



**Improving Healthcare**

Lean Thinking in Clinical Service Lines

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SHS 2011

## What Is Juran Institute Inc.?

A globally referenced and recognized consulting and training organization, known for its proven methods of attaining quality leadership.



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A quick word about the firm I represent – the Juran Institute

Last year, we celebrated our **30<sup>th</sup> year in business**

Known as a knowledge transfer organization – tag line is “**The Source for Quality**”

We provide services to organizations in multiple sectors around the world

You may recognize some of these books -- **the Juran Quality Handbook, 6<sup>th</sup> edition, referenced by ASQ as “The quintessential reference in quality engineering and management practices” Free copy to be given away as door prize tonight.**

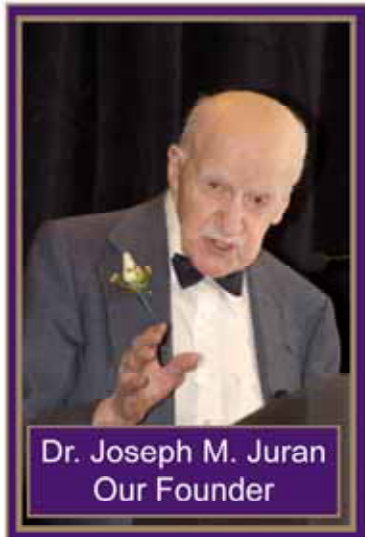
Also shown here is **Curing Healthcare**. The Juran Institute was a partner in the **National Demonstration Project**, an initiative to test the hypothesis that quality improvement methodologies that had proven effective in other industries could be adapted and applied with equal success in health care.

The book **Curing Healthcare**, co-written by former **Juran CEO Blain Godfrey**, and **IHI President and CEO Don Berwick** is a **casebook** about these National Demonstration Projects and the lessons learned.

**Juran is proud to have been a partner in this early initiative** for improving quality in healthcare and continues to support that mission today.

**Next slide: Dr. Joseph M. Juran**

## Who Is Dr. Joseph M. Juran?



### INSTITUTE MISSION:

To enable our clients to improve the quality of products, services and processes for achieving their business results.

### INSTITUTE VISION:

To be recognized as the global standard for attaining *quality leadership*.

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This is Dr. Joseph Juran, who away in early 2008 at the age of 103. Dr. Juran is widely recognized as one of the **true leaders in quality management during the last century**.

At the Juran Institute, we continue to **perpetuate his great work**, for the purpose of enabling quality management in organizations and companies throughout the world.

Of note, Dr. Juran was also very **instrumental in the launch of the Baldrige National Quality Program**. He testified before Congress on the benefits of the award and served on the original Board of Overseers. At the Juran Institute, we are proud to continue our advocacy for this great program, including its rich model for excellence and criteria for performance excellence.

**Next slide:**

**Today's economic environment and healthcare challenge**

## The State of Healthcare in the U.S.

### **Excerpts from Organization for Economic Co-operation and Development presentation:**

- Health expenditure in the United States is far higher than in other developed countries.
- ...even the government spends more on health than nearly anywhere else.
- This level of spending has nothing to do with aging and health status
- For all its spending, the US has lower life expectancy than most OECD countries, and is below average on a wide range of other measures...

Source: OECD (2009), *Disparities in health expenditure across OECD countries: Why does the United States spend so much more than other countries?*; presentation by Mark Pearson, Head of OECD Health Division, to the U.S Senate Special Committee on Aging: See [www.oecd.org](http://www.oecd.org).

Lots of articles about Healthcare these days.

### **Not new information**

How can we spend twice as much, and yet get worse results?

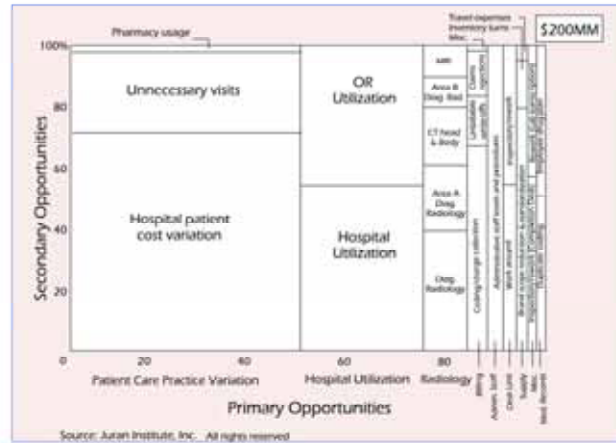
**See next slide on why this is.**



"My doctor told me to avoid any unnecessary stress, so I didn't open his bill."

# Costs of Poor-Quality Healthcare

**Thirty percent of all direct healthcare outlays today are the result of poor-quality care.**



**Definition of Cost of Poor Quality – cost that would disappear if you**

- 1) Do the right things
- 2) Do them correctly

**Study conducted in 2003** by Midwest Business Group on Health in collaboration with Juran Institute, Inc.

With health expenditure of \$2.5 trillion in 2009, 30% translates to \$750 billion spent on poor quality

COPQ costs mostly due to **Overuse, Misuse, Waste and Inefficiency**

Could not measure the impact of underuse.

The **Cost Conundrum** By Atul Gawande, The New Yorker, June 1, 2009

Study of McAllen, Texas: one of the most expensive health-care markets in the country. **Contrary to popular belief, more is not better, and may actually be worse.**

**In cases where science was unclear, some physicians pursued the maximum possible amount of testing and procedures; some pursued the minimum.**

Promotes rewarding doctors and hospitals if they band together to form accountable-care organizations – increase prevention and quality of care, while discouraging overtreatment, under-treatment, and sheer profiteering.

“Most Americans would be delighted to have the quality of care found in places like Rochester, Minnesota, or Seattle, Washington, or Durham, North Carolina – all of which have world-class hospitals and costs that fall below the national average.”

## Building a Better Healthcare System

### Five Principles or Goals for a Reformed Healthcare System

1. Healthcare Coverage for All
2. Cost Management
3. Improvement of Healthcare Quality and Safety
4. Equitable Financing
5. Simplified Administration

***“We need systemic and rapid reform.”***

Source: National Coalition on Health Care, Building a Better Health Care System, 2009

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National Coalition on healthcare is a non-partisan alliance of groups working for the achievement of comprehensive healthcare reform. This group has had great **input, and some influence on the** Patient Protection and Affordable Care Act, signed into law by President Obama on May 22, 2010.

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Quote from William Petasnick, CEO of Froedtert Hospital in Milwaukee –  
**“Washington’s politicians have settle for “insurance reform instead of systemic health reform ...”** *The Health Care Debate*, USA Today, 12/11/2009

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**Last year, Dr. Don Berwick was appointed by President Obama as the new administrator of the Centers for Medicare and Medicaid Services. Berwick founded IHI. A peek into future executive branch strategies can be learned from IHI. IHI’s strategy for reducing waste and enhancing value** in health care is based on the following assumptions:

1. Better care does not always mean higher-cost care.
2. Providers will face steadily increasing pressure to take cost out of the system (i.e., reduce waste) while maintaining or increasing the quality of care.
3. Health care organizations can remain financially viable and maintain an acceptable margin when revenues fall only if systems are fundamentally redesigned.

## Learning Objectives

1. Learn to identify and manage key healthcare processes and value streams.
2. Learn how patient value and outcomes can be enhanced by applying lean concepts to clinical care pathways.
3. Know the first step to achieving performance excellence by defining and controlling key organizational processes and service lines.

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In the **Baldrige Criteria for Performance Excellence**, category 6.1 asks the question “**How do you design your work systems?**” Many healthcare organizations have been stumped by that question. Perhaps you have struggled with that question where you work. This proposition from this session will provide you with an approach that you may find of value to your healthcare organization.

At the end of the session, you will have information that will help you to be able to do these **3 things**.

In the book *Six Sigma Process Process Management* co-authored by Mike Nichols (former chair of the ASQ Board of Directors), he describes “end to end core processes as those high-level processes that are the primary drivers of value, satisfaction, and profit.” Knowing how to identify and manage these processes is one of the first steps in developing a solid work system model. **This first objective help you know how to do this.**

Because most health systems offer **multiple services to many different patient segments**, process management becomes **complex and challenging**. Processes cannot be designed so that “**one size fits all**”. So the question becomes **how to design our processes** to meet the **many and varying needs** to all our patients.

The **second learning objective provides an answer to this question**, by understanding how process thinking is integrated with a service line model and clinical care pathways to create an effective work system.

**Disclaimer: This is not a lesson on lean**, and will not really talk much about lean. It is more about learning where to apply lean with a healthcare environment.

## Background

- More than 40 years of Business Process Management, but not in healthcare
- Successful healthcare models are still emerging.
- Healthcare Baldrige Performance Excellence Criteria introduced in 1999
- Process management enhances patient care and resource utilization.



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Bullet 1) The focus on business process management has been around for a long time, with **early influence from Juran and Deming and others**, and later by the work of **Michael Hammer** and others. The concepts of **Japanese Manufacturing** and **Total Quality Management** also had an impact.

Bullet 2) BPM is especially **important in healthcare** because of the high degree of **specialized training and job roles, and the functional structure** of most healthcare organizations and systems.

Bullet 3) The Baldrige model has had **great influence on the concept of process thinking** in healthcare, but has been around in healthcare only 10 years and **still widely unknown and under-utilized**.

Lean and Six Sigma have also had an impact.

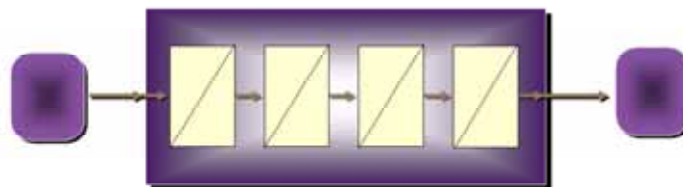
Reference winning Baldrige organizations --- e.g. SSM

## Process Management Overview

### *What is a process?*

**A systematic series of actions directed to the achievement of a goal.**

– J.M. Juran



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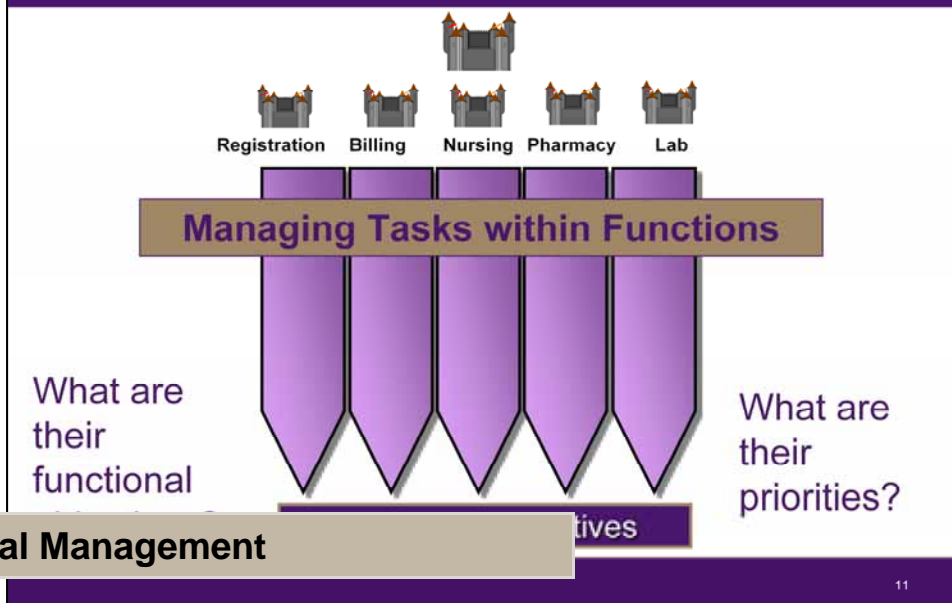
Deeper dive into **concepts of process and process management ...**

All organizations have many and different types of work activities.

**The PROCESS is the combination of all activities that produce the good or service.**

All **processes are production processes** – some produce goods and some produce services.

# What Is Functional Management?



Many organizations are based on specialization through functional differentiation. This has resulted in the traditional vertical/hierarchical organizations. Management direction, goals, and measurements have been deployed down to the existing organizational structure. However, most hospital processes flow across functions horizontally.

## **Specialization downsides:**

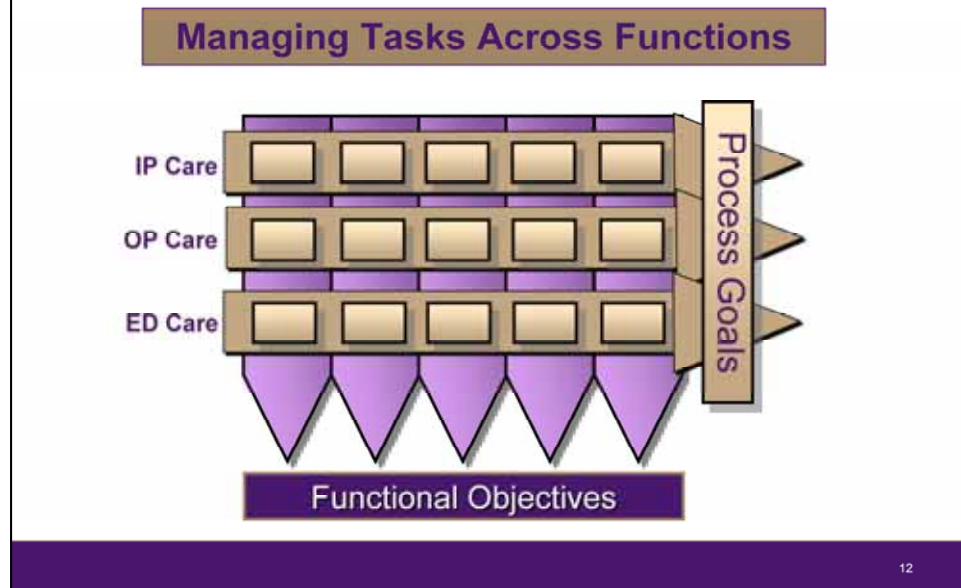
- Local optimization and system sub-optimization
- Communication challenges
- Handoff problems and errors
- Waiting – Batch and Queue

## **Examples:**

Lab can process specimen in minutes or seconds, turnaround time may be hours

Physician rounding results in batched discharges

# What Is Process Management?



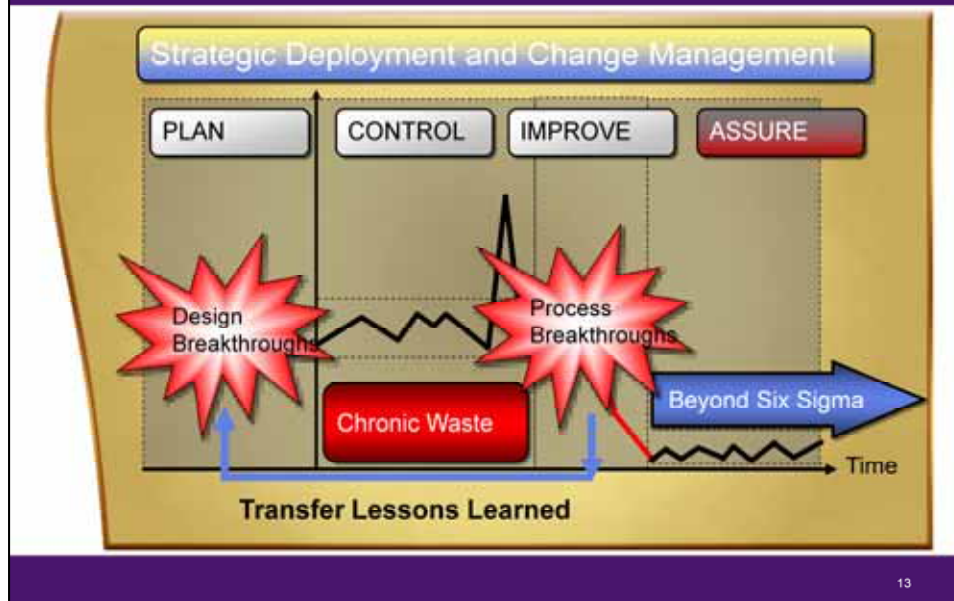
To assure survival and stimulate productivity, there must be a recognition that all work is a process, that organizational success is dependent on the effectiveness and efficiency of core business processes.

Steps for implementing process management:

1. Select Key Processes
2. Name process owners
3. Customer needs and process flow
4. Process measurement
5. Process analysis
6. Process design/redesign
7. Transfer to operations for control and improvement
8. Process review and assessment

**Alignment of FUNCTIONAL GOALS with PROCESS GOALS**

## Three Universal Management Processes



Dr. Juran described his quality trilogy in ASQ's Quality Progress magazine in August 1986. The sequence described in the magazine article is what is in the order shown here: Plan, Control, Improve

In reality, many existing processes were never very well planned, therefore processes are performing at an unsatisfactory level of control. As improvements are made, new levels of control are established.

Other key points about the trilogy:

1. Costs of Poor Quality (COPQ) are those costs that would disappear if every task were done perfectly the first time, every time. It can also be defined as the difference between the theoretical minimum cost and the actual cost.
2. Breakthroughs achieve substantially higher levels of performance quickly. Breakthroughs do not just happen. They require a systematic change process, one that can be achieved with the "project-by-project" approach.
3. Improving products, processes, and services is a never-ending pursuit. Achieving breakthroughs may require a tenfold improvement, or even better than 3.4 ppm, which is a Six Sigma level.
4. Lean and Six Sigma are methodologies and toolsets that can enable an organization to improve performance systematically.
5. **For an organization to continue making breakthroughs and meet the needs of their stakeholders, they must master the skills to plan, control, and improve quality.**

## Baldrige Winners That Use Process Owners

- North Mississippi Medical Center
- Bronson Methodist Hospital
- Mercy Health System
- Poudre Valley Health System
- Robert Wood Johnson University Hospital at Hamilton
- St. Luke's Hospital of Kansas
- SSM Health Care

**Process Management is part of the Baldrige framework. Most award recipients utilize some form of process ownership to manage cross-functional processes.**

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A review of the application summaries for HC Baldrige Award Recipients shows that most make at least some reference to the use of process owners.

### **St. Luke's Hospital of Kansas City (2003 Recipient)**

The process scorecards serve to link daily operations in process measures and BSC outcome measure(s) and are utilized by **Process Owners** to monitor overall process performance.

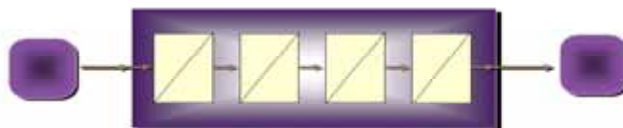
## Typical Healthcare Key Processes

### Healthcare Service Related

- Admit Patients
- Assess and Diagnose Patients
- Care for and Treat Patients
- Discharge Patients
- Medication Management
- Patient Family Education

### Business and Support

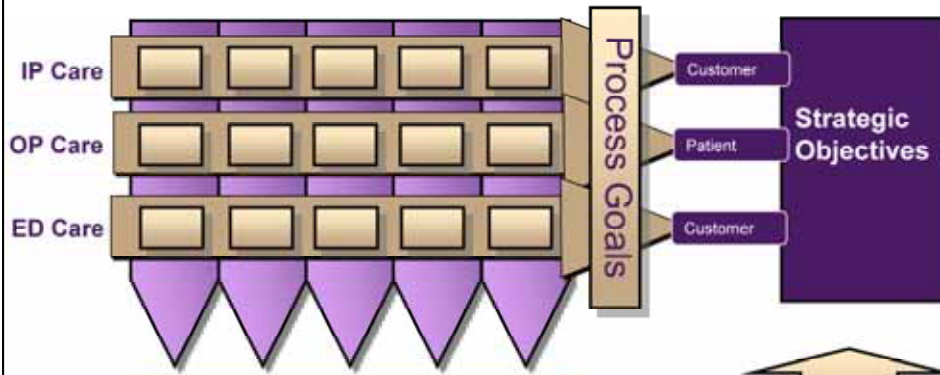
- Financial Management
- Information Management
- Supply/Partner Management
- Human Resource Management
- Facility Management
- Strategic Planning
- Knowledge Management



Many variations of key processes – even among Baldrige HC Award Recipients

# What Is Performance Excellence?

A system-wide strategy that aligns functional objectives to strategic objectives



Harmonization

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## Functional And Process Management Systems

Success is defined in the strategic planning process and is manifested by specific actionable objectives, referred to as strategic objectives.

From the figures above, we see the connection of core processes with strategic objectives, and the linkage of process deliverables with customers. Processes that produce outputs that delight customers should be the top priority.

Literally, your functional and process management systems must be integrated and harmonized, both in support of your strategic objectives.

## Performance Excellence Is a Journey

From		To
Functional Management	➔	Cross-functional Management
Inflexible, efficient, somewhat effective processes	➔	Increased flexibility, better efficiency, greater effectiveness
Walls between functions are created	➔	Walls between functions come down
Uneven patient throughput	➔	Improved patient throughput
Focus on the function or task	➔	Focus on the patient as a customer
Value stream is in the middle	➔	Value stream is end-to-end
Quality is an after-thought	➔	Quality is built-in

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The transition is about changing the way your run manage the organization.

It is a journey – part of the overall journey to excellence – there will always be opportunity to do better.

Eliminate compartmentalized thinking

Matrix management structure

Patient journey through the system – seamless and flowing

Includes patient care, includes transfers of care, include care support processes, includes financial processes

From lagging indicators to leading indicators

**In healthcare, this is a major shift!**

## Blending of Process and Service Line Management

- It is difficult—if not impossible—to design a single-patient care process to meet the needs of all patients.
- Greater benefit is achieved when process management is blended with service line (or clinical program) management.
- Service lines are organized around specialized types of patient care.



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Healthcare's challenge – **How do you design a robust process, incorporating standard practice and minimal variation ....**

**While at the same time** meeting the many and varying needs of patients?

Process mapping of the patient care process can become incredibly **complex** given all the multiple options for providing care.

Training personnel to follow **complex processes** is difficult.

**Process ownership has also proven to be a challenge** in healthcare, with lack of enough knowledge, authority, and influence to make significant and sustainable changes.

### **Proposition:**

**The answer lies in the integration of process management with service line management.**

## What Is Service Line Management?

**Service lines are a way of organizing the company based on its outputs. Service lines can be defined in three ways:**

1. Management of diseases, such as comprehensive care for cancer or heart disease
2. Management of care and/or maintenance of health for identifiable segments of a population, such as newborns, children, or geriatrics
3. Procedures or interventions, such as orthopedics, radiation therapy, or interventional cardiology

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Now, the topic of services lines.

May be called other things – clinical programs, centers of excellence, etc.

There is no standard model from system to system

Can be defined 3 ways:

### **1. INTERVENTIONS**

### **2. DISEASES**

### **3. POPULATIONS**

**Service lines do not “own the patients”. Patients may receive services from multiple service lines in a single episode of care.**

Flow is sometimes blended between service lines.

## Service Line Objectives

- Patient care protocols
  - e.g. standard order sets, evidence-based medicine
- Clinical outcome measures
  - e.g. mortality, readmissions, infection rates
- Enhanced patient experience
  - e.g. time to be seen, provider satisfaction
- Process efficiency
  - e.g. cost of care, resource utilization



Ref: ECG Management Consultants, *Creating Successful Service Lines*, Insight, Spring 2009

Service lines manage key services – very similar to the concept of product line management in other industries.

These services can be defined by clinical care paths or pathways.

Key metrics in the management of services will help drive the focus of the service lines.

## Measuring Patient Care by Episodes of Care

- **Episode of Care:** The set of services required to manage a specific medical condition of a patient over a defined period of time.



- Healthcare insurers are already looking at this approach for reimbursements.
- Some healthcare providers are beginning to recognize the value of measuring performance for episodes of care.

Ref: Shreeve, Scott, "Episodes of Care: You have got to be kidding," May 27, 2008  
(<http://blog.crossoverhealth.com/2008/05/27/episodes-of-care-you-have-gotto-be-kidding>)

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### Examples:

Hip Procedure: pre-surgical evaluation; actual surgery; post-op recovery; rehabilitation; follow-up visits

Diabetic Care: primary care visits, consults with specialists

### Extra content:

#### Quote from Intermountain:

We were not able to show a return on investment for our electronic medical record systems

until we combined them with our clinical improvement

Informatics builds the tools; Clinical quality improvement builds the content .

## Baldrige Winners That Use a Service Line Structure

- North Mississippi Medical Center
- Baptist Health Care
- Bronson Methodist Hospital
- Poudre Valley Health System
- Robert Wood Johnson University Hospital at Hamilton
- Sharp HealthCare
- St. Luke's Hospital of Kansas
- SSM Health Care

**Healthcare MBNQA winners, and the vast majority of leading healthcare systems utilize some form of program, clinical program, or service line structure.**

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A review of the application summaries for HC Baldrige Award Recipients shows that most make at least some reference to the use of service lines as a part of their organizational makeup.

One of the best pieces of evidence of the integration of service lines as part of the performance excellence planning coming from North Mississippi Medical Center:

“NMMC coordinates clinical services through five SERVICE LINES (SL’s): Cardiovascular, Emergency & Surgery, Medicine, Oncology & Behavioral Health, Women & Children. We study our patient population and develop services specifically targeted to their needs”.

“Our processes - both health care and support - are designed to meet our Mission of improving health and still maintain cost efficiency. To do so, we organize our services by SL’s and provide services in multiple settings: outpatient, ESD, hospital, home, rehabilitation, LTC and community. The SL model, focused on the patient/customer, eliminates departmental silos, involves the specific SL medical staff and manages processes in order to provide value and improve outcomes”.

“We have selected results from each SL that tell the full story of NMMC’s performance”.

## What Is a Service Line Infrastructure?

1. Clinical programs bundle resources to provide specialized, focused care and value to a patient population.
2. Typically led by a Program Director and/or Medical Director
3. Services are horizontal, and cut cross multiple departments and disciplines.
4. May be virtual, in that all components are not under one 'roof' or function



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Resource identification and alignment is a key part of service line management

Many different leadership models for service line leadership – variations of administrative leaders, medical staff leadership, nursing leadership – some with dyads and some with triads.

Leader roles may be full time assignments for major service lines, or part time assignments for smaller service lines. Depends upon the organization and what works best for them.

Often times do not have dedicated facility space – may be shared space with multiple areas of location.

To be effective, must be a well defined systematic approach. Must be aligned and integrated with other areas of support and linkage.

Intermountain described linkages:

1. Integrated **management information systems** (an outcomes tracking system)

2. Integrated **clinical / operations management structure**

3. Integrated (aligned) **incentives**

cost structure vs. net income (mediated by payment mechanisms)

integrated facility / medical expense budgets

## A Blended Approach

- Process managers work to remove unwarranted variation across the enterprise process continuum.
- Service line managers adapt the standards of care for the specialized needs of the patient.

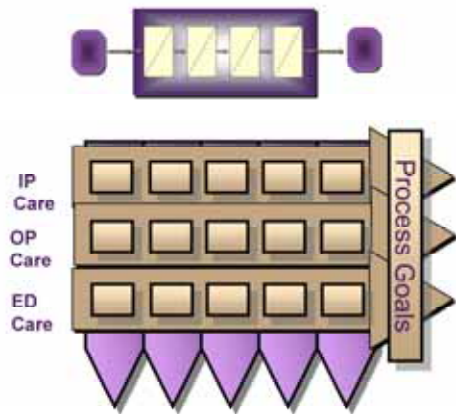
**This way of thinking about health care processes is consistent with Lean Creator Ohno's concept of "many humble streams rather than one mighty river."**

This approach becomes the essence of the work system in high performing healthcare systems.

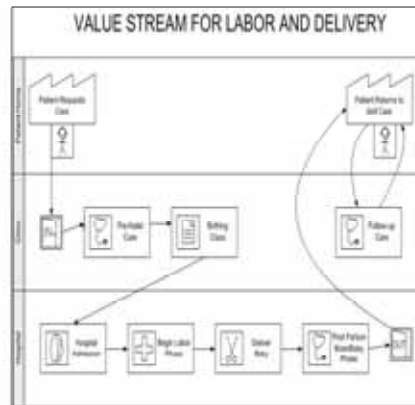
Some parts of the organization begin to adapt to more of a matrix management model, something that has become very common in other industries, especially those with a complex mix of products, customers and markets.

## Blended Model for Process and Service Line Management

### Process Managers Own the Process

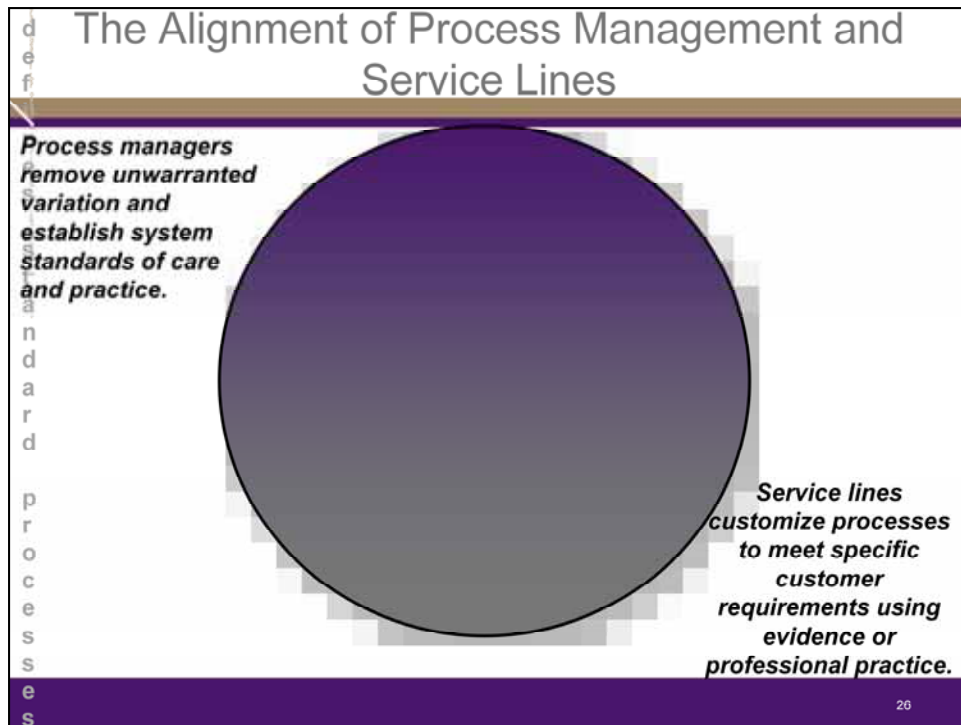


### Service Lines Own Value Creation



Process owner and value stream owners become very important roles in this type of work system.

Functional managers may own local processes, but become subservient to the higher level processes and value streams.



Quid pro quo - A Latin phrase meaning "something for something". This term is typically used in financial circles to describe a mutual agreement between two parties in which each party provides a good or service in return for a good or service.

Balance between standardization and customization

Agility to meet the changing needs of patients, technology and other external factors

## Improving Clinical Care Paths With Lean Thinking

Pre-Define	Understand and prioritize care pathways to improve
Define	Charter improvement teams and collect voice of the customer
Measure	Create a current state value stream map and measure current performance
Analyze	Analyze opportunities to remove wastes and improve performance
Improve	Select and design improvements; implement standard work
Control	Document the process and establish process controls
Sustain and Replicate	Transition to a value stream owner; select and improve the next care path

## Benefits of Lean Service Lines

- **Standard Practice**  
The means for removing unwarranted system-wide variation
- **Flexibility**  
Processes have flexibility to meet the many and varied specialized needs of patients
- **Individualization**  
Patient care processes designed to meet individual patient care needs and requirements
- **Best Science**  
Service line owns the adoption of standards of care and standards of practice.
- **Optimization**  
High patient value with the most efficient use of system resources

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### **Standard Practice**

Six sigma levels of variation reduction

### **Flexibility**

Manage complexity

### **Individualization**

Personalized care

### **Best Science**

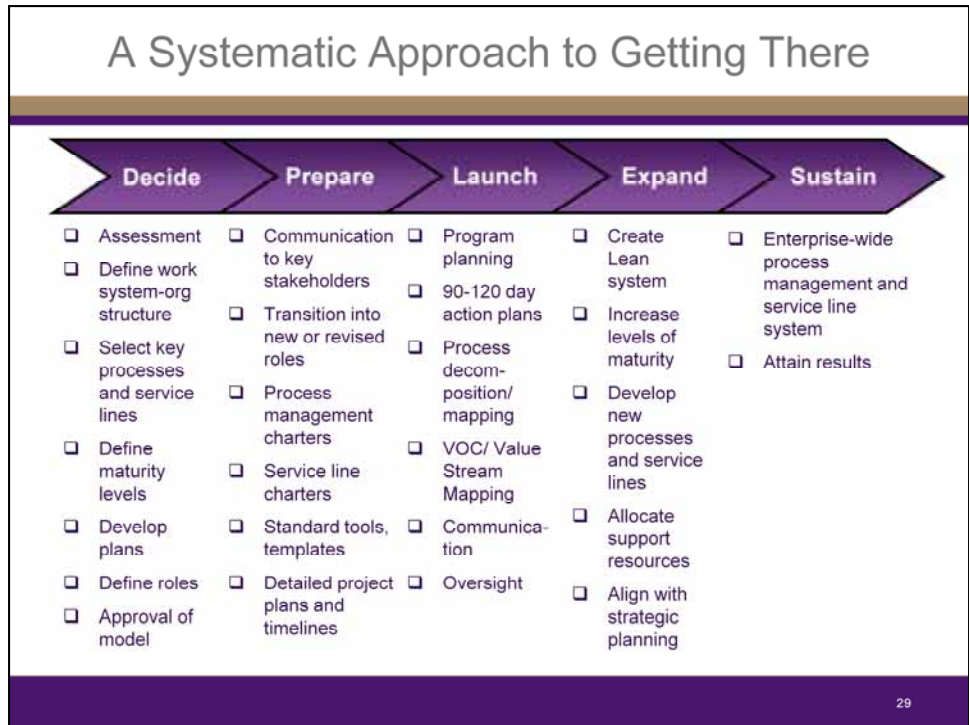
Evidence based medicine and best practice

### **Optimization**

Implies high value at lower costs; shift resources from non-value adding activities to higher value activities

“Lean is about value-creation”

Reference 6 AIMS



Change requires a roadmap

Insert a quote about roadmaps and/or change

Proven approach – 5 phases – broad application

Steps/tasks can vary; phases are absolute

Summary: Adopt approach – apply approach

This roadmap provides guidance for the final of the 3 key learning objectives

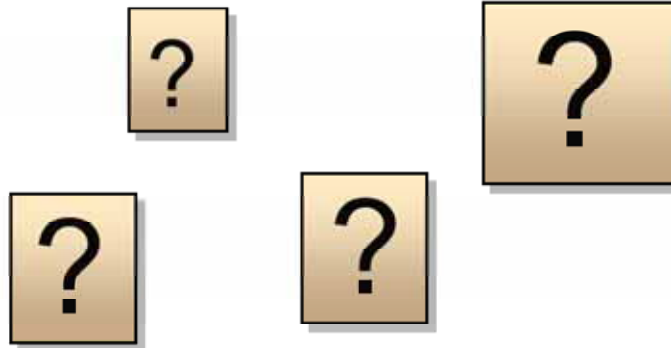
## Summary

*This presentation has provided you with information that can be used to:*

1. Learn to identify and manage healthcare provider key processes.
2. Learn how patient value and outcomes can be enhanced by applying lean concepts to clinical care pathways.
3. Know the first steps to achieving performance excellence by defining and controlling key organizational processes and service lines.

## Next Steps and Questions

Where are you in your journey from functional focus to process focus?



Do you know the answer for your organization?

Knowing where you are is critical to moving forward.

Hopefully this presentation has provided some new and useful information for you to consider.

**JURAN**<sup>®</sup>

*The Source for Quality*

**Thank You!**

Er Ralston

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