



Redesigning Care

National Rural Health Resource Center

Introduction to Lean Thinking

February 27, 2015

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Lean Healthcare Black Belt**

Today's Agenda – Introduction into Lean Thinking

- The Challenge to Healthcare
- The Principles of Lean Healthcare
- Eight Areas of Waste in Healthcare
- The Voice of the Customer



The US Healthcare Delivery system is now undergoing fundamental change ...that **neither party** seeks to roll back....

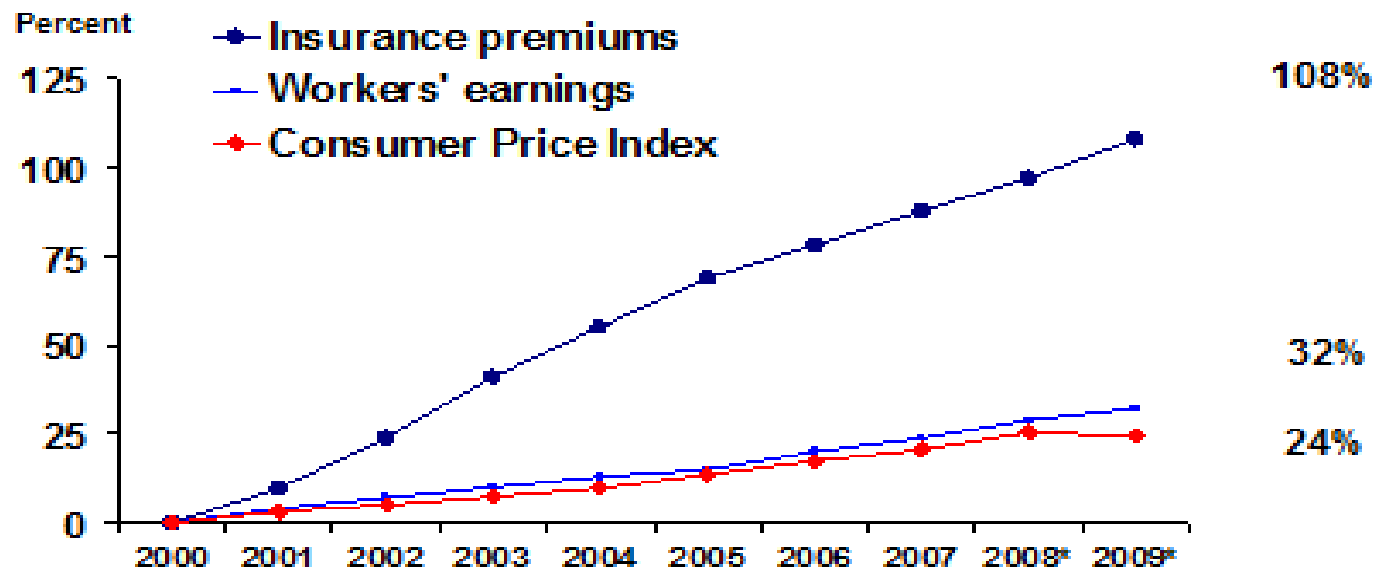
- Care delivery is enhanced by attention to **value (VBP)**
- **Efficiency** matters to both consumers and payers
- Regulatory barriers are being tested and redesigned



Unsustainability not politics is driving reform...

Premiums Rising Faster Than Inflation and Wages

Cumulative Changes in Components of U.S. National Health Expenditures and Workers' Earnings, 2000–2009



* 2008 and 2009 NHE projections.

Data: Calculations based on M. Harman et al., "National Health Spending in 2007," *Health Affairs*, Jan./Feb. 2009 and A. Sisko et al., "Health Spending Projections through 2018," *Health Affairs*, March/April 2009. Premiums, CPI and Workers' earnings from Henry J. Kaiser Family Foundation/Health Research and Educational Trust, *Employer Health Benefits Annual Surveys, 2000–2009*.

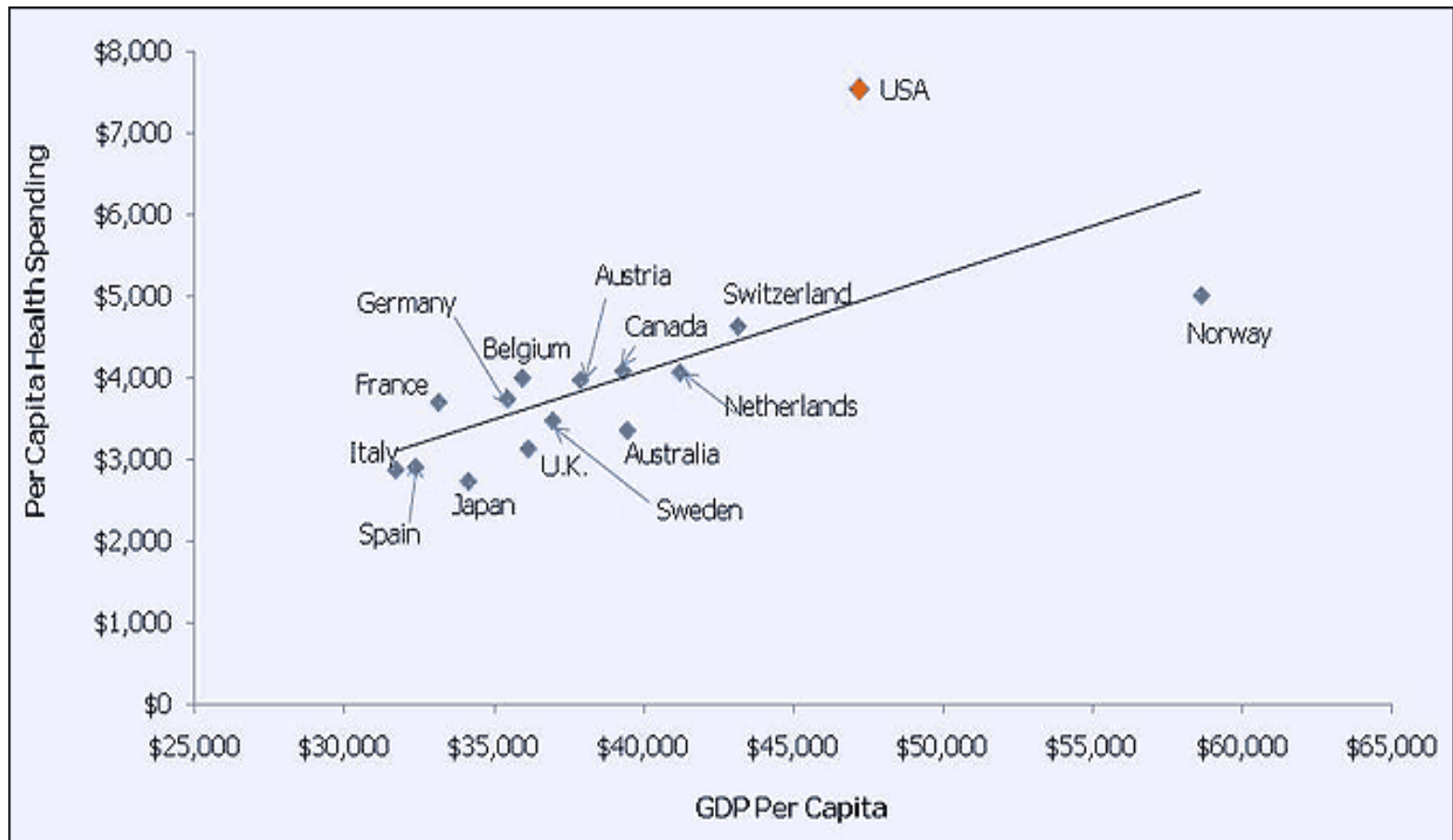
Source: K. Davis, *Why Health Reform Must Counter the Rising Costs of Health Insurance Premiums*, (New York: The Commonwealth Fund, August 2008).

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Heal • Teach • Discover • Serve

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Health Expenditure and GDP per Capita



Source: Organization for Economic Co-operation and Development (2010), "OECD Health Data", *OECD Health Statistics* (database). doi: 10.1787/data-00350-en (Accessed on 14 February 2011).

Notes: Data from Australia and Japan are 2007 data. Figures for Belgium, Canada, Netherlands, Norway and Switzerland, are OECD estimates

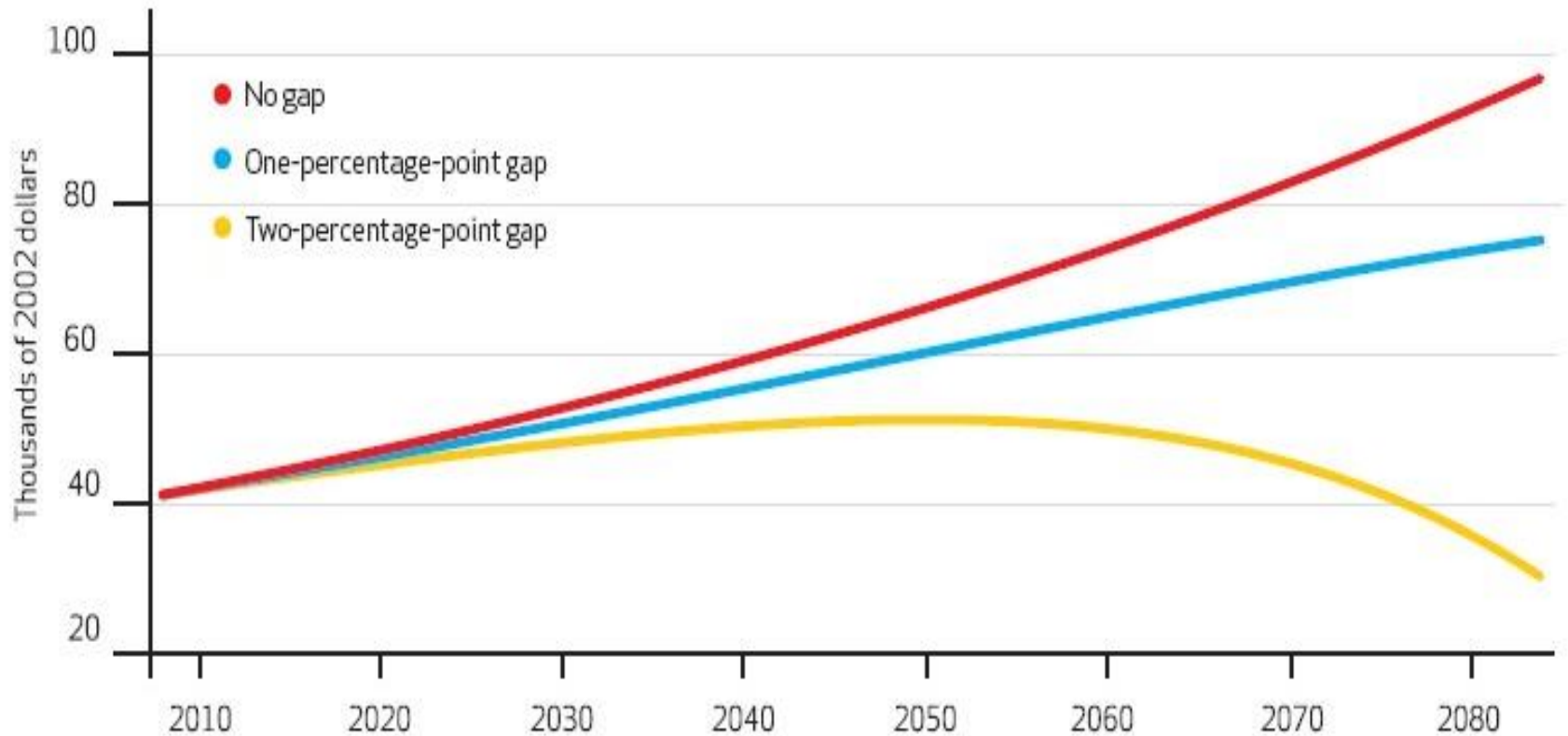
State of US Health, 1990-2010

JAMA 2013;310:591

- US life expectancy for both sexes combined increased from 75.2 years to 78.2 years
- Healthy life expectancy increased from 65.8 years to 68.1 years
- Compared to 34 countries of OECD, 1990 to 2010
 - Age-standardized death rate from 18th to 27th
 - Age-standardized years lost to premature mortality from 23rd to 28th
 - Age-standardized years lived with disability from 5th to 6th
 - Life expectancy at birth from 20th to 27th
 - Healthy life expectancy from 14th to 26th

The health care cost curve will bend... because it has to

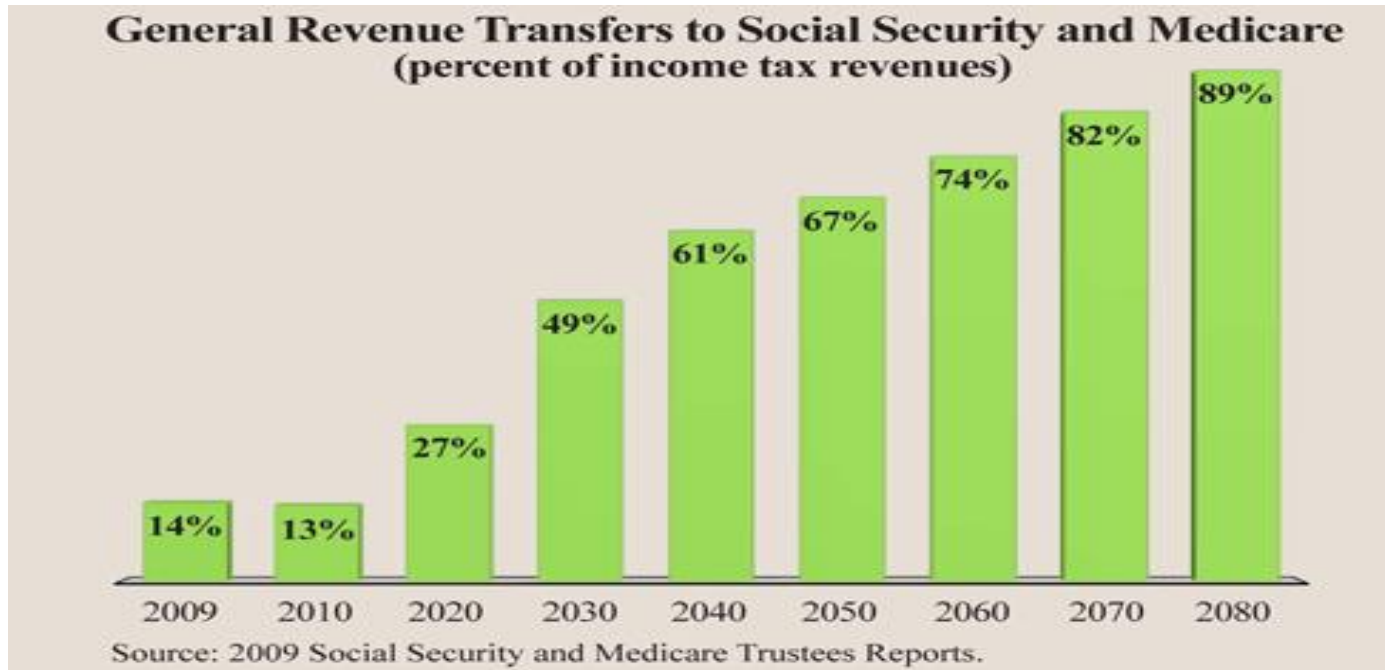
Income Available For Nonhealth Goods And Services, Under Different Gaps Between Growth Rates Of Health Spending And Gross Domestic Product (GDP) Per Capita (Projected), 2008-2084



Care redesign...a fiscal imperative



Since 1960, health care spending has outpaced GDP growth by 2.5% per



If the growth rate continues at just 2% greater than GDP for the next 75 years....."health care would consume virtually the *entirety of our national income.*" *Social Security Advisory Board, 2009

Physicians/Hospitals once dealt with two choices....Capitated or Fee-for-service

Health care reform brings many new paradigms

- PCMH with varying incentives
- CMS Bundled/Episodic Payment Program
- Evolving Physician compensation models (RVU, net revenue, Quality, Access, panel size)
- Pay-for-Performance
- Value-based purchasing
- Accountable Care Organizations (bending the trend) and sharing the savings

CMS Pledges More Than \$300 Million to Support Rural Health Transformation (Feb 2015)

HHS Secretary Burwell's historic announcement telegraphs the future:

- “Our first goal is for 30% of all Medicare provider payments to be in alternative payment models that are tied to how well providers care for their patients, instead of how much care they provide – and to do it by 2016. Our goal would then be to get to 50% by 2018.
- Our second goal is for virtually all Medicare fee-for-service payments to be tied to quality and value; at least 85% in 2016 and 90% in 2018.”

Economic realities compel CMS to “trial change”- Center for Innovations

- Fundamental changes as to how care is
 - Delivered
 - Reimbursed
- Significant changes to reimbursement rates for
 - Hospitals
 - Physicians
- Reimbursement will be linked to performance
 - Quality
 - Costs (Value base Purchasing)
- Hospitals and physicians will be paid for
 - “Bundles”
 - “Episodes of Care”
 - Clinical Integration and IT Deployment that benefits patients

The challenges facing health care systems cannot be solved without clinical integration

- **“Value based purchasing” will place new pressures for hospitals and physicians to eliminate waste, redundancy and unexplained variation**
- **CMS and Payers will continue to push us toward bundled services that define quality and efficiency**
- **Physicians and administrators must break down the silos of today to **redesign care delivery** or suffer the consequences of a failed system.**

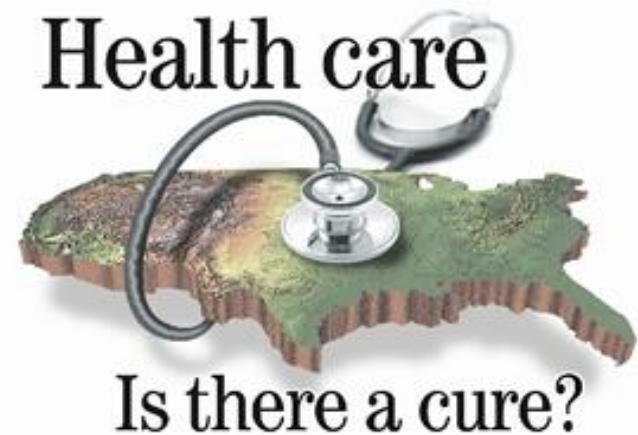
There is no “Plan B”

Introduction to Lean Concepts

In a recent expert testimony to the U.S. Congress, It was noted that of the \$2.5 trillion spent on Healthcare, a significant percentage did not add value for patients.

What do you expect the percentage of non-value added expense was?

- a) 7 – 10%
- b) 15 – 25%
- c) 30 – 50%
- d) 55 – 75%

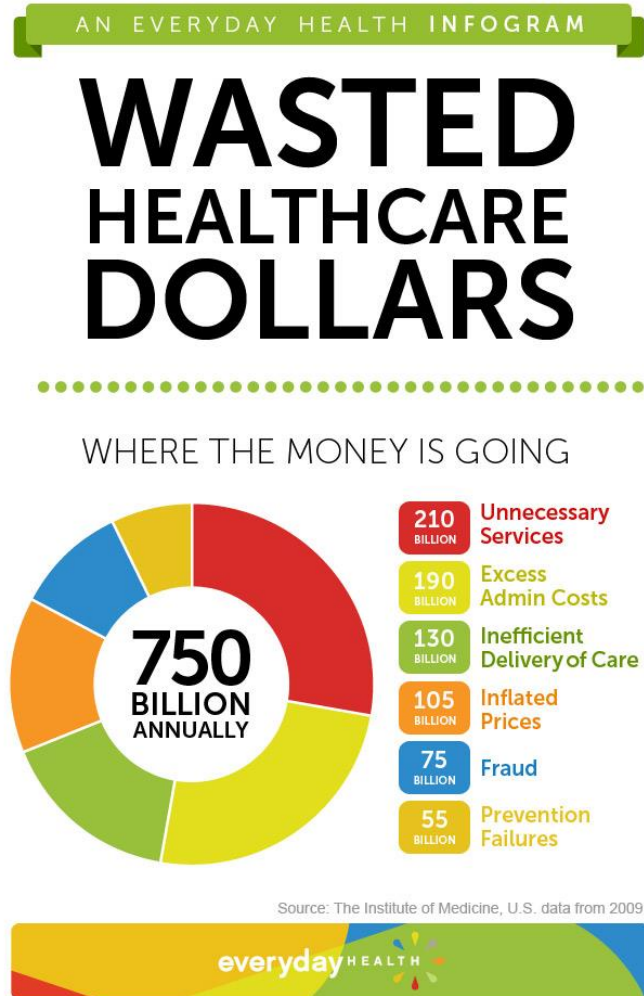


Introduction to Lean Concepts

The Answer:

c) 30 – 50%

The reported non-value added expense was 30 – 50% of the total spent, which translates from \$750 billion to \$1.25 trillion that was not contributing to patient well-being.



Introduction to Lean Concepts

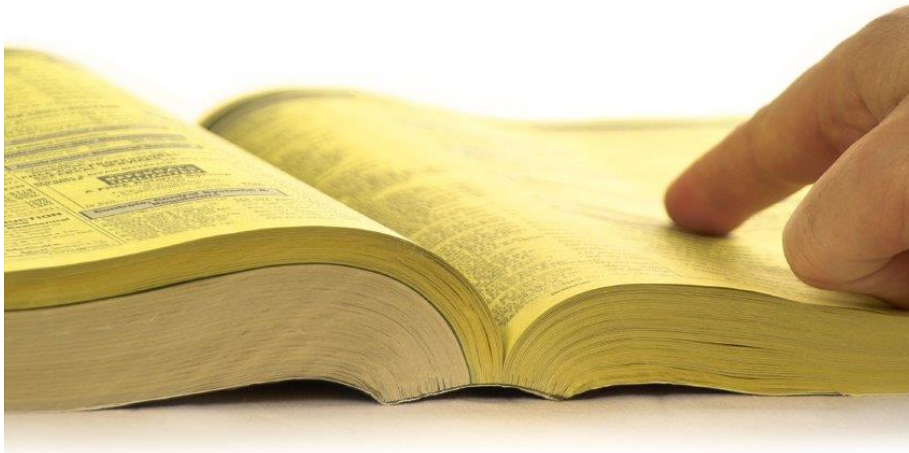
If this figure is correct, there is huge opportunity for improvement.



It has been said that only 10-15% of the total number of process steps in a typical organization are value added. If that is the case, then 85-90% of process steps are waste!

Introduction to Lean Concepts

Think about this question:



If you are buying a product or service for yourself, what is the first thing you look for?

- Price
- On-time delivery
- Quality
- Service

Introduction to Lean Concepts

That is difficult to answer without a specific product or service in mind.

You look for value.

Whether you are buying a \$40,000 car or a week's supply of vegetables, the price, availability, the quality and service all have a place in your decision making.



Introduction to Lean Concepts

Our patients and customers use the same kind of decision making as you do.

Patients and clients expect the best possible balance of price, availability, quality, and service.



They expect top value.

Introduction to Lean Concepts

We need to adopt a truly patient/family centered approach to the care that we provide.



But in order to maximize the value we provide to our patients, we must understand what **value** means to them.

The answer **MUST** come from us!



To create a delivery model that is unmatched in the eyes of our patients and positions us as a financially strong destination employer for staff and clinicians.

To create a culture of continuous improvement to respond to the changing healthcare environment.

Transformation is not optional –

The change in the healthcare system needs to be:

- **Easier** and/or
- **Better** and/or
- **Faster** and/or
- **Cheaper (Value)**



Lean Transformation is not optional – It is a Survival Imperative

- Cost cutting and efficiency gains – not the same
- Lean looks beyond basic cost-cutting exercises to create a culture focused on waste elimination and operational excellence

The Key - Process Improvement

Here is my point.....



The Holy Grail in Health Care



**Remember the old saying – “You can have 2 but not all 3”
Is it possible to drive all three goals simultaneously?**

Hint: Try eliminating waste, and see what happens!

Introduction to Lean Concepts

What is Lean Healthcare?

Lean is both:

- ✓ A simple strategy that focuses on the elimination of wastes, variation, and work imbalance, so that each step in the process creates value for the customer.
- ✓ A philosophy and a mindset that allows us to properly align our processes and provide an environment in which people can be successful.

Introduction to Lean Concepts

There are five guiding principles in Lean:

1. Identify value from a customer perspective.
2. Map the flow of produce or service.
3. Make the product or service flow.
4. Create pull, based on customer demand.
5. Continually find ways to improve.

To rethink how to make each part of our operation add customer value requires that we also look at our assumptions and “conventional wisdom” relating to the best way to do things.



Lean Thinking Principles for Healthcare

Principle	Lean Hospitals Must:
Value	Specify value from the standpoint of the end customer (the patient).
Value Stream	Identify all the value-added steps across department boundaries (the value stream), eliminating steps that do not create value.
Flow	Keep the process flowing smoothly by eliminating causes of delay, such as batches and quality problems.
Pull	Avoid pushing work on the next process or department; let work and supplies be pulled, as needed.
Perfection	Pursue perfection through continuous improvement

Introduction to Lean Concepts

Lean practices in industry have had remarkable impact in adding value for clients. Many early concepts were developed in Japan, where conditions during the second half of the twentieth century demanded a new approach.



That is the reason why many terms used in Lean environments – Kaizen, Kanban, and heijunka, for example – have Japanese names.

Introduction to Lean Concepts

Healthcare organizations have reported reductions of:

- ✓ **25%-30% in labor cost per test**
- ✓ **25%-40% in patient ER wait times**
- ✓ **50% in Hematology Turnaround time**

Improved processes help us achieve the Lean goal of providing an environment in which people can be successful. One lab reported:

“We have eliminated almost 90% of our rework, and can go for days without a page from Nurses or Doctors....So without all the rework, 90% of the stress level of our job has been eliminated.”

Introduction to Lean Concepts

How are costs affected?

Lean initiatives typically result in dramatically reduced costs for the same level of service.

Reduce the
COST
of Care!

Improve
Reliability
& SAFETY

Increase the
QUALITY
of Care!

It becomes possible to improve both quality and quantity of service without negatively affecting the budget.

Introduction to Lean Concepts



Producing more with the same or fewer resources reduces the cost base, making quality health care more affordable for everyone.

Freeing up capacity allows you to reduce wait times without over-taxing staff or facilities.

Introduction to Lean Concepts

Why isn't every organization Lean?

A part of the problem stems from the belief that hospitals ARE unique and different.

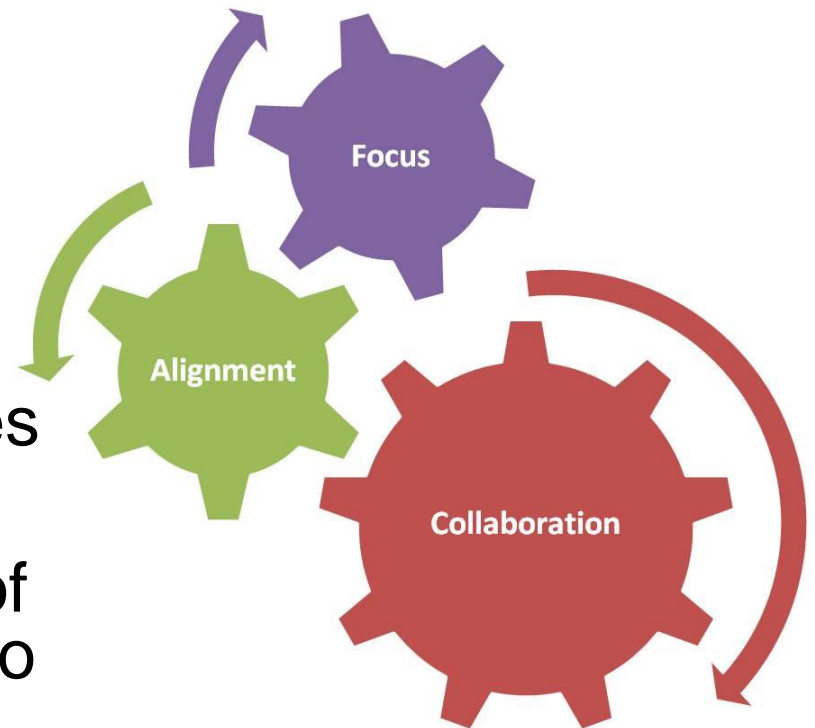
**Everyone has to be convinced to get onboard.
Management has to provide the necessary support.**

Implementing Lean involves learning new techniques, putting processes into action, and following a new culture or belief system. It takes focus and commitment to create a Lean culture that can be sustained.

Introduction to Lean Concepts

Lean requires that everyone:

- Learn new tools and techniques
- Develop new processes and follow new procedures
- Question the perception of what has value and how to measure it



Introduction to Lean Concepts

There are many tools and components that will help you as you are implementing Lean.

On your journey, remember that each component contains only part of the answer.



When the components are combined into an inter-related system that everyone learns and puts into continuous practice, you are developing a LEAN culture.

Introduction to Lean Concepts

There are many tools in the **Lean Toolbox**. Knowing them and using them correctly is critical. Some of the more common tools that you might use are:

- Value Stream Mapping
- A3 Problem Solving
- Root Cause Analysis
- 5S Workplace Organization
- Standard Work
- Mistake Proofing
- Flow/Work Cells
- Heijunka
- Kanban/Supermarkets
- Quick Changeover (Turnover)
- Kaizen Events



Eight Areas of Waste in Healthcare

Seeing with “New Eyes”



Eight Areas of Waste in Healthcare

As you learn to “see” your processes in new ways, you develop what are called “eyes for waste” so that you can first identify wastes, and then eliminate them in a systematic way.

This is a primary focus of Lean.



8 Types of Wastes – “DOWNTIME”

Excess Processing

Over-processing and Process Variability

Defects

Any repair or rework

Overproduction

Producing too much or too soon

Motion

Any motion of the worker that does not add value

Waiting

Waiting time in the “waiting room”, Waiting for information

Inventory

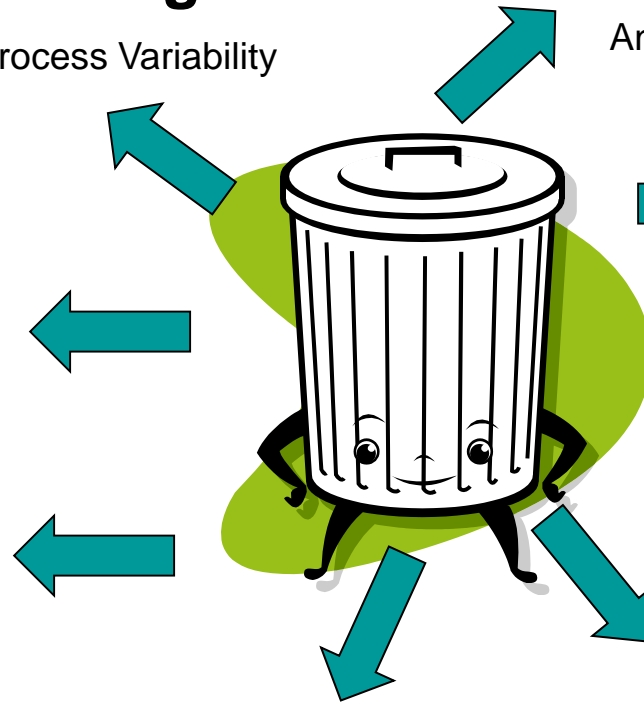
Any more than the minimum to get the job done

Not Utilizing Peoples Talent

Any failure to fully utilize the time and talents of people

Transportation

Any conveyance of people/product is waste



Eight Areas of Waste in Healthcare

Lean thinking is the relentless pursuit of the perfect process through waste elimination.



We Spend 75-95% of Our Time Doing Things That Increase Our Costs and Create No Value for the Customer!

Waste of money, time, supplies, or good will-decreases value.

Eight Areas of Waste in Healthcare

How Does Waste Affect Me?

- ✓ Causes *physical fatigue*
- ✓ Causes *emotional fatigue*
- ✓ Increases *frustrations*
- ✓ Increases *stress*
- ✓ Causes you to *blame others*
- ✓ Steals your time



Eight Areas of Waste in Healthcare



**To have the
courage to
see it as waste!**

Why?

**Because waste often
hides itself as work!!**

Eight Areas of Waste in Healthcare

Lean practitioners often categorize all work in one of three groups:

Value Added Work is any activity that transforms the product or any service that our client (or patient) is willing to pay for.

Incidental Work is any activity that does NOT add value as defined above, but is currently required in order to deliver the product or service to the client or patient.

Pure Waste is any activity that consumes time and/or resources, but does not add any value.



"We'll continue where we left off from the last meeting... the topic, I believe was... 'group discussions are a waste of time'."

Eight Areas of Waste in Healthcare

Waste of **Overproduction** happens whenever a process step produces faster than, earlier than, or more than the next step in the process can handle.



Overproduction is evident throughout healthcare. This often results in additional time and cost to manage and triage.

Eight Areas of Waste in Healthcare

Overproduction occurs because we don't always know the process order that will best meet the demand. This leads to imbalance of work and doing the wrong thing at the wrong time – often for what we believe are the right reasons.



Eight Areas of Waste in Healthcare

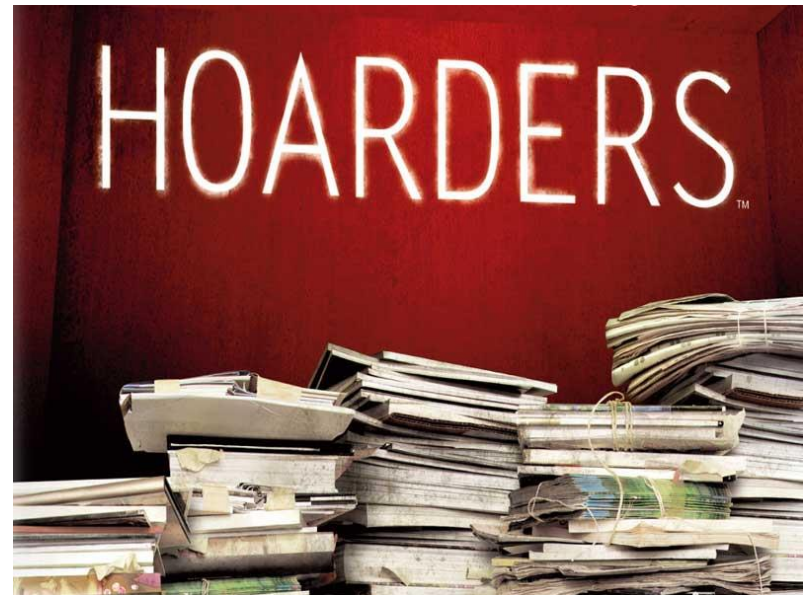


Another type of waste is **Waste of Inventory**. We would all recognize patient-care supplies, drugs, and other consumables as inventory. Obviously, a hospital or clinic must stock a realistic supply of such items.

Eight Areas of Waste in Healthcare

An unfortunate side effect of inventory problems is “hoarding.”

When practitioners and staff do not trust the inventory management, they hoard extras away, which generally just makes the overall inventory problem worse!



Eight Areas of Waste in Healthcare

There is a second type of “**Inventory**” that is less obvious as such, but leads to many of the same problems.

Patients, specimens, tests, reports, forms – anything that has been overproduced and/or is waiting for the next processing step is categorized as ‘**work in process**’ (WIP).



Eight Areas of Waste in Healthcare

When either raw inventory or work-in-process inventory is sitting idle, it still consumes time and space and adds cost.

**Consider your own workplace.
Where do you see inventory
sitting?**

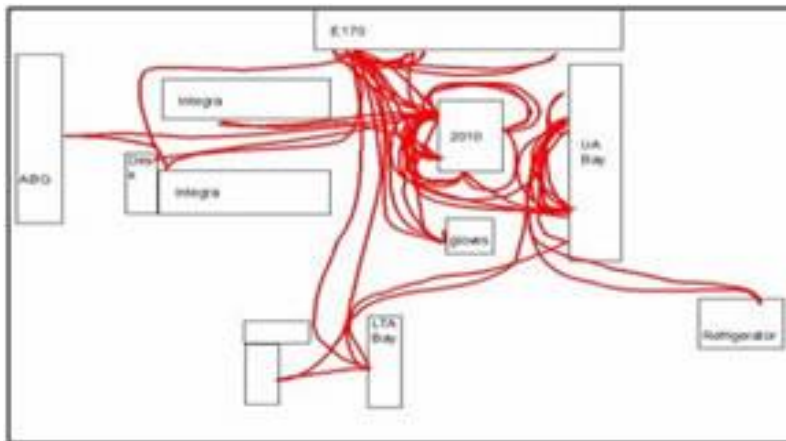
Inventory also moves around,
on carts and other conveyances,
or in the case of patients, in
wheelchairs or on stretchers.



Eight Areas of Waste in Healthcare

The Waste of Transportation

If we measure the total distance that supplies, patients, specimens and other types of work-in-process travel within our healthcare system, we will see another type of waste:



Any unnecessary travel experienced by a person or material between processing steps is **Waste of Transportation**.

Eight Areas of Waste in Healthcare

Whether it is staff, a workstation, or a machine that cannot start or complete a scheduled procedure, **Waste of Waiting** results. This can occur for a variety of reasons including missing charts or materials, delayed test results, or limited equipment availability.



Whatever the cause, waiting adds unnecessary time and cost to the organization as well as reducing patient satisfaction.

Eight Areas of Waste in Healthcare

Waste of Motion occurs when we need to move to obtain information, instruments, equipment, materials, or other resources to complete a process. Each extra lift, turn, push, pull or step adds time and cost.



For example, in Food Services, a poor kitchen layout creates **Waste of Motion** when staff must look for and retrieve ingredients, pans, utensils, equipment, supplies, or information outside their workstation

Eight Areas of Waste in Healthcare

Other examples of **Waste of Motion** include looking for patients, specimens, treatment supplies, or test reports.



At one outpatient clinic, it was noted that a Phlebotomist spent more time finding the patients than actually drawing their blood samples!

Eight Areas of Waste in Healthcare

Waste of Motion can also contribute to fatigue. When you are tired, you are more likely to make **errors** or produce **lower quality** work.



Eight Areas of Waste in Healthcare

Another common waste is **Waste of Rework**. Rework occurs whenever a task is not completed correctly the first time, so that one or more steps must be repeated.

Like earlier examples, waste of rework often accompanies other types of waste. In a healthcare environment, **rework** is often the result of lapses in communication.

Rework is triggered when we discover a problem or defect in a patient care process or support activity.



Eight Areas of Waste in Healthcare

Performing unnecessary work that does not add value for the patient or client creates **Waste of Over Processing**

Poor planning, poor understanding, and unnecessary procedures or specifications can all contribute to **Waste of Overprocessing**

Consider the following example...



Eight Areas of Waste in Healthcare

A hospital admissions department routinely completed a form for each patient checking in for day surgery and sent a document with the patient file.



Why? Admissions thought day surgery needed it.

Day surgery separated the document from the patient file and diligently filed the document by date.

Why? Day surgery thought it must be important because admissions had sent it!

Eight Areas of Waste in Healthcare

Sometimes **Overprocessing** is deliberately chosen as a method of preventing quality problems and errors. This is one approach to protecting ourselves against negative outcomes, but is it a great approach?

Besides being wasteful, Over processing can sometimes even introduce new errors, for example with duplication of information.

A better – and more Lean – approach is to determine the root cause for potential errors and design the root causes out of the process.



Eight Areas of Waste in Healthcare

Overprocessing often results through poor information sharing. “Mary” gave her history five times, but when she arrived for surgery, the anesthetist was not aware that Mary’s jaw was wired shut.



Clearly, this is unacceptable. We need to ask questions such as:

“What specifically is preventing information sharing?”

“How can information flow between processes be improved?”

Eight Areas of Waste in Healthcare

When an organization does not identify and use a person's potential (hands, head, and heart) on the job, this results in the **Waste of Underutilizing People's Skills**

Wasting people's ideas or talents costs time and money, whereas staff engagement leads to increased staff satisfaction.



Organizations that open up communications can experience the powerful advantage of real breakthrough thinking.

Eight Areas of Waste in Healthcare

If employees are not properly trained or if they are given unnecessary tasks, their time is literally being wasted instead of being directed toward adding value to the organization.

This raises their self-esteem and they, in turn, are more careful, more productive, and more likely to contribute to process improvement.



Eight Areas of Waste in Healthcare

As you continue
your journey in
Lean practices,
you will
increasingly
“see” what was
previously
“invisible.”



Talent

Underutilizing
people's talents,
skills, & knowledge.



Inventory

Excess products
and materials not
being processed.



Motion

Unnecessary
movements by
people (e.g., walking).



Waiting

Wasted time waiting
for the next step
in a process.



Transportation

Unnecessary
movements of
products & materials.



Defects

Efforts caused by
rework, scrap, and
incorrect information.



Overproduction

Production that is
more than needed or
before it is needed.



Overprocessing

More work or higher
quality than is required
by the customer.

Eight Areas of Waste in Healthcare

More important than naming the waste is recognizing that a waste exists and focusing on finding the underlying root cause instead of externally treating the symptoms.

**This often means
shedding old ways of
thinking, and in effect
changing our paradigm.**



The Voice of the Customer

Definition of Customer

- Anyone whose success or satisfaction depends on one's actions

Lean Process for Defining a Problem:

- Gather the voice of the customer
- Analyze customer needs
- Prioritize customer needs



**Customer satisfaction is only achieved
through higher quality**

The Voice of the Customer

The “voice of the customer” (VOC) is a process used to capture the **stated and unstated** requirements/needs from the customer (internal/external) to provide the best in class service/product quality.

The VOC can be captured in a variety of ways:

- Direct discussion or interviews
- Surveys
- Focus groups
- Customer complains
- Observation



The Voice of the Customer

Who is the customer?

- Patient
- Patient's Family
- Patient's Physician
- The Payer
- Regulatory Agencies
- Other Caregivers



What about internal customers?

Understanding the Voice of the Customer (Patient) is Critical

The impact of customer satisfaction on profitability is widely researched and reported.

- For every patient complaining, there are 20 more who do not complain, but will not return.
- Understanding the patient's wants has an immense implication on the satisfaction, retention, staff morale and profitability of an organization.

The Voice of the Customer

The Malcolm Baldrige National Quality Award

Defines the VOC as the “process for capturing patient-and stakeholder-related information.”

Voice-of-the-customer processes are intended to be proactive to continuously capture stated, unstated, and anticipated patient and stakeholder requirements, expectations, and desires.

Next Step – Waste Walk Exercise



Lean Exercise: Lead a Waste Walk

Waste definition, instructions and forms needed to lead a waste walk. Let this simple exercise start the lean improvement conversation.





Redesigning Care

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