Six Sigma and Healthcare Quality
Case Studies:
Use of Abbreviations in Medical Records and
Assuring Proper Identification of Patients Prior to Procedures

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Vice President of Quality Initiatives and Six Sigma Certified Master Black Belt

Valley Baptist Health System
Valley Baptist Health System

- Valley Baptist Medical Center
  - 611 Licensed Beds
  - Lead Level 3 Trauma Center
  - 5 Star Rated Emergency Services
  - State of the Art Children’s Center
  - # 1 Rated Orthopedics Service in State
  - Heart & Vascular Institute
  - Teaching facility for the Regional Academic Health Center of The University of Texas Health Science Center at San Antonio

- Other Entities
  - Golden Palms Retirement and Healthcare Center
  - Valley Health Plans
  - Advanced Medical Supply (DME)
  - Valley Baptist Ambulatory Surgery Center
  - Valley Eye Surgery Center
  - Licensed Vocational Nurse School
  - Family Practice Residency Program
  - Home Health & Hospice
  - Rehabilitation & Wellness
  - Behavioral Health Services

- Attributes
  - Leading area employer
  - Major economic contributor
  - Community resource
Valley Baptist Health System

- **Mission:**
  - Valley Baptist Health System is a community health service performing spiritually based health, education and charitable programs in accordance with the teachings and healing ministry of Jesus Christ.

- **Values:**
  - In all we do we value:
    - The whole person – body / mind / spirit
    - Treating all people with dignity
    - Excellence, quality and improvement
    - Collaboration
    - Being effective stewards
    - Integrity and honesty

- **Vision:**
  - Valley Baptist Health System will be a faith based regional health care system serving patients and people throughout South Texas. It will be distinguished by high quality care, outstanding service and excellent operations.
Valley Baptist Health System

- **Strategic Initiatives**
  - Disciplined Offering of Services
  - E-Business
  - Six Sigma
  - Innovation
  - Relentless Customer Service
  - Employee Partnerships
  - Growth

- **With Six Sigma as our operating system, the others are possible!**
What is Six Sigma?

- A comprehensive and flexible program for achieving, sustaining and maximizing business success that:
  - Is uniquely driven by a clear focus on the “Voice of the Customer”
  - Is founded in a rigorous use of facts, data and statistical analysis
  - Provides for diligent attention on managing, improving and reinventing business processes.
  - Is an improvement methodology with three perspectives:
    - A Measure of Quality
    - A Process for Continuous Improvement
    - An Enabler for Cultural Change
Measure of Quality

- Six Sigma is a statistical measure that expresses how close a service comes to its quality goal.
- Six Sigma refers to a process that produces only 3.4 defects per million opportunities.

<table>
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<th>Sigma</th>
<th>DPMO</th>
<th>Yield</th>
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<tr>
<td>2</td>
<td>308,537</td>
<td>69.1463%</td>
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<tr>
<td>3</td>
<td>66,807</td>
<td>93.3193%</td>
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<td>4</td>
<td>6,210</td>
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<tr>
<td>5</td>
<td>233</td>
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<td>6</td>
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<td>99.9997%</td>
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Process for Continuous Improvement

- Six Sigma provides a process based approach (DMAIC) to continuous improvement that can be used to improve any business process
- Provides a data driven and evidence based format on which to base improvement decisions
- Insists on statistical proof of improvement and process control
- Provides a means to sustain and build upon proven improvements
DMAIC Methodology

**DMAIC:** To improve any existing product or process

- **Define:** Who are the customers and what are their priorities?
- **Measure:** What are the most important causes of the defects?
- **Analyze:** How is the process performing and how is it measured?
- **Improve:** How do we remove the causes of the defects?
- **Control:** How can we maintain the improvements?
Enabler for Culture Change

- Six Sigma fundamentally changes the culture and operating philosophy of the organization

- It becomes the way to do our job – “The Way We Work”
Six Sigma Themes

- Genuine Focus on the customer
- Data and Fact Driven Management
- Process focus, management and improvement
- Proactive management
- Boundaryless collaboration
- Drive for perfection; tolerance for failure
Benefits of Six Sigma

- Generates sustained success
- Sets a performance goal for everyone
- Enhances value to customers
- Accelerates the rate of improvement
- Promotes learning and cross-pollination
- Executes strategic change
The Six Sigma Difference

- Traditional Quality Programs
  - Driven internally
  - Focuses on outcomes
  - Fixes defects
  - Improves quality
  - Looks backwards
  - Concentrates on products
  - High on theory and people

- Six Sigma
  - Driven by the customer
  - Focuses on processes
  - Prevents defects
  - Improves bottom line
  - Looks forward
  - Concentrates on CTQs
  - High on methodology and data
Why Six Sigma?

- Provides a philosophy, a methodology and tools that enable the fulfillment of our Mission & Vision
- It fosters a culture that embraces...
  - The Voice of the Customer
  - Constant Change and Increasing Expectations
  - A Focus on Process
  - A Disciplined Use of Facts
  - Rigorous Data Analysis
  - Permanent Improvements
  - The Removal of Barriers – “Boundaryless”
  - Accountability
- To develop an “Operating System” and a foundation of operational excellence upon which to build our future
- To prepare us to lead the way in an ever-changing and demanding environment
How did we begin implementing Six Sigma?

- CEO Commitment!!!!
  - Vision
  - Leadership
  - Resources (time, money, people, etc.)

- Partnership with General Electric Medical Systems – Performance Solutions
  - Guidance
  - Expert Knowledge
  - Training – Six Sigma, Change Acceleration Process (CAP), Work-Out™
  - Initiative Mentoring
  - Transition Assistance

- Personnel selection – Best and Brightest; Future Leaders

- Initiative Selection – Line of Sight
VBHS Timeline:

- May 2002
  - Engagement with GEMS
  - Wave 1 – 6 initiatives underway
  - 11 Green Belts trained
- March 2003
  - Wave 2 – 6 initiatives underway
  - 3 Full Time Black Belts appointed
- April 2003
  - 3 Full Time Master Black Belts appointed and trained
- June 2003
  - Wave 3 – 8 initiatives underway
  - 2 Master Change Agents trained
  - 6 Green Belts trained
- March 2004
  - Wave 4 – 16 initiatives underway
  - 14 Green Belts trained
- August 2004
  - Wave 4 completed
- Future
  - Wave 5 initiatives begin
  - Additional Initiatives
Six Sigma: An Evolutionary Process

Phase I - Activity
Eliminate work
build confidence

Phase II - Processes
Build sense of contribution
through speed and simplicity
and improved business results

Phase III - Culture
Become the most productive company
on earth

Getting started "Quick Hits"
Gaining momentum
Cross functional issues
Becoming part of the culture
Self-sustaining spontaneity
Part of the process

Time

Change

August 24, 2004

VBHS Confidential & Proprietary
Six Sigma Practitioners:

- 3 Certified Six Sigma Master Black Belts
- 2 Full Time Black Belts
- 14 Certified Six Sigma Green Belts
- 14 Green Belts in training
- 12 Yellow Belts
- 2 Master Change Agents
- 98 Change Agents
- Future – All managers will be trained to Green Belt certification; Executives to Yellow Belt level
Completed Initiatives:

- **Wave 1**
  - ED Wait Times
  - Diabetes Management
  - Pharmacy Order Verification
  - OR Turnaround Time
  - Staff Scheduling
  - Nursing Order Activation

- **Wave 2**
  - ED Wait Times
  - Laboratory Turnaround
  - Admissions Process
  - OR Turnaround Time
  - Radiology Turnaround (CT Scan to ED)
  - Discharge Process

- **Wave 3**
  - ED Wait Times
  - Surgery Patient Preparation & PATT
  - DRG Assurance of Accuracy
  - RN Admissions Assessment
  - Patient Registration Accuracy
  - Outpatient Service Redesign
  - Performance Management
  - RN New Hire Process
VBMC Emergency Department: Six Sigma Success!

- Focus of all three Six Sigma Initiative waves.
- High profile operation
- Opportunity for customer impact
Documented Results in Patient Satisfaction:

<table>
<thead>
<tr>
<th>Patient Satisfaction Indicator:</th>
<th>2002</th>
<th>2003</th>
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<tbody>
<tr>
<td>Overall Quality of Care</td>
<td>71.3</td>
<td>91.2</td>
</tr>
<tr>
<td>Overall Team Work between Doctors, Nurses and Staff</td>
<td>67.9</td>
<td>95.2</td>
</tr>
<tr>
<td>Total Time Spent</td>
<td>35</td>
<td>73.4</td>
</tr>
<tr>
<td>Doctors’ Understanding and Caring</td>
<td>92.9</td>
<td>99.2</td>
</tr>
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Survey by Professional Research Consultants (PRC)
Percentile ranking for the portion of patients rating VBMC Emergency Department as EXCELLENT
Performance Recognition:
PRC Platinum Achievement Award

- Professional Resource Consultants, Inc.

- “Utilizing Six Sigma and key drivers to improve ED patient satisfaction”
Performance Recognition:

- Professional Resource Consultants, Inc.

Additional Awards from PRC:
- 5 Star Award for ED Overall Quality of Care
- Top Performer: ED Physicians’ Overall Quality of Care
- 5 Star Award for Inpatient Rehabilitation Services
Current (Wave 4) Initiatives:

- Timely Utilization of Ancillary Services in the ED
- Inpatient Floor to Floor Transfers
- Event Response
- Late Charges
- Golden Palms MDS Coding Accuracy
- CHF
- Stroke Care
- AMI
- Forms Management
- Pain Management
- STO Turnaround Time
- Patient Identification
- Outpatient Services Integration
- Timely & Safe Medication Turnaround
- Abbreviations
- Pathology Process Flow Improvement
Summary

- Six Sigma is...
  - A measure of quality
  - A process for continuous improvement
  - An enabler for culture change
- The DMAIC methodology can be used to improve any existing product or process
- Six Sigma can provide previously unheard of levels of performance
Questions?