

# Six Sigma and Healthcare Quality

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

**Tomas A. Gonzalez, MD, MBA**  
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

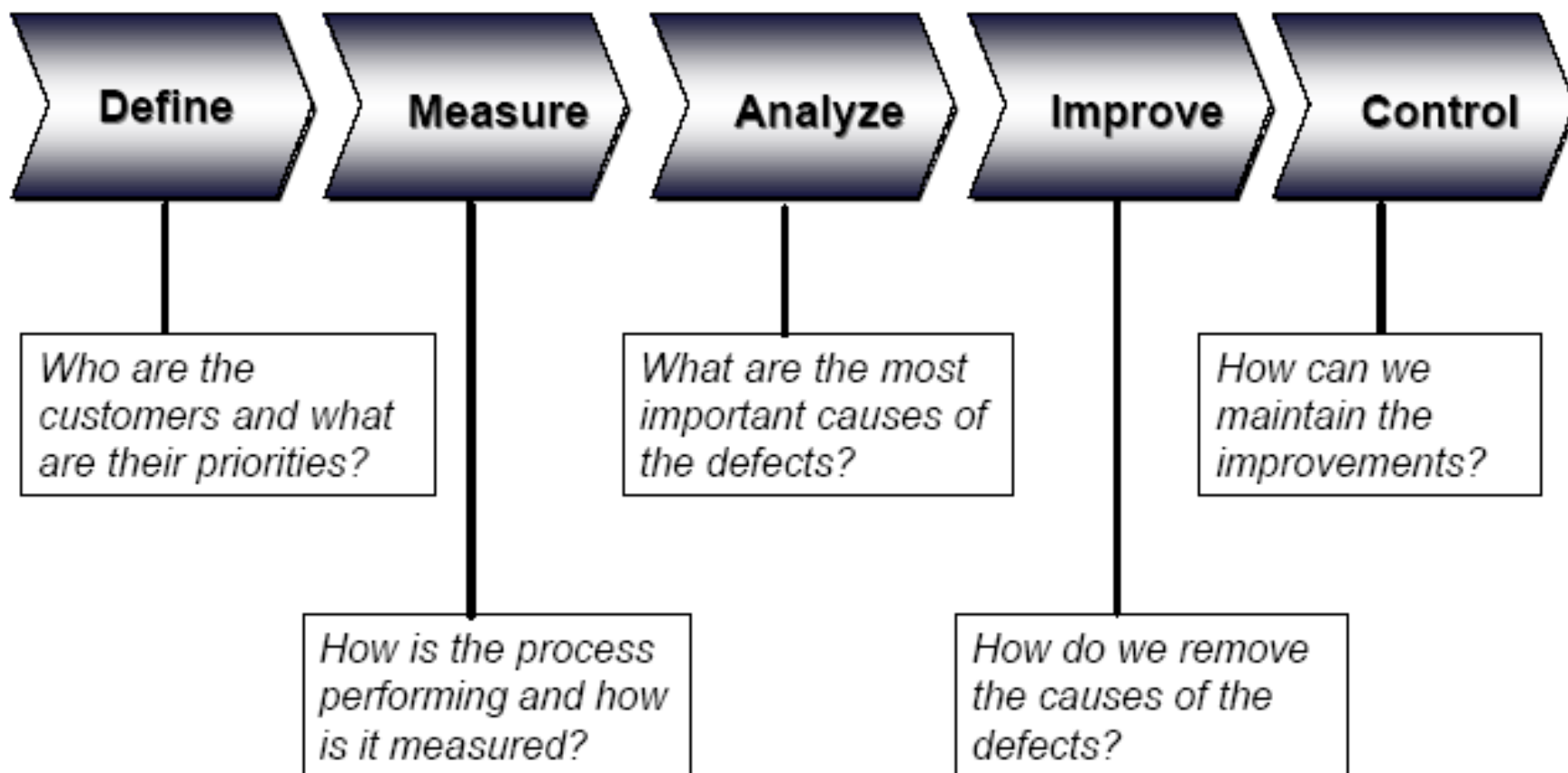
<b>Sigma</b>	<b>DPMO</b>	<b>Yield</b>
<b>2</b>	<b>308,537</b>	<b>69.1463%</b>
<b>3</b>	<b>66,807</b>	<b>93.3193%</b>
<b>4</b>	<b>6,210</b>	<b>99.3790%</b>
<b>5</b>	<b>233</b>	<b>99.9767%</b>
<b>6</b>	<b>3.4</b>	<b>99.9997%</b>

# 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*





# 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

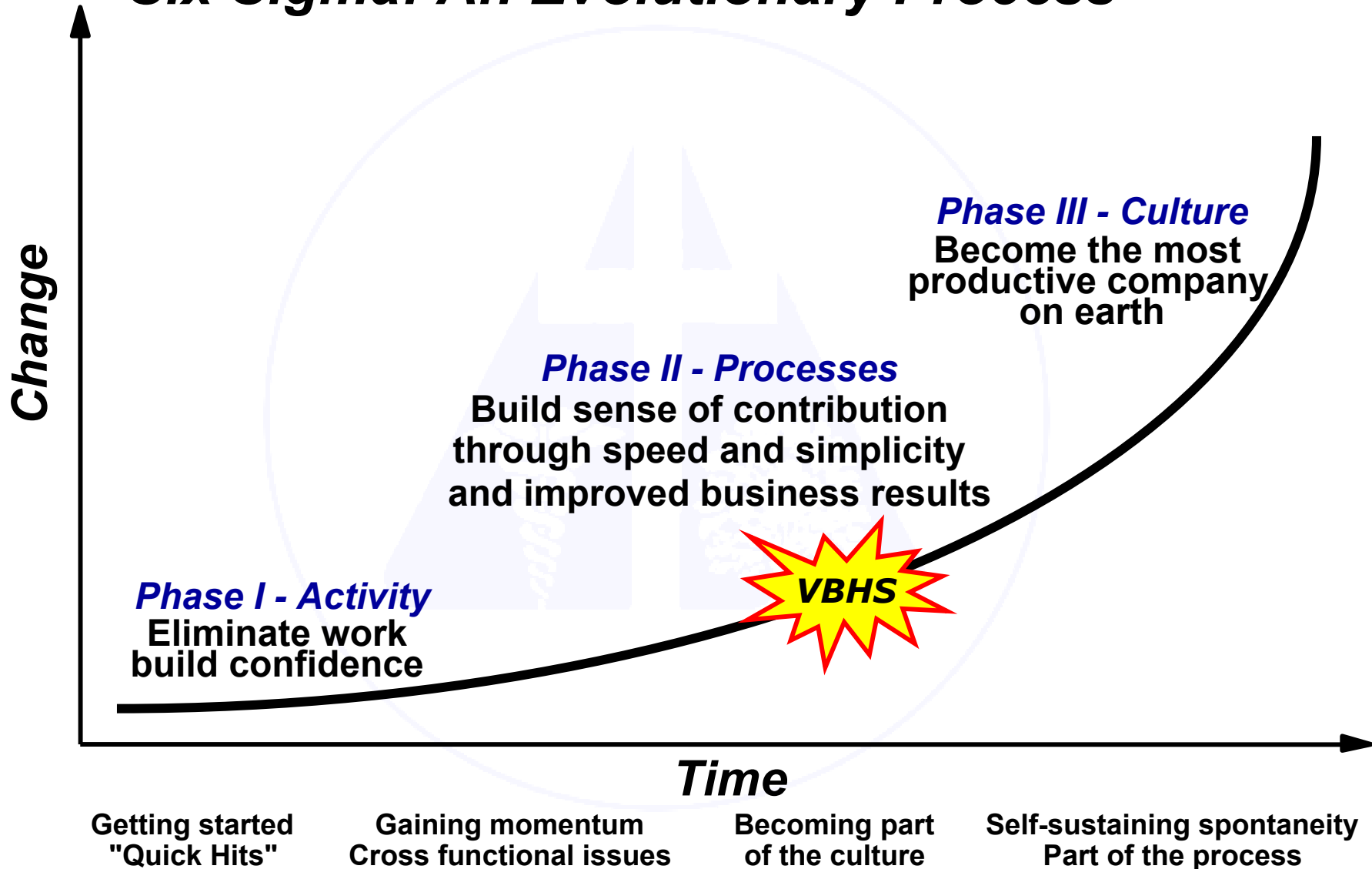
# How did we begin implementing Six Sigma?

- 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





# 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

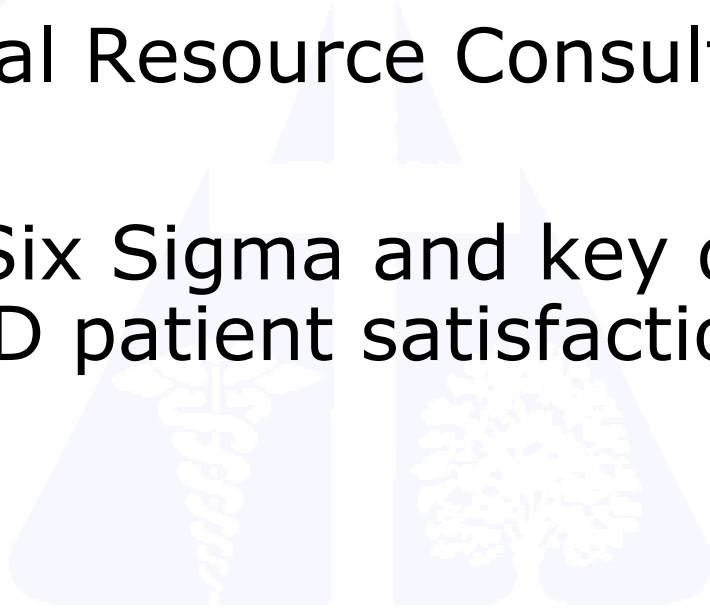
# Documented Results in Patient Satisfaction:

Patient Satisfaction Indicator:	2002	<b>2003</b>
Overall Quality of Care	71.3	<b>91.2</b>
Overall Team Work between Doctors, Nurses and Staff	67.9	<b>95.2</b>
Total Time Spent	35	<b>73.4</b>
Doctors' Understanding and Caring	92.9	<b>99.2</b>

*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?

