The Financial Benefits of Clinical Integration: Memorial Hermann Accountable Care Network

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MHMD Physician-In-Chief

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Prism Healthcare Partners LTD
Memorial Hermann Network

MH Health System
- $5 Billion Total Operating Revenue
- 4.6% Operating Margin
- 25,000 Employees
- 16 Hospitals
- 250+ Care Delivery Sites

MH Physician Network (MHMD)
- 2,000 ACO Physicians
- 400 Patient-Centered Medical Home Physicians
- >650 total PCPs
- Additional 800 Specialty Physicians from University of Texas Medical School (UT Health)
## Recent Accolades

### Quality – A competitive advantage for Memorial Hermann

<table>
<thead>
<tr>
<th>Award/Recognition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>15 Top Health Systems; Top 5 Large Health Systems</strong> (2012 &amp; 2013)</td>
<td></td>
</tr>
<tr>
<td>John M. Eisenberg National Patient Safety &amp; Quality Award (2012)</td>
<td></td>
</tr>
<tr>
<td>National Quality Forum Healthcare Award (2009)</td>
<td></td>
</tr>
<tr>
<td>TIRR Memorial Hermann No. 2 in rehabilitation hospitals</td>
<td></td>
</tr>
<tr>
<td><strong>America’s #1 Quality Hospital for Overall Care</strong> (2011 &amp; 2012)</td>
<td></td>
</tr>
<tr>
<td><strong>America’s 50 Best Hospitals</strong> (2010-2014)</td>
<td></td>
</tr>
<tr>
<td>The Joint Commission Top Performer (2012), Heart Attack, Heart Failure, Pneumonia, Surgical Care</td>
<td></td>
</tr>
<tr>
<td><strong>2011 Texas Healthcare Foundation Quality Improvement Awards</strong> (9 Memorial Hermann Campuses)</td>
<td></td>
</tr>
<tr>
<td><strong>Texas Hospital Association Bill Aston Quality Award</strong> (2011)</td>
<td></td>
</tr>
<tr>
<td><strong>The Woodlands, Southeast, Southwest, Greater Heights, Memorial City</strong></td>
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</tr>
</tbody>
</table>
MHMD Journey

2000: CPCs formed

2005: MHMD started CI participation

2008: Physician Compact was created between MHMD & Physicians

2011: MH ACO formed and Patient-Centered Medical Home created APCPs

2012: MSSP ACO participation started

2014: ACO Service Lines formed

2017: MACRA
MHMD Network

Advanced Practices
Primary Care and Specialists

Clinically Integrated Accountable Care Network

Messenger Model
Transformation of the Care Delivery Network

MHMD Clinically Integrated Health Network
New structure allows for greater collaboration and specialty alignment for disease management initiatives to meet the changing landscape of healthcare.
## Cost Savings Opportunity for Top 20 DRGs

<table>
<thead>
<tr>
<th>Top AP RDRGs</th>
<th>APR-DRG Description</th>
<th>APR Service Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>560</td>
<td>Vaginal delivery</td>
<td>Obstetrics/Delivery</td>
</tr>
<tr>
<td>720</td>
<td>Septicemia &amp; disseminated i..</td>
<td>Infectious Disease</td>
</tr>
<tr>
<td>540</td>
<td>Cesarean delivery</td>
<td>Obstetrics/Delivery</td>
</tr>
<tr>
<td>004</td>
<td>Tracheostomy w MV 96+ hou..</td>
<td>General Surgery</td>
</tr>
<tr>
<td>173</td>
<td>Other vascular procedures</td>
<td>Cardiovascular Surg</td>
</tr>
<tr>
<td>002</td>
<td>Heart &amp;/or lung transplant</td>
<td>Transplant Surgery</td>
</tr>
<tr>
<td>175</td>
<td>Percutaneous cardiovascular..</td>
<td>Invasive Cardiology</td>
</tr>
<tr>
<td>161</td>
<td>Cardiac defibrillator &amp; heart a..</td>
<td>Cardiac Surgery</td>
</tr>
<tr>
<td>194</td>
<td>Heart failure</td>
<td>Cardiology</td>
</tr>
<tr>
<td>710</td>
<td>Infectious &amp; parasitic disease..</td>
<td>General Surgery</td>
</tr>
<tr>
<td>045</td>
<td>CVA &amp; precerebral occlusion ..</td>
<td>Neurology</td>
</tr>
<tr>
<td>313</td>
<td>Knee &amp; lower leg procedures..</td>
<td>Orthopedic Surgery</td>
</tr>
<tr>
<td>221</td>
<td>Major small &amp; large bowel pr..</td>
<td>General Surgery</td>
</tr>
<tr>
<td>021</td>
<td>Craniotomy except for trauma</td>
<td>Neurological Surgery</td>
</tr>
<tr>
<td>302</td>
<td>Knee joint replacement</td>
<td>Orthopedic Surgery</td>
</tr>
<tr>
<td>912</td>
<td>Musculoskeletal &amp; other proc..</td>
<td>General Surgery</td>
</tr>
<tr>
<td>460</td>
<td>Renal failure</td>
<td>Nephrology</td>
</tr>
<tr>
<td>301</td>
<td>Hip joint replacement</td>
<td>Orthopedic Surgery</td>
</tr>
<tr>
<td>640</td>
<td>Neonate birthwt &gt;2499g, nor..</td>
<td>Neonatology</td>
</tr>
<tr>
<td>304</td>
<td>Dorsal &amp; lumbar fusion proc ..</td>
<td>Orthopedic Surgery</td>
</tr>
</tbody>
</table>

13 focus DRGS = $140M in opportunity
Strategic Growth in Health Care

Network Delivery Strategies
- Acute Care Services
- Professional Services
- Home Care Services
- Ancillary Services
- Post Acute Services
- Retail Care Services

Covered Lives Strategies
- Medicare (MA) at Risk Plans
- Medicaid at Risk Plans
- Commercial at Risk Plans
- Health Exchanges
- Self-Funded Plan Sponsored

Service Line Products
- High Value Specialty Networks
- High-end Quaternary Offerings/Centers of Excellence
- Virtual Health Services

Clinical Integration

Enabling Technology & Data Analytics Infrastructure
# Covered Lives

<table>
<thead>
<tr>
<th></th>
<th>United Healthcare Commercial</th>
<th>BCBS Commercial</th>
<th>Health Solutions Medicare Advantage</th>
<th>Aetna Whole Health</th>
<th>Health Solutions Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2016</td>
<td>100,000</td>
<td>80,000</td>
<td>1,800</td>
<td>26,200</td>
<td>48,500</td>
</tr>
<tr>
<td>January 2015</td>
<td></td>
<td></td>
<td>85,000</td>
<td></td>
<td></td>
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<tr>
<td>July 2013</td>
<td></td>
<td></td>
<td>5,800</td>
<td></td>
<td></td>
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<tr>
<td>January 2013</td>
<td></td>
<td></td>
<td>8,800</td>
<td></td>
<td></td>
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<tr>
<td>April 2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>January 2012</td>
<td></td>
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- **427,500 Covered Lives**
- **$3.2B book of business**
Success in Premium Strategy
## Medicare Shared Savings Program

### Top Performing ACO in the Country

<table>
<thead>
<tr>
<th>Year</th>
<th>Savings</th>
<th>Beneficiaries</th>
<th>Quality Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>$58M</td>
<td>34,430</td>
<td>83%</td>
</tr>
<tr>
<td>Year 2</td>
<td>$53M</td>
<td>40,911</td>
<td>88%</td>
</tr>
<tr>
<td>Year 3</td>
<td>$89M</td>
<td>50,055</td>
<td>96%</td>
</tr>
</tbody>
</table>
Our Population Outcomes

Fully and self-insured population of 28,529 members

- **40%** Fewer outpatient surgery cases per/1,000

- **20%** Fewer high-tech imaging scans per/1,000

- **9%** Fewer impactable medical admits per/1,000

- **8%** Fewer hospital bed days per/1,000

- **4%** More generic drug prescribing in top 4 drug classes

- **7%** Better than national average quality scores on Cardiac Post MI Beta Blockers
Strategic Growth in Health Care

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CLINICAL INTEGRATION

ENABLELING TECHNOLOGY & DATA ANALYTICS INFRASTRUCTURE
Service Line: Horizontal Integration

Clinical Programs Committee

Clinical Service Lines
Service Lines Focus Areas

**Acute Care Focus**

- Focused on increasing efficiency and decreasing cost for Medicare patients
- Centered on pre-acute, acute, and post-acute transitions of care
- Concentrated on preparing for risk-based contracts, bundled payments, and capitation

**Strategic Priorities**

- Patient Satisfaction
- Supply Savings
- Observation Hours
- Quality
- Length of Stay
FY16 Performance

43% of SL Projects decreased their FY16 Annualized LOS

Baseline FY15 Annualized LOS  
FY16 Annualized LOS

Patient Satisfaction at Threshold or Above*

<table>
<thead>
<tr>
<th>Department</th>
<th>METS</th>
<th>UnMETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Medicine</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Heart &amp; Vascular</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Orthopedics</td>
<td>7</td>
<td></td>
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Quality Metrics Met at Threshold or Above *

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<tr>
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<tr>
<td>Hospital Medicine</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td>Heart &amp; Vascular</td>
<td>13</td>
<td>24</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>18</td>
<td>31</td>
</tr>
</tbody>
</table>

Supply Savings

- Heart & Vascular: -$2,111,718
- Orthopedics: $1,966,064
- Hospital Medicine: $74,366

* Data based on FY16 reporting period
Clinical Integration: A Financial Imperative
CMS Quality Metrics

Safety of Care
- Complication Rate for Hip/Knee Replacements
- Serious Complications (AHRQ)
- Deaths Among Patients with Serious Treatable Complications
- ICU and Select Ward CLABSI
- ICU Only CLABSI
- ICU and Select Ward CAUTI
- ICU Only CAUTI
- SSI: Colon
- SSI: Hysterectomy
- MRSA Bloodstream Infections
- C. Diff Intestinal Infections

Efficient Use of Medical Imaging
- OP Low Back Pain MRI w/o treatment recommendation
- OP with f/u Mammogram, U/S or MRI breast w/in 45 days
- OP CT Chest Double Scans
- OP CT Abdomen Double Scans
- OP w/ Cardiac Imaging Stress Test Before Surgery
- OP with Brain CT + Sinus CT

Patient Experience
- Nurse Communication
- Physician Communication
- Timely Help
- Pain Control
- Medicine Explanation
- Clean Rooms and Bathrooms
- Quiet at Night
- Home Recovery Education
- Care Understood at Discharge
- 9 or 10 rating
- Patients who Recommend

Payment & Value of Care
- Medicare Spending per Beneficiary
- Payment for Heart Attack, Heart Failure and Pneumonia Patients (x3)
- Value of Care for Heart Attack, Heart Failure and Pneumonia Patients
  - Death Rate (x3)
  - Payment (x3)

Timeliness & Effective Care
- Colonoscopy
  - Recommendation for Follow-Up Colonoscopy Screening
  - Polyps Receiving Timely Follow-Up
- Heart Attack
  - Outpatient Chest Pain Specialized Transfer
  - Outpatient Chest Pain to EKG Time
  - Outpatients Chest Pain Receiving Clot Busters within 30 minutes
  - Outpatients Chest Pain Aspirin within 24 hours
  - Heart Attack Receiving Clot Busters within 30 minutes
  - Heart Attack Coronary Intervention within 90 minutes
- Heart Failure
  - Evaluation of LVS Function
- Pneumonia
  - Most appropriate initial antibiotics
- Surgical Care
  - Pre-Op Antibiotic Administration Timeliness
  - Post-Op Antibiotic Discontinuation Timeliness
  - Peri-Operative Clot Therapy Timeliness
  - Perioperative B-Blocker Management
  - Appropriate Antibiotics
  - Urinary Catheter Removal Post Op Day 1 or 2
- ED Care
  - Broken Bones Pain Medication
  - Left Without Being Seen
  - Stroke Brain Scan within 45 minutes
  - Time to Admission

Readmissions & Mortality
- 30 Day Hospital-Wide Readmissions
- COPD, Heart Attack, Heart Failure, Pneumonia, Stroke, CABG
  - Readmissions (x6)
  - Death (x6)
- Hip & Knee
  - Readmissions

- Time to Inpatient Room
- Time Spent in ED
- Time Spent before Healthcare Professional
- Preventive Care
  - Patients Assessed and Influenza Vaccination
  - Healthcare Workers Influenza Vaccination
- Children’s Asthma
  - Home Management Plan of Care
- Stroke
  - Clot Busters within 3 hours of Symptoms - Ischemic
  - Clot Complication Prevention within 2 days of Admission – Ischemic
  - All Stroke – Clot Prevention w/in 2 days of Admission
  - Prescription for Clot Prevention – Ischemic
  - Arrhythmic Stroke Prescribed Blood Thinner
  - Ischemic Stroke with Prescription for Cholesterol
  - All Stroke Written Education Materials
  - All Stroke Evaluated for Rehab
- Clot Prevention
  - Admission and Perioperative Clot Prevention
  - ICU Clot Prevention
  - Patients with Clots not Receiving Clot Prevention
  - Clot Patients Receiving Recommended Treatment
  - Clot Patients Blood Thinner Complication Screening
  - Clot Patients Discharged on Blood Thinner Written Education
- Pregnancy & Delivery
  - Too-Early Delivery Scheduling
Metrics Transparency & Control

“Five or six years ago we didn’t think we could prevent these infections. They were like an act of God. But if you follow certain procedures to a “T,” you can prevent them almost every time.

If I show you the curve of our infection rate and the point at which we started making measurements and publishing them, the rate goes down like it’s off a cliff.”

— Michael Shabot MD, FACS, CMO, Memorial Hermann Health System

Decision Rights

“Basically, we are handing them (the clinically integrated network) the keys ... They will be setting the protocols and the care management strategies for the entire system.”

— Dan Wolterman, President and CEO Memorial Hermann Health System
Mitigating Clinical & Financial Risk: Purpose

• Achieve measureable, systematic and evidence-based continuous performance evolution by enhancing collaborative physician, clinician and management entities

• Mitigate clinical and financial risk under emerging payment models
Mitigating Clinical & Financial Risk: Approach

• Clinical Integration
  – A system, process and infrastructure to engage physicians and clinicians in continuous improvement decision making with appropriate informational and executional support, as well as oversight and accountability
    • Accomplished through a specialty-focused committee infrastructure that serves as an improvement engine
    • Infrastructure is supported by any department that can help feed evidence to decision makers, or help practicing clinicians execute their decisions (clinical and administrative)
    • A common understanding of purpose, approach and expectations creates an environment that allows the above to succeed
    • Robust and cyclical reporting processes provide clear ROI value of improvement activities

• Physician/Clinician Engagement
  – An approach and process for communicating with, educating, convincing and co-opting physicians as collaborative decision makers in continuous performance improvement
Timeline

Review Foundational Elements & Clinical Support Structures
- Review key support elements, structures, processes
- Articulate common purpose
- Educate/engage key stakeholders

Design and Implement Clinical Enterprise Support Structure
- Align clinical Improvement support structure
- Achieve shared vision for Clinical Enterprise

Design and Implement Integrative Clinical Infrastructure
- Develop & implement specialty-focused committee structure
- Initiate education and evidence-based improvement cycles

Clinical & Financial Risk Mitigation
Mitigating Clinical & Financial Risk: Success Factors

Critical Success Factors

- Leadership & Culture
- Management Structures & Reporting Systems
- Data Availability & Analysis
- Performance Improvement Methodology
- Physician & Clinician Engagement
Approach and Best Practice Infrastructure

**Critical Success Factors (Environment for Change)**

1. Foundational elements can be assessed for consistency with leading practice and functionality.

**Aligned Support Structure**

2. Alignment of support resources to assist the ongoing work of the clinical decision-making infrastructure.

3. Specialty focused committee infrastructure brings clinicians and others together for collaborative identification, prioritization, planning and implementation of evidence-based improvements.

**Integrated Clinical Decision-Making Infrastructure**

4. Together, the integrated structure mitigates clinical and financial risk, and aligns patient outcomes, quality metrics, and emerging payment models.
Improvement Engine Structure

**Clinical Excellence**
- Specialty-Focused Committee Infrastructure
- Population Health Enterprise

**Integrated Clinical Decision-Making Infrastructure**
- Clinical Documentation
- Care Management
- Nursing
- Performance Improvement

**Aligned Support Structure**
- Quality
- Patient Safety
- Infection Control
- Clinical Data Management
- Pharmacy

**Aligned Support Resources Enable:**
- Common PI and clinician engagement methodology and education for viral spread
- Known resource for bedside caregivers
- Common data report, analysis, vetting and validation processes
- Widespread cultural transformation focused on performance improvement and results

**Committee Infrastructure Enables:**
- Intra- and inter- specialty coordination of services
- Common policies, protocols and procedures
- Common reporting processes including clinical, operational and financial results
- Functional and evidence-based self-governance
- Accountability mechanisms
1. TAT for CT Head for Stroke Pts in ED
2. Compliance with cardiac/CABG post op blood glucose protocol
3. Nursing Implementation of VTE prophylaxis in the ICU
4. Ensure antibiotics are discontinued within 24 hours post-op for appropriate SCIP pts
5. Ensure VTE prophylaxis is implemented for all SCIP pts
6. Stroke eligible patients are discharged on Statins
7. AMI eligible patients are discharged on Statins
8. Dietary instructions for patients discharged on warfarin
9. Post hospitalization follow up instructions for patients discharged on warfarin
10. Removal of Foley catheter on post-op day 1 or 2
11. Accurate identification of surgical patients on beta blockers
12. Process to ensure VTE screening for all patients in the ICU within 24 hours
13. Hand off communication between ED and ICU
14. Pneumococcal vaccine 6-64 years
15. Process to ensure glucose levels for diabetic patients are accurately assessed prior to CV surgery
16. Appropriate weight based dosing of antibiotic prophylaxis prior to CV surgery
17. Consistent practice of aseptic technique throughout scheduled C-Section cases in L&D ORs
18. Process to ensure pre-op bathing via evidence based practice
19. Consistent coagulation TAT for code stroke patients
20. Appropriate post case cleaning of L&D ORs
21. Central sterile processing best practices
22. Surgical site infection report card
23. Standardized operating room scrub attire
24. Pre-op bathing of scheduled surgical outpatients
25. Bowel management in rehabilitation patients
26. Reducing catheter UTIs in spinal cord injury patients
27. Operating room cleaning policy and protocol
28. CHG bathing before craniotomy
29. Development of automated list to identify SCIP pts
30. Increase accuracy of medication home list upon admission
31. Increase compliance for VTE overlap therapy
32. Accurate screening and admin of pneu and flu vaccine for pediatric pts
33. Accurate screening and admin of pneu and flu vaccine for adult pts
34. Wrong site surgery
35. Preventing deliveries prior to 39 weeks
36. Formalized process for initiating Safety Coach program
37. Preventing gross contamination in C-Section cases
38. Increase meeting education needs for post-op renal pts re dialysis devices
39. Pre-op hair clipping before entering OR
40. Standardized process for continued auditing of Midas security and reports by the business unit
41. Methodology to optimize communication needs for reports/data to QPSIC DM staff
“We’re building these high value networks on ideology and ability to perform rather than on historical performance.”

- Shaun Anand, MD
“If you don’t like change, you’re going to like irrelevance even less.”

-Eric Shinseki
References

- Fundamental Elements and Leading Practice Model are adapted from organizations, publications and operational experience including:
  - The Joint Commission
  - Memorial Hermann Health System (MHHS)
  - MHMD: MHHS Accountable Care Organization (2014 top-performing ACO)
  - The Joint Commission Journal on Quality and Patient Safety

- Source publications:
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