A BEHAVIORAL INTERVENTION TEAM FOR INTERNAL MEDICINE: YALE-NEW HAVEN HOSPITAL’S PROACTIVE, MULTI-DISCIPLINARY PSYCHIATRIC CONSULTATION SERVICE

Merlyn V. LaPaix, MSN, MBA, LNC
Stephen M. Merz, FACHE
William Sledge, MD
Learning Objectives

• Design and implementation of a proactive approach to mental health services on inpatient medical units
• Provider value and satisfaction with the program
• Funding strategy / Return on Investment
• Lessons learned and barriers to avoid
• Future directions
Outline for Discussion

• Background on Organization
• Overview of Behavioral Intervention Team (BIT)
• Culture in the medical center
• Financial approval process
• Conclusions and Q&A
The most disabling disorders before age 50

Cumulative disability-adjusted life years (DALYs) for the leading disease categories by age (2010, U.S.)

- Cardiovascular and Circulatory Diseases
- Neoplasms
- Mental and Behavioral Disorders
- Musculoskeletal Disorders
- Diabetes, Urogenital, Blood, and Endocrine Disorders
- Chronic Respiratory Diseases
- Other Non-communicable Diseases
- Neurological Disorders

From T. R. Insel, MD, Director, NIMH. Presentation to the National Association of Psychiatric Health Systems, March 11, 2014.
Inpatient Facilities

Psychiatric Hospital

Children’s Hospital

Smilow Cancer Hospital

York Street Campus

Saint Raphael Campus
BIT – Why we focused “outside” of the psychiatric hospital?

60,000 adult med-surg discharges
A Crowded field

Medicine

- H&V
- Oncology
- Surgery
- Psych
- Others

Yale University School of Medicine
The Untapped Potential Need

24,000 adult med-surg w/psychiatric diagnoses
EMERGENCE OF BIT

Origins of the Behavioral Intervention Team
Consultation Rate, Latency & Length of Stay Before, During & After Intervention

<table>
<thead>
<tr>
<th></th>
<th>Control, pre</th>
<th>Intervention</th>
<th>Control, post</th>
<th>Control, pre + post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases</td>
<td>257</td>
<td>62</td>
<td>274</td>
<td>531</td>
</tr>
<tr>
<td>Consultations/100 cases</td>
<td>9.3% (24)*</td>
<td>22.6% (14)</td>
<td>12.0% (33)*</td>
<td>10.7% (57)*</td>
</tr>
<tr>
<td>Consultation latency (days)</td>
<td>3.52 +/- 3.01*</td>
<td>1.44 +/- 0.88</td>
<td>2.64 +/- 2.58*</td>
<td>3.02 +/- 2.78*</td>
</tr>
<tr>
<td>LOS (days)</td>
<td>3.81 +/- 3.01*</td>
<td>2.90 +/- 2.12</td>
<td>3.66 +/- 3.92*</td>
<td>3.74 +/- 3.30*</td>
</tr>
<tr>
<td>% LOS&gt; 4 days (# cases)</td>
<td>27.6% (71)*</td>
<td>14.5% (9)</td>
<td>28.1% (77)*</td>
<td>27.9% (148)*</td>
</tr>
</tbody>
</table>

LOS- length of stay.
*Significantly different from intervention, P < 0.05.
Behavioral Intervention Team

**Multidisciplinary**
- Psychiatrist
- Nurse (clinical nurse specialist)
- Social Worker

**Domains of responsibility**
- Care of patient
- Support of medical and nursing staff
- Management of flow
Comparison of traditional and proactive models

<table>
<thead>
<tr>
<th>Trait</th>
<th>Traditional CL Model</th>
<th>Behavioral Intervention Team Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery of Service</td>
<td>Reactive</td>
<td>Proactive</td>
</tr>
<tr>
<td>Personnel</td>
<td>Single discipline - MD</td>
<td>Multi-discipline – MD, APRN, social workers</td>
</tr>
<tr>
<td>Case identification</td>
<td>Request by primary team</td>
<td>Screening based on records and nursing staff interaction</td>
</tr>
<tr>
<td>Mode of intervention</td>
<td>Advice to the primary team MD</td>
<td>Collaboration with nurses, social workers, and clinicians through close follow-up</td>
</tr>
<tr>
<td>Service Goals</td>
<td>Treatment recommendation, Risk reduction and crisis management</td>
<td>Prevention of behavioral barriers for medical care, avoidance of crisis, etc.</td>
</tr>
<tr>
<td>Location</td>
<td>As requested, all over the hospital</td>
<td>Embedded in assigned medicine units and co-location of personnel</td>
</tr>
</tbody>
</table>
Outcome Measures: Length of Stay for Pts with LOS <31 days and a Mental Health Intervention

<table>
<thead>
<tr>
<th></th>
<th>Pre-BIT (8/1/08 - 6/30/09)</th>
<th>BIT (8/1/09 - 6/30/10)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Discharges</td>
<td>535</td>
<td>509</td>
<td>26</td>
</tr>
<tr>
<td>Total Patient Days</td>
<td>3,900</td>
<td>3,385</td>
<td>515</td>
</tr>
<tr>
<td>ALOS</td>
<td>7.29</td>
<td>6.65</td>
<td>.64</td>
</tr>
<tr>
<td>SD (+/-)</td>
<td>5.76</td>
<td>5.75</td>
<td>.01</td>
</tr>
<tr>
<td>Total (LOS&gt;6 days)</td>
<td>45.2%</td>
<td>39.9%</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

T-test of log LOS=2.86, p<.004, T-test (untransformed) = 1.96, p<.05
Outcome Measures

1. Length of Stay
2. Patient Flow
   a) Potential Denied Days
   b) 30 Day Readmission Rate
   c) Constant Companion Use
3. Culture Change / Staff Satisfaction
4. Economic Benefits vs. Expenses
Impact on Patient Flow

- Potential Denied Days: delays among medical patients waiting to transfer to inpatient psychiatry, who could not be transferred due to unavailability of psychiatric beds.

- 30 Day Readmission Rate

- Constant Companion Use
Outcome Measures – Culture Change

• **In Medicine**
  - Nursing staff support and confidence---no longer “scared”
  - Just-in-time education
  - Integrates the multi-disciplinary management (social work, nursing and C/L services).
  - Prevention and Management of Disruptive Behaviors (PMDB)

• **In Psychiatry**
  - Improving the coordination and prioritization of psychiatric admissions
  - Requests from other services (OB, H&V, Oncology)
  - APRN role / importance—**terrific bridges**
Outcome Measures – Fiscal Measures

• Organization backdrop at the time. Where we were organizationally and capacity pressures
• How much to staff BIT?
• Efficiency (cost svgs)
• Credit for Backfill
• Iterative Approval process, built trust with pilots
• Incremental change over time
• Shift from FFS to value based reimbursement
Expenses (annualized) Per Employee Incremental (in addition to CL alone) Team Members

Psychiatrist: 0.5 FTE
Clinician Nurse Specialist: 1 FTE
APRN: 0.17 FTE
Social Work, MSW: 1 FTE

Costs = salaries plus indirects

$372,349
## Economic Summary

<table>
<thead>
<tr>
<th>Incremental Costs (to the Hospital)</th>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries (annualized)</td>
<td>$372,349</td>
<td></td>
</tr>
<tr>
<td>Benefits (savings to the hospital)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saved Costs (annualized)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost per Case Difference ($210 less for BIT X 509 cases)</td>
<td>$116,757</td>
<td></td>
</tr>
<tr>
<td>Constant Companion (reduction)</td>
<td>$104,093</td>
<td></td>
</tr>
<tr>
<td>Total Saved Costs Benefit (annualized)</td>
<td>$220,850</td>
<td></td>
</tr>
<tr>
<td>Revenue Backfill from BIT (57 cases X $12,682)</td>
<td>$789,070</td>
<td></td>
</tr>
<tr>
<td>Net Gain from BIT (100% occupancy)</td>
<td>$1,009,920</td>
<td></td>
</tr>
<tr>
<td>Total Potential Benefit</td>
<td></td>
<td>$637,571</td>
</tr>
<tr>
<td>Benefit - cost</td>
<td></td>
<td>$1,252</td>
</tr>
<tr>
<td>Per case</td>
<td></td>
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</tbody>
</table>
## BIT Program – Hospital Financials

### Volume-Based Care
- Ability to safely and seamlessly transition patients; reduces LOS
- For case-rate based payors, reduced LOS allows “backfill” of other cases for same direct expense
- Opportunity for $1,000,000 incremental revenue
- $372,000 in incremental expense
- **Net gain of $628,000**

### Value-Based Care
- Ability to safely and seamlessly transition patients; reduces LOS
- Under value-based payment systems, cost reduction is key.
- Patients transition more quickly to appropriate settings
- Cost per day in hospital is $221 lower in direct costs
- 1,598 in avoided days
- **Cost avoidance of $1,598,000**

Source: Advisory Board Company, 2013
Management Principles and Lessons Learned Along the Way

- BIT works in both FFS and “value” environments
- Much of Psychiatry’s future is “outside” of psychiatry
- Accurate screening process (must have an override)
- Clear idea of how to respond / what to do (protocols)
- Selecting the right staff, particularly the APRN
- Training; explicit understanding of the nature of suffering
- Changing dynamic and flow between med/surg floors and psychiatry
- Culture impact was most influential factor in our success
THANK YOU

QUESTIONS?
Contact Information

Merlyn V. LaPaix, MSN, MBA, LNC
Director of Psychiatric Nursing
Yale-New Haven Hospital
184 Liberty Street, New Haven, CT 06509
203.688.9216
merlyn.lapaix@ynhh.org

Stephen M. Merz, FACHE
Vice President and Executive Director, Behavioral Health
Yale-New Haven Hospital
184 Liberty Street, New Haven, CT 06509
203.688.2185
steve.merz@ynhh.org

William H. Sledge, MD
George D and Esther S Gross Professor of Psychiatry Yale School of Medicine,
Department of Psychiatry
Yale New Haven Hospital
184 Liberty Street, New Haven, CT 06509
203-688-9711
william.sledge@yale.edu
APPENDIX
References