Building Health Systems Through Clinical Integration

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President, Yale New Haven Health System
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Today’s Presentation

- Healthcare environment
- Health system integration
- Yale New Haven Health case study
Challenges

- Reimbursement pressures
- Volume to value transition
- Aging population / chronic disease management
- Provider scarcity
- Consumer preferences
- Proliferation of new and expensive technologies (e.g. genetics, implantable devices, etc.)
- Volatile political environment; negative perceptions of health care
- Continuous focus on clinical optimization
Increased Health Care Spending

Growth in national health expenditures (NHE), gross domestic product (GDP) and NHE as a share of GDP, 1989-2015

Increased Consolidation

Source: American Hospital Association, Trendwatch Chartbook, 2016, Chart 2.9.
Why Affiliate?

- Need to drive broader efficiencies while increasing high quality outcomes
- Critical to preserve and grow access
- Major shifts in reimbursement models and significant cuts in government payments
- Increasing consumer demands for integrated, collaborative care
- Population health infrastructure is costly
- Efficient access to capital
Consolidation Vs. Integration

Consolidation ≠ Integration
What Is True Integration?

Health system recognized for its:

- Organizational structure centered on patients’ clinical needs throughout the care continuum
- Strong multidisciplinary collaboration
- Unique care signature / outstanding clinical outcomes
- Single medical record for each patient, accessible across all sites of service
- Engaged employees and physicians
- Continued focus on waste reduction / performance improvement
## Integrated Health System Infrastructure Components: Working Framework

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<tr>
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Yale New Haven Health Case Study
Yale New Haven Health At-A-Glance

- Five Hospitals
  - Yale New Haven Hospital
  - Bridgeport Hospital
  - Greenwich Hospital
  - Lawrence + Memorial Hospital
  - Westerly Hospital
- 2,563 Licensed Beds

- Primary teaching hospital of Yale School of Medicine
  - > 5,000 medical staff members
  - 1,400 trainees
- System physician foundation: Northeast Medical Group
  - 835 providers
Academic Medical Center / Quaternary Referral Center

Level 1 Trauma Center

Transfer Center (Y-Access)

Tele ICU

Living Donor Transplantation

ECMO

Neurovascular Interventions

Genomics

Helicopter Transport

Neonatal ICU
September 12, 2012: Yale New Haven Hospital / Hospital of Saint Raphael Integration

- Hospital of Saint Raphael
  - 511 beds distressed Catholic Hospital
  - High quality / strong clinical programs
- Integration vision
  - Two-campus hospital providing integrated care
  - Enhanced quality, access and efficiency
- YNHH is now the 7th largest hospital in the United States
Yale New Haven Health Overview

$4.4B revenue
129,100 inpatient discharges
2.5M outpatient encounters
24,000 employees
7,100 medical staff
390 sites

*does not include Yale School of Medicine
Organizational Structure

- System President driving clinical and integration efforts
- Centralized clinical leadership
  - Chief Medical Officer / Chief Clinical Officer
  - Chief Nursing Officer
- Service line model: integrated multidisciplinary care throughout the care continuum
  - Clinical and administrative leadership
## Service Lines at Yale New Haven Hospital

<table>
<thead>
<tr>
<th>Service Line</th>
<th>Revenue</th>
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<tbody>
<tr>
<td>Smilow Cancer Hospital</td>
<td>$532M</td>
</tr>
<tr>
<td>Heart and Vascular</td>
<td>$309M</td>
</tr>
<tr>
<td>Transplant</td>
<td>$20M</td>
</tr>
<tr>
<td>Neurosciences</td>
<td>$112M</td>
</tr>
<tr>
<td>Children’s Hospital</td>
<td>$209M</td>
</tr>
<tr>
<td>Musculo-skeletal</td>
<td>$145M</td>
</tr>
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Smilow Cancer Hospital Service Line Construct

Clinical Trials
- 900 therapeutic clinical trial enrollment
- Dedicated Phase I clinical trials unit

Complementary and Alternative Medicine

Disease Teams
- Brain Tumor
- Breast Cancer
- Endocrine
- Gastrointestinal Cancers
- Gynecologic Cancers
- Head and Neck Cancers
- Hematology
- Melanoma
- Pediatric Oncology
- Prostate and Urologic Cancers
- Sarcoma
- Thoracic Oncology

Cancer Center Centers
13 Smilow Cancer Centers throughout Connecticut

Genomics
Neurosciences Service Line Construct

Clinical Research
- Pioneering work in genetics and brain aneurysms
- 10 research centers
- Translational focus

Clinical Programs
- Stroke
- Alzheimer’s and Dementia
- Brain Tumors
- Epilepsy
- Parkinson’s Disease, Tremor, Huntington’s and Ataxia
- Multiple Sclerosis
- Neuromuscular Disorders
- Spinal Disorders
- Trigeminal Neuralgia

Helicopter Transport / Y Access

Tele Stroke Network
- 9 Hospitals participating in statewide network

Imaging / MR OR / Interventional Laboratories
High Reliability Organization / Safety and Quality

- Commitment to becoming a high reliability organization → zero events of harm
- Common care protocols / care pathways across all Yale New Haven Health system sites
- Reduce / eliminate care variances
- Superior clinical outcomes

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High Reliability Organization

Our Focus
Yale New Haven Health is committed to patient safety. We are on a multiyear journey to become a high reliability organization, aimed to reduce preventable harm to patients and employees.

High Reliability Principles
- Preoccupation with failure
- Sensitivity to operations (front line)
- Don’t simplify interpretations

Deference to expertise (not hierarchy)
Detect, contain, remediate – fast

CHAMP Behaviors
Guidelines

Communicate Clearly
- Repeat Backs / Read Backs with Clarifying Questions
- Phonetic and Numeric Clarifications

Handoff Effectively
- Situation, Background, Assessment, Recommendation (SBAR)

Attention to Detail
- Self-check using Stop, Think, Act Review (STAR)

Mentor Each Other – 200% Accountability
- Cross-Check and Coach Teammates
- Speak Up for Safety: “I Have a Concern”

Practice and Accept a Questioning Attitude
- Validate and Verify
- Stop the Line – “I need clarity!”

getting to ZERO events of harm
Rolling 12 Month Serious Safety Events

$28,456 per event
Outstanding Patient Experience

- Commitment to an exemplary patient experience at all times throughout the care continuum to foster trust and loyalty
- Staff expectations / behaviors incorporated into annual review process
Patient Experience Guiding Principles

- To be valued
- To be listened to
- To be cared for
- To be cared about
- To be treated as an individual
Ambulatory Strategy and Network

- Key current and future growth area
- Focus on access and convenience
- Common ambulatory vision
- Strategic plan established for the entire health system (undergoing revisions / being updated)

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**Integrated Electronic Medical Record**

- Required investment to provide coordinated care throughout the continuum
- Integrates patient vital signs in real time
- Decreases unnecessary testing and potential patient harm
- Patient engagement in care / access to medical record through MyChart
- Documentation tools

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Patient Care Device Integration
Request an Appointment

If you would like to schedule an appointment for a different reason, please call the clinic.

Expect a response within 2 business days.

From: Daniel J Barchi [E203109]

- **Wanted to see:** Elman, Matthew S. MD - PCP-
- **Would see:** Only the person I've selected
- **Reason for visit:** Annual Physical
- **Preferred dates:**
  - **From:** 10/1/2013
  - **To:**
- **Preferred times:**
  - Morning
  - Afternoon

I would like to see Dr. Elman for my annual physical

Maximum 5000 characters.

Send Cancel
MyChart Access

Add MyChart Home Dialysis Flowsheet Data

Step 1 of 2: Enter readings

Click Add Another Reading if you would like to enter data for more than one reading at this time.

When you are finished entering data, click Continue. Click Cancel if you do not want to save the data you entered.

Reading 1

Date: 3/26/2013

Time: 7:30 AM

Pre-dialysis blood pressure/systolic: 153

Pre-dialysis blood pressure/diastolic: 62

Pre-dialysis pulse: 59

Pre-dialysis weight (kg): 80.9
WOWs and Mobile Heartbeat

**WOW**
*(Workstation on Wheels)*

**Mobile Heartbeat**
Telemedicine

- Tele ICU / Tele stroke / Tele consults
- Opportunity to decrease length of time to access specialty care
- Rationalization of expenses and prudent use of rare specialist resources
- Provide required patient care follow-ups / decreases readmissions
- Preferred health access strategy by the Millennial generation

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Tele ICU
Clinical Redesign

- Clinical redesign: rapid clinical improvement cycles driven by front-line providers and interdisciplinary clinical teams
  - Projects are driven by physicians and supported by internal consultants
  - Quantifiable improvements in clinical outcomes / process efficiencies
- Engagement in strategic planning activities
- Communication and transparency
Clinical Redesign Guiding Principles

By instituting patient-centered evidence-based care improvements Clinical Redesign work drives value by improving the quality and safety of patient care, improving the patient and provider experience and delivering more cost-effective care.

Value = \frac{\text{Patient Experience} + \text{Quality of Care}}{\text{Cost of Care}}

Guiding Principles

- Decrease / Eliminate Adverse Events
- Optimize Utilization of Resources
- Decrease LOS / Improve Efficiency
- Improve Patient-Centered Outcomes
- Improve the Patient Experience
- Engage physicians and other providers
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<th>Clinical Redesign Sample Results</th>
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<tr>
<td><strong>Cirrhotic Patient Care</strong></td>
</tr>
<tr>
<td>▼ Readmission rate down 29%</td>
</tr>
<tr>
<td><strong>Sepsis Redesign ED</strong></td>
</tr>
<tr>
<td>▼ ED LOS down 14.3%</td>
</tr>
<tr>
<td>▼ ED Mortality down 23%</td>
</tr>
<tr>
<td><strong>COPD / PNA Management</strong></td>
</tr>
<tr>
<td>▼ COPD LOS &amp; Pneumonia LOS reduced by 11%</td>
</tr>
<tr>
<td><strong>Lab Optimization</strong></td>
</tr>
<tr>
<td>▼ 55% reduction in iStat labs</td>
</tr>
<tr>
<td><strong>Children’s Sickle Cell</strong></td>
</tr>
<tr>
<td>▼ 39% reduction in inpatient days</td>
</tr>
<tr>
<td><strong>ED Radiology Utilization</strong></td>
</tr>
<tr>
<td>▼ Total ED scan rate down 15%</td>
</tr>
<tr>
<td><strong>Surgical Tray Standard</strong></td>
</tr>
<tr>
<td>▼ 9,480 fewer instruments in circulation</td>
</tr>
<tr>
<td><strong>HVC Patient Flow</strong></td>
</tr>
<tr>
<td>▼ ICU LOS reduced by 17%</td>
</tr>
<tr>
<td><strong>TPN Utilization</strong></td>
</tr>
<tr>
<td>▼ % TPN started within 7 days of readmission down 37%</td>
</tr>
<tr>
<td><strong>Children’s PICU / RT</strong></td>
</tr>
<tr>
<td>▼ Overall LOS decreased by 25%</td>
</tr>
<tr>
<td>▼ PICU LOS down 39%</td>
</tr>
<tr>
<td><strong>Telemetry (BH)</strong></td>
</tr>
<tr>
<td>▼ 24% reduction in # patients on telemetry</td>
</tr>
<tr>
<td>▼ Telemetry unit LOS down 15%</td>
</tr>
<tr>
<td><strong>Surgical Pack Standard</strong></td>
</tr>
<tr>
<td>▼ GYN pack costs down 24%</td>
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<td>▼ PEDI pack costs down 13%</td>
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<tr>
<td><strong>Sepsis Redesign Med</strong></td>
</tr>
<tr>
<td>▼ ICU LOS down 11%</td>
</tr>
<tr>
<td><strong>PEG Tube Feeding</strong></td>
</tr>
<tr>
<td>▼ In patient LOS down 8%</td>
</tr>
<tr>
<td><strong>Hospitalist Labs</strong></td>
</tr>
<tr>
<td>▼ BMP orders reduce 6%</td>
</tr>
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Clinical Redesign – Clinical Outcomes

Days Reduced vs. Adverse Events Avoided over FY15 Q3 to FY16 Q4.
Clinical Redesign – One Year Financial Savings

$24M Cumulative Savings for FY 2016

FY16Q1  $6
FY16Q2  $13
FY16Q3  $16
FY16Q4  $24

$ Millions

FY16Q1 FY16Q2 FY16Q3 FY16Q4
Incentive Alignment

- Performance incentive aligned across all levels of the organization
- Clinical performance incentive funds and medical director support
Lessons Learned

- No substitute for full integration
- All infrastructure components required for success
- Broad engagement and support
- Relentless vision communication and progress reinforcement
- Patient is at the heart of the structure
- Constant evolution – never fully there