody>
<tr>
<td>Improve Planning</td>
<td><strong>Coordinated support needed after discharge from first clinic visit</strong></td>
<td>Increase patients able to be discharged to home</td>
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<tr>
<td></td>
<td>• Defined clinical standards to identify patients appropriate for discharge home instead of post-acute care</td>
<td></td>
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<tr>
<td>Improve Discharge Facilitation</td>
<td><strong>Multidisciplinary team optimized discharge processes</strong></td>
<td>Reduce length of stay and readmissions</td>
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<td></td>
<td>• Revised discharge instructions and care coordination tactics to align with overall plan for care</td>
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<td>Enhance Patient Experience</td>
<td><strong>Developed multi-model pain management approach</strong></td>
<td>Improve satisfaction with pain management</td>
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<tr>
<td></td>
<td>• Standardized pain management plan and integrated into patient education materials as well as nursing care and teaching plans</td>
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<tr>
<td>Define Implant Standards</td>
<td><strong>Coordinated clinical decisions &amp; contracting to reduce variation</strong></td>
<td>Reduce implant spend through utilization and pricing initiatives</td>
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<tr>
<td></td>
<td>• Defined high cost implant usage standards based on evidence</td>
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<td>• Leveraged stakeholders to support vendor negotiations</td>
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Monitor/sustain performance over time

- Tableau tool housed centrally
- Data updated monthly
- Targets set annually
- GPO peer cohorts as benchmarks
- Data analytics expert within CR program maintains and innovates

**PRIMARY HIP REPLACEMENT**

**DUH**

**Quality and Patient Safety**
- Total Discharges
- ALOS
- LOS Index
- CMI
- 30 Day Unplanned Readmission Rate
- 90 Day Unplanned Readmission Rate
- Mortality Index
- Observed Mortalities
- Avg Days to Sched Follow Up Appt
- % Follow Up Appts Sched within 7 Days
- % Follow Up Appts Sched within 30 Days
- Total # Scheduled Follow Up Appts
- % of Discharges to Home
- % of Discharges to HH
- % of Discharges to SNF

**Patient Experience**
- HCAHPS: Overall Rating of Hospital
- HCAHPS: Communication with doctors
- HCAHPS: Communication with nurses
- HCAHPS: Pain communication
- HCAHPS: Discharge Information
- HCAHPS: # Responses

**DUH Primary Hip Direct Cost per Case**

<table>
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<tr>
<th>Period</th>
<th>FY19 YTD</th>
<th>Last FY</th>
<th>Meets Target</th>
<th>Exceeds Target</th>
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- Tableau tool housed centrally
- Data updated quarterly
- Testing different approaches to risk-adjust cost targets
- Collaboration with Finance Director of Clinical Decision Support
SupplySight: Executive Summary

SupplySight serves surgeons, administrators, the procurement team, and their interaction;

SupplySight incorporates timely, *actual purchase pricing* with surgical usage; and

SupplySight provides drillable *details*; This builds tremendous stakeholder trust.

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Data Structure

The following pages highlight real examples used during discussions with surgeons in 2018
Overview of Spine Program Savings

SupplySight was used to show the impact of previous initiatives to surgeons while discussing future opportunities.

Surgeons saw that their average spine implant cost per case decreased roughly 20% from January 2015 costs.

The dual-source agreement reduced the number of vendors and instrument trays.
Seven of the ten surgeons with highest volumes have decreased avg spine supply cost per case since Calendar Quarter 1 2015. [excludes revisions procedures, neurostim and biologic items, includes accessories and niche] Jan15-Oct16 by Quarter; list sorted descending by number of cases.
SupplySight allowed surgeons to compare detailed costs of truly similar procedures. In this example, median case costs vary between $4,300 and $4,660 for 2 to 3 Segment ACDFs.
Mount Sinai Health System

Creating the technology and data infrastructure to enable a clinically integrated supply chain

Franco Sagliocca, Corporate Director, Supply Chain
MSHS Business Technology Mission

• Provide technology and analytics that support Supply Chain’s provision of seamlessly coordinated care to a diverse community, and the unrivaled advancement of medicine through research.

Cost
Drive savings at the pump, and at the bed-side (utilization) through a procure to pay process that is simple and efficient.

Quality
Source, and procure superior product/service supported by supplier in-servicing, and support.

Outcomes
Source, and procure product/service that enables extraordinary care.
Our Plan

Supply Chain

Communication Identification Integration

Assimilation Adaptation

Exploration Preparation

2013 - 2015

2016 - 2017

2018 - 2019

Business Technology

Centralize Transaction

Stabilize Data Integrity

Improve Management

- Communication Identification Integration
  - Staffing
  - Data
  - System

- Assimilation
  - Operational/Functional alignment
  - Standard process
  - Contract Alignment

- Adaptation
  - Education
  - Data Sharing

- Exploration/Preparation
  - Value Analysis
  - Standardization
  - Procure to Pay
  - Contract, Rebate, and Content Management
Adoption Curve
Questions

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Mount Sinai

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