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Short introduction to Lean for NHS Trusts



Agenda

- **Introductions**
- **Introduction to Lean and History**
- **Main Concept of Lean: Value Stream Mapping**
- **Main Concept of Lean: 5S**
- **Main Concepts of Lean: 7 Waste**
- **Waste Walk**



What is Lean

- Focus on Value from a **Customer (Patient) point of view** on every step of process
- **Obsession on removing waste** within the ‘whole system’
- Bottom up approach in identifying value and waste – assumption that **much of waste and value is hidden**
- A true lean system would “flow” and need **little command and control**

Leads to sustainable change ingrained in the ‘DNA’ of an organisation



Lean approach is significantly different from traditional approaches to change

Other approaches

- Resources focus on meeting Goal setting/meeting Targets & assurance
- Educate people to work their specific job smarter
- Have a leader that drives change – hope other follow
- Command and Control People to ensure delivery – aim to hit target
- Batch and Queue – maximise ‘efficiency’, use overheads to manage
- Flavour of the year change initiative

Lean Approach

- Resources focused on understand the value and value stream for your ‘products’ – focus on removing waste
- Educate people to make the system flow faster
- Aim for all team members to be leaders and followers
- Intrinsically trust your people to deliver – beyond expected results
- Aim for one piece flow – maximise ‘effectiveness’ , eliminate overheads
- Obsession with continuous improvement



The Origins of Lean: Mass production failed to adapt to change - lean manufacturing emerged as the alternative

- Every increasing market
- Vast Resources
- Infrastructure

GM

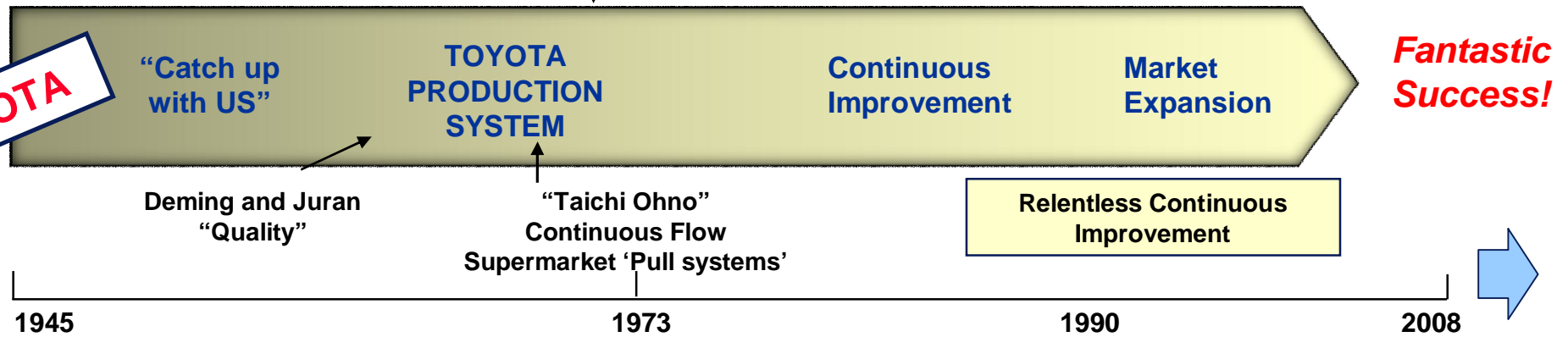


- Small Market
- Few Resources
- Need Cash
- Lousy Quality

1st Oil Shock

Increasingly Complex Vehicles and Diverse Market

TOYOTA





Benefits of Lean

- **Long term sustainable improvement**
 - Not a short term ‘financial fix’
 - Financial results often surpass expected
- **Relatively low investment**
 - No costly assets/infrastructure
 - No over reliance on external consultants
 - Low investment of new technologies
 - Waste elimination drives financial benefits for investment
- **Straightforward principles and concepts**
 - Not a complex management fad understood by a few
- **Tried and Tested**
 - It works!

Improves quality of services and patient safety – Every patient matters



The benefits of applying lean for over 40 years is clear for Toyota

Global Car Companies Compared	Sales (volume)	Sales (£bn)	Profit (£bn)	Market Values (£bn)	Workforce
Toyota	8.2m	176	12.5	208	285,000
GM	8.3m	192	-10.9	20	335,000
Daimler/Chrysler*	4.8m	185	-1.7*	65	382,000
Ford	6.6m	153	-12.7*	16	300,000
Volkswagen	5.2m	118	5.2	43	344,000

*2006 *Chrysler only)
Source: PriceWaterhouseCopers, 2005

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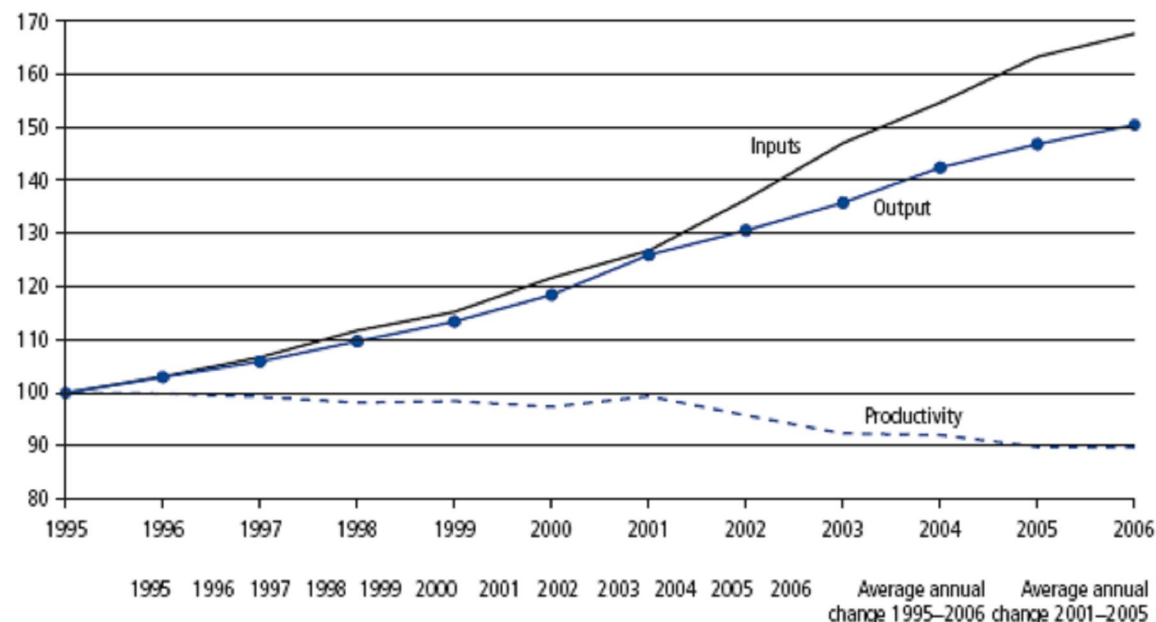
Where does Lean Fit in the NHS?



Productivity in the NHS has not improved since 1995, in fact has got worse since 2001

Figure 1
Health care output excluding quality adjustment, health care inputs and health care productivity

United Kingdom, Index 1995 = 100 and per cent



Source ONS

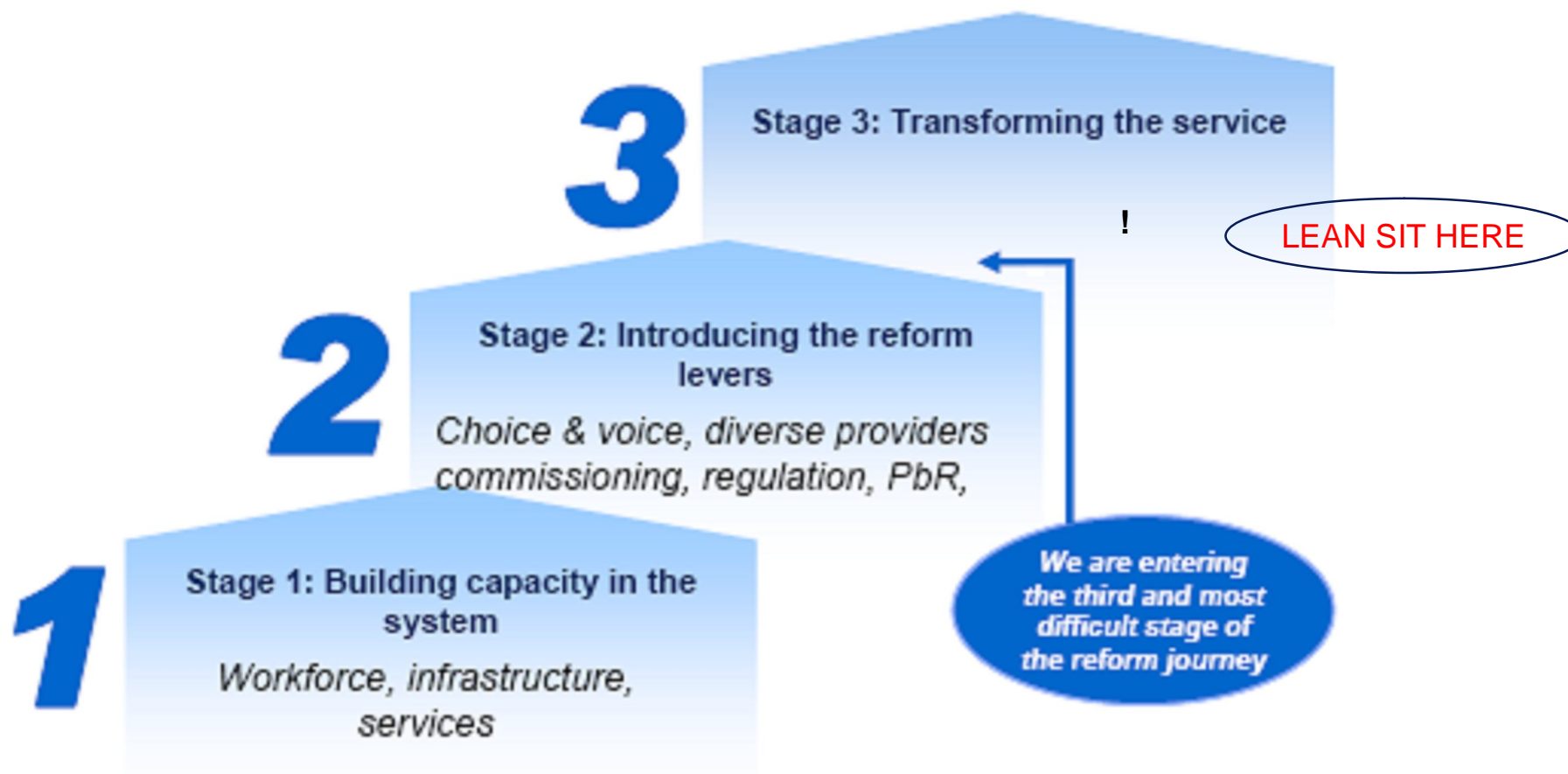
Better use of resources is at the heart of a Lean Transformation

- “For hospital and community health services, the rise in staff and purchased goods and services has outpaced the rise in activity, whether or not the index includes a quality adjustment*” - ONS
- Output increases were mainly due to activity, primary care consultations, drug use, rise in quality of health care.
- Input costs were mainly of labour costs, use of non NHS resources and purchased goods
 - 67% increase input in volume or resources from 1995 to 2006
 - 2006 (89.7Billion, 7.5% of GDP)

* to reflect the higher proportion of patients surviving for more than 30 days after hospital admission.



We are in the 3rd Stage of systems changes to the NHS and Lean Transformation Aligns with this



From Christine Beesely: Chief Nursing Officer

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“Lean’s focus on delivering care is a refreshing antidote to benchmarks, targets and the traditional approach to performance management. The emphasis it puts on looking at the whole system is valuable.”

Nigel Edwards, Policy Director, NHS Confederation



Only we can make this happen!

“Our success in moving to this next stage of the journey doesn’t just rely on me making the system more flexible and responsive, it also relies on the right response from local leaders across the NHS”

**David Nicholson NHS Chief Executive
Dec 2007**

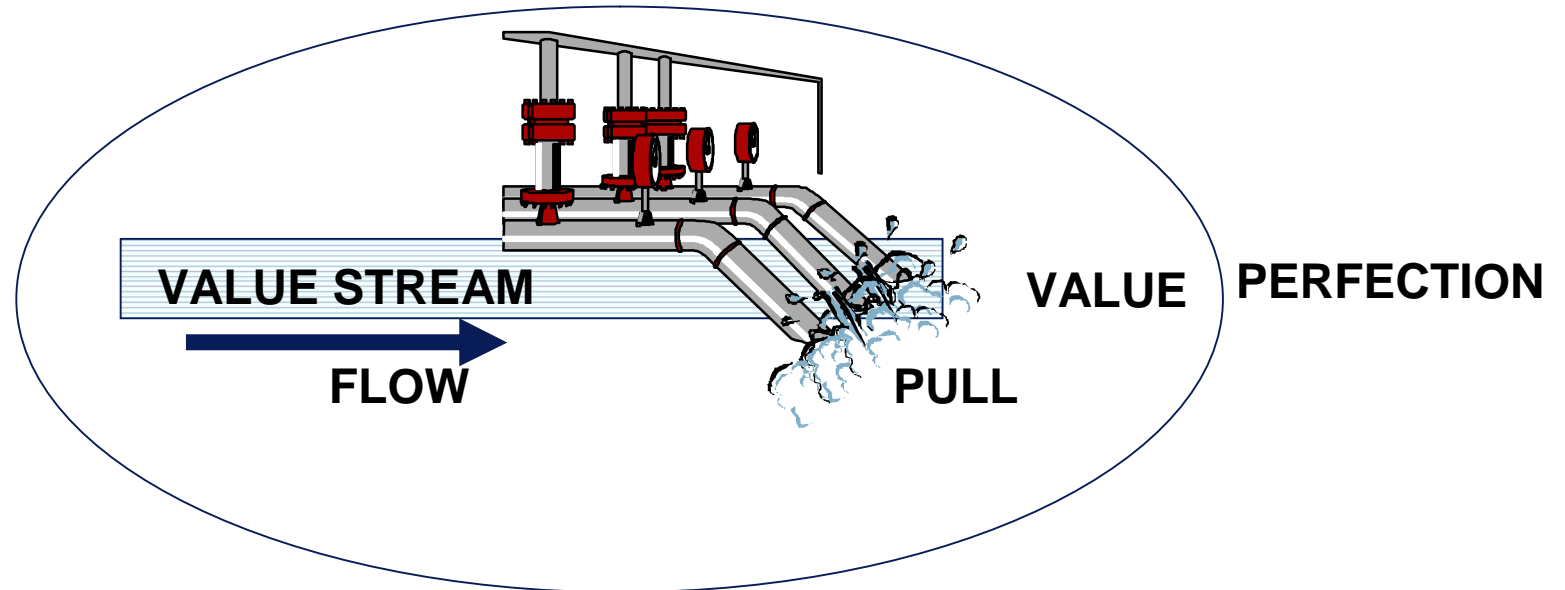


Principles of Lean



Five Key Concepts underpin Lean

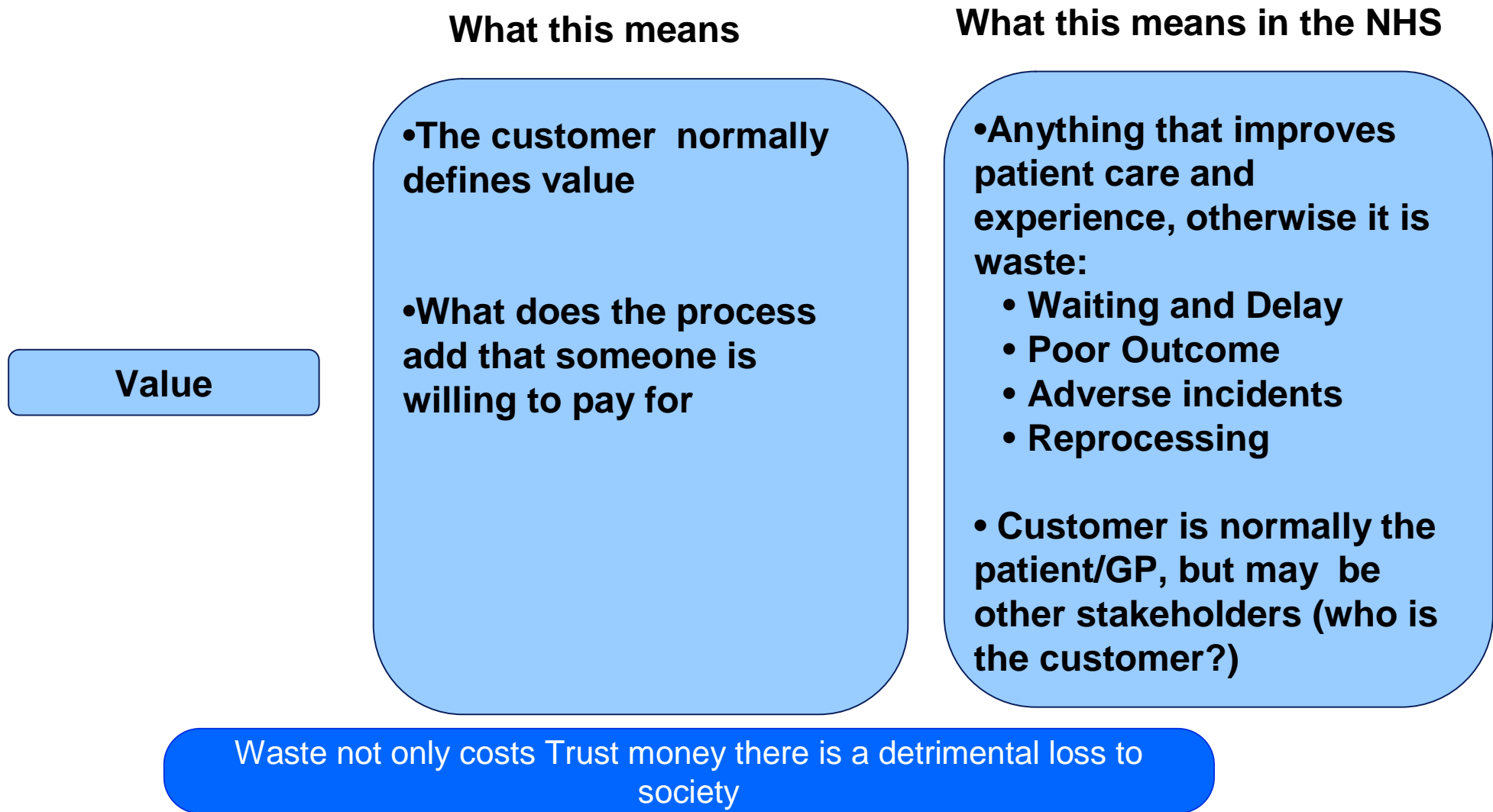
- Value
- Value Stream
- Flow
- Pull
- Perfection



A value stream does not sit in isolation but is part of a bigger system



Five Key Concepts underpin Lean





Five Key Concepts underpin Lean

Value Stream

What this means

- The core functions or steps that deliver the value
- Considers all steps from start to finish across ALL boundaries

What this means in the NHS

- For a patient this would normally start from GP visit to a satisfactory conclusion (from a patient point of view)
- A Hospital Trust may work on a value stream that defines the GP/primary care as a supplier
 - Supplier is still part of value stream



Five Key Concepts underpin Lean

Flow

What this means

- The value adding activities must flow without blockages (metaphor of tap water/river)
- Blockages are caused by :
 - Batching
 - Multiple processes all adding little value
 - Misalignment of demand versus capacity

What this means in the NHS

- Adapt processes that flow with demand, have fewer steps/handovers /rework
- Areas that stop flow
 - Multiple referrals
 - Multiple pathways
 - Patient Batching
 - Misunderstanding of demand by time of day/day/month



Discussion

Our analysis indicates most queues within the NHS are relatively stable, suggesting that capacity and demand variation are the cause.

Silvester & Walley, June 2005



Five Key Concepts underpin Lean

Pull

What this means

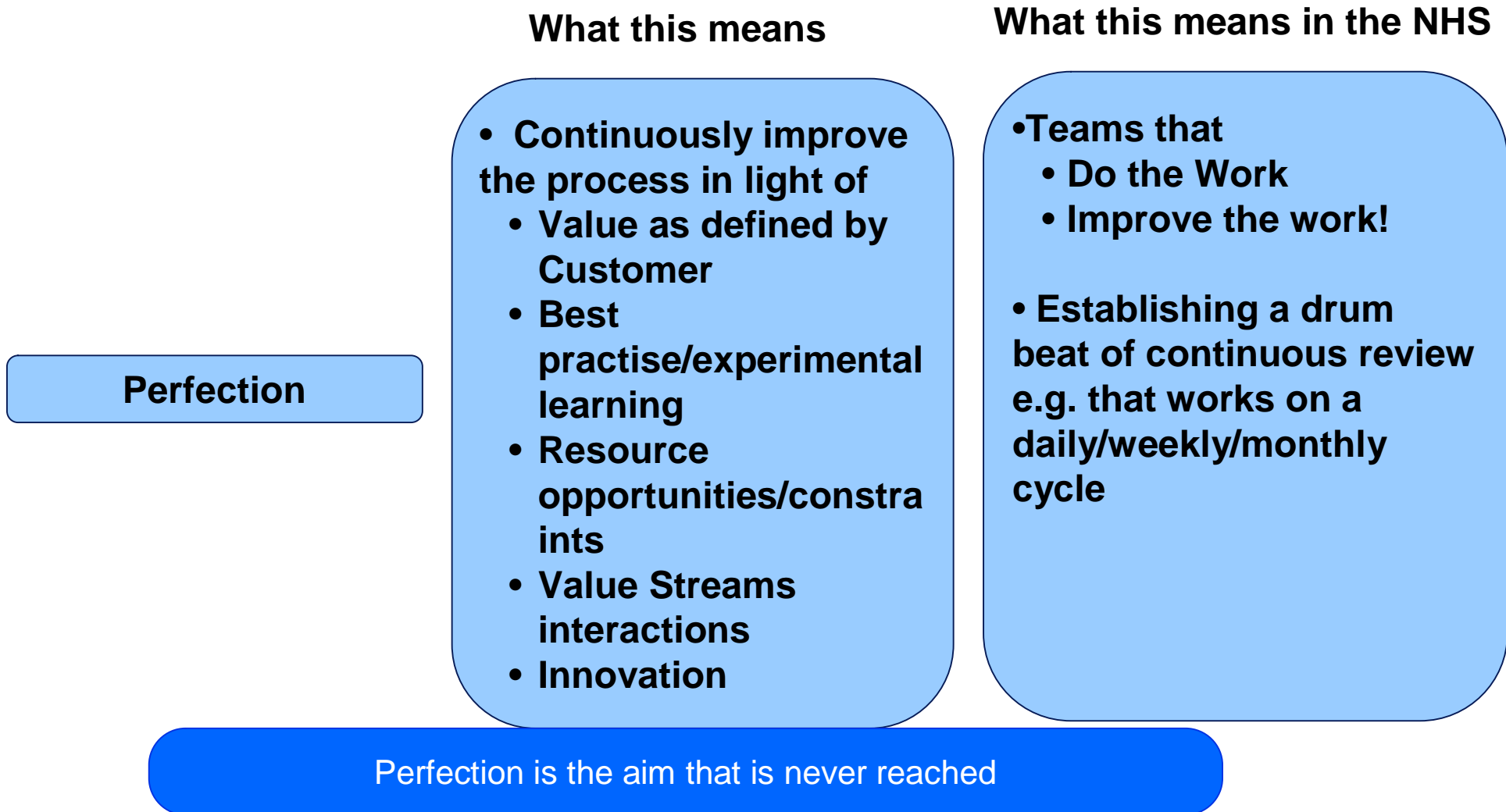
- **Two ways pull can be applied**
 - **Working on actual demand (assuming no capacity constraints)**
 - **Pulling the whole process by using the bottleneck process as a signal**

What this means in the NHS

- **Understand whether processes can be**
 - **pulled by patient (e.g. walk in STD/Blood Test)**
 - **Signalled by bottleneck (Empty beds drive a process of pulling the next patient)**



Five Key Concepts underpin Lean





Overview of Lean Concepts



Value Stream Mapping



Traditional Process Improvement versus Lean Process Improvement

Traditional Process Mapping

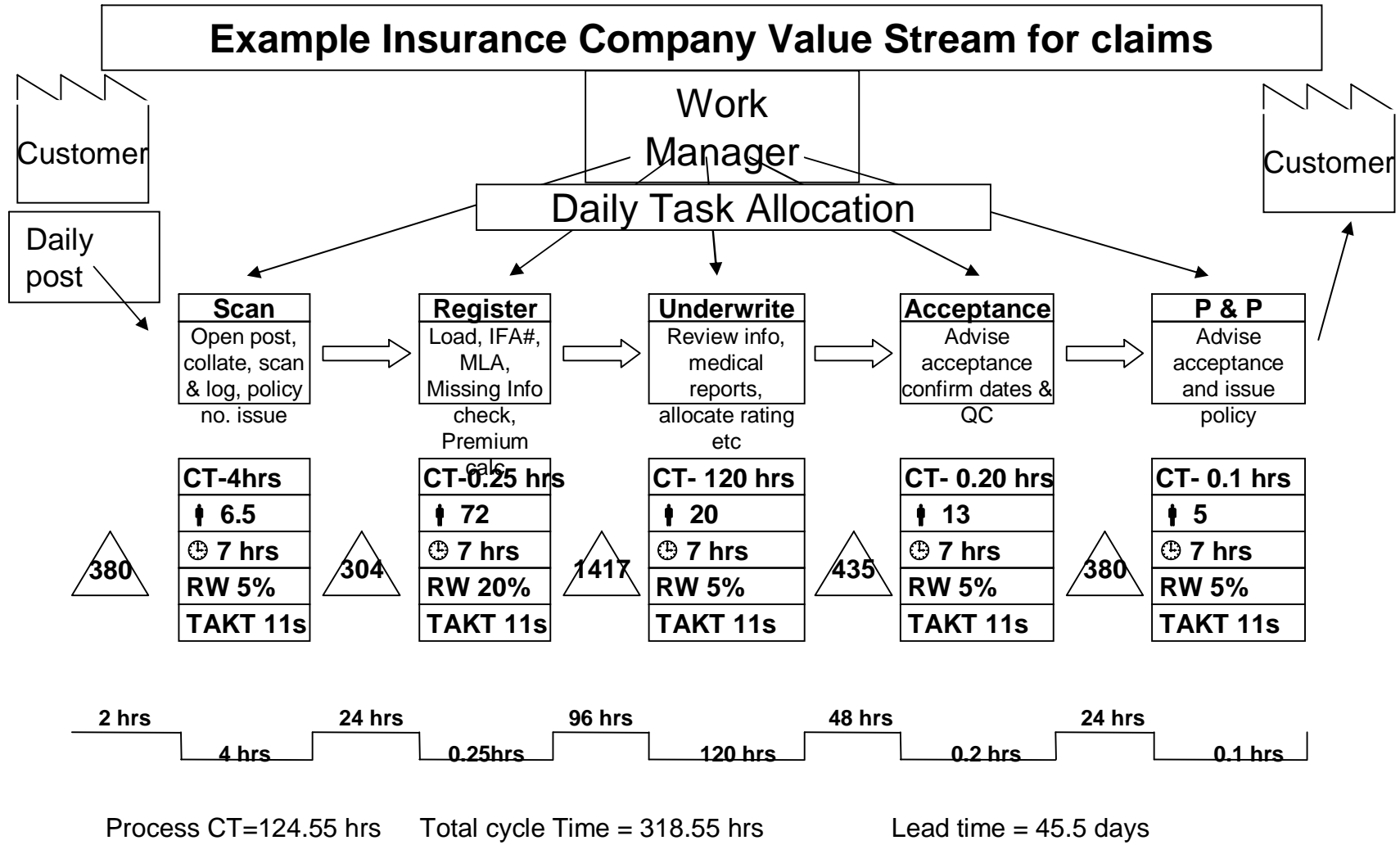
- Calculating journey times and identifying bottlenecks
- Focus on activity levels at each step
- Look at activity steps as a whole rather than product specific
- Aim to 'push' things through faster

Lean

- Start with Takt time (how often is 1 created/needed)
- Focus on Waste, Rework, Scrap, Set up time at each step
- Align Cycle Time to Takt Time
- Product flows measured individually
- Obsession with measuring cycle time to takt time



Value Stream Mapping can be carried out in all environment – including administration





Lean concepts: 5S



What Are The 5Ss?

Sort	Organisation
Stabilise	Orderliness
Shine	Cleanliness
Standardise	Adherence
Sustain	Self-discipline

5S is a process and method for creating and maintaining an organized, clean, high-performance workplace



Sort



Sort

In most organisations physical and information items are collected and never disposed/put away long after they are required on 'value add' activities

The continuous moving, counting, storing all create waste and interrupt flow

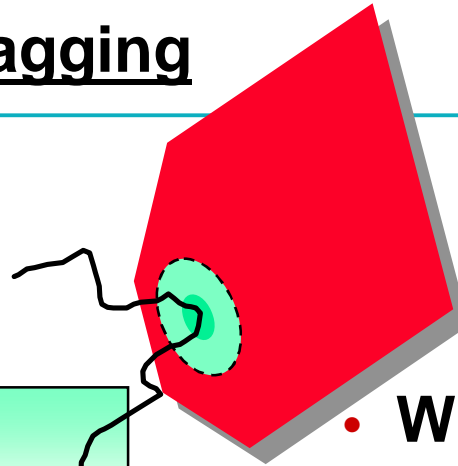


Sort - Benefits

- **Frees up space**
- **Removes clutter/obstacles**
- **Stops people adding to it**
- **Stops hoarding**
- **Improves safety**
- **Controls what is in an area**
- **Feeds into the Stabilise process**



Sort - Red Tagging



- **Obsolete, unneeded?**
- **Stored here, used elsewhere?**
- **Used infrequently?**
- **What is this used for?**

- **What do we need ?**
- **What do we not need ?**
- **What can we remove ?**

A visible way to identify items that are not needed or are in the wrong place



Medical records : university hospitals of Morecambe bay



Sort (Organise)



Distinguish Between What Is And Is Not Needed



Stabilise



Stabilise

Employees who work in cluttered and untidy factories think that searching for equipment and paperwork is a normal part of their job.





Stabilise (Orderliness)

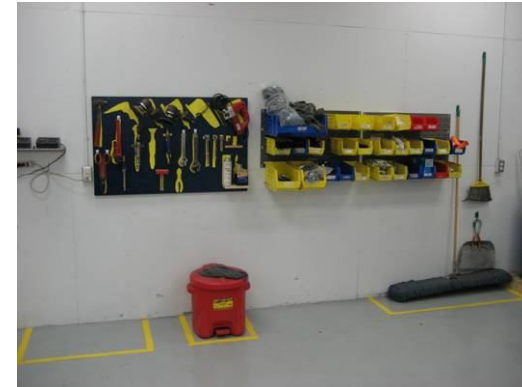
- **Stabilise ensures that there is a place for everything and that everything is in its place.**
- **Determine the best location for all necessary items.**
- **Determine how many of each item will be stored in a given location and set limits on the space allocated.**
- **Locate items in racks, containers, shadow, boards**
- **Increase job efficiency by making it easy for anyone to find, use, and return items.**
- **Organise things in an orderly and tidy manner and place things close to the point of use**



Stabilise



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Shine



Shine

- **A dirty workplace is often tolerated – however it often hides underlying problems within processes.**
- **In a clean environment dirt can easily be viewed (for example spillages, leaks)**
- **In the NHS Shine has the additional benefits to patient safety and perception**



Shine (Cleanliness)

This relates specifically to cleaning. It means:

- **Eliminating all forms of contamination**
 - Eliminating dirt, dust, fluids, and other debris to make the work area clean.
- **Finding ways to keep the workplace clean**
 - Finding ways to keep the workplace clean at all times. For example, eliminate sources of contamination, such as dust.
- **Adopting cleaning as a form of inspection**
 - Adopting cleaning as a form of inspection. Cleaning exposes abnormal and pre-failure conditions such as oil leaks, excessive corrosion on a lifting point, chips in a cutting tool.
 - Making cleaning part of everyday work
 - Making cleaning part of everyday work for all everybody. A clean environment builds pride in the workplace.

Keeping the work place clean at all times



Shine - Benefits

- **Makes problems easier to find**
- **Creates a better working environment**
- **Aids efficiency and reduces accidents**
- **Supports the Standardisation process**
- **Better customer perception**



Standardise



Standardise (Adherence)

- 1: Sort (Organise)
- 2: Stabilise (Orderliness)
- 3: Shine (Cleanliness)
- 4: Standardise (Process)
- 5: Sustain (Self-discipline)

*Standardise is the Process to **maintain** and **monitor** the first three S's*



Standardise (Process)

- Workers
 - Complete Day with equipment in place according to standard
 - Quarterly Red Tag Sort Exercise
 - Regular review of Stabilise (order in the workplace) and improvement
- Information/Infrastructure
 - Waste Disposal/Storage Bins exist
 - Information Board on expected standards to be followed
- Audit
 - Inspection Audit Quarterly and results feedback to team
 - Auditor could be another department



Standardisation - Benefits

- Provides schedule of 5S activities
- Ensures deterioration does not occur
- Makes first 3S's a habit
- Starts problem solving/improvement activities
- Promotes discipline, Sustains the process



Sustain



Sustain (Self-Discipline)

- **Ensure the 5S become the DNA of the organisation**
 - Newcomers are properly trained
 - Process and procedures are habitual
 - Benefits are clearly articulated to get 'buy in'
 - Standard is accepted by all

Sustain means continual improvement is evident from the regular inspection tours



Sustain Benefits

- **Establish standards for all to achieve**
- **Leads to improve safety**
- **Maintains a “tour” ready status**
- **Promotes pride and respect in the work place**
- **Basis for improvement activities**



In which areas would 5s benefit this Trust?



7 Wastes



Introduction to 7 Wastes (TBC)

- **Waste is the symptom that shows leakage of value**
- **They are many dimension of Waste**
- **Learning to identify 'waste' helps uncover root causes**



Description

- **Waste is the opposite to value and is any activity which consumes resources but adds no value, it can be categorised into the following traditional seven wastes to which we have added the waste of human potential**
 - Over production
 - Motion
 - Transport
 - Waiting
 - Processing
 - Inventory
 - Defects
 - Human potential





The Waste of Over Production

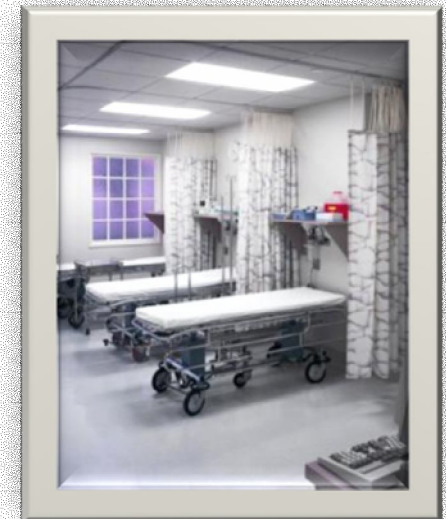
The production of goods in excess of the requirements

- **Examples of over production waste are:**

- Unnecessary follow ups
- Repeated questions and information sharing with patient
- Repeated Diagnostics
- Unneeded consultant to consultant referrals
- Overuse of supplies

- **Effects of over production waste are:**

- Excessive wait times
- Longer end to end journey
- Potential procurement of unnecessary equipment
- Cost and Inventory of excessive supplies
- Frustration to patient/GP

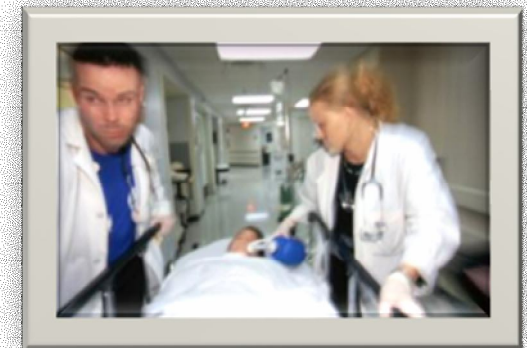




The Waste of Motion

Inefficient ergonomics in the workplace resulting in unnecessary motion

- **Examples of waste of motion are:**
 - Reaching over for equipment/tools
 - Moving to see work
 - Excessive stretching bending
 - Double handling
 - Walking to and from work centres /areas
 - Poorly designed work areas
- **Effects of waste of motion are:**
 - Increased cycle time for operation resulting in overall increase in lead time
 - Looking for parts / tools out of visual sight
 - Worker fatigue





The Waste of Transport

Inefficient transportation of materials, patients, equipment, etc.

- **Examples of waste of motion are:**
 - Inefficient transport routes
 - Delay in waiting for transportation
 - Complex material/patient flow paths within the work place
 - Double handling
 - Ineffective material handling equipment resulting in several journeys
- **Effects of waste of motion are:**
 - Increased waiting/cycle and overall lead time
 - Operator fatigue
 - Opportunity for injury to patient/damage to goods
 - Poor communication across long distances

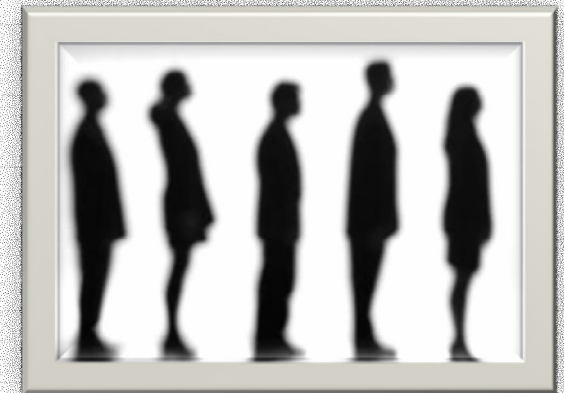




The Waste of Waiting

Ineffective use of time, where patients/materials are not having value added

- **Examples of waste of waiting are:**
 - Waiting for appointment/referral
 - Waiting for material handling equipment to be available
 - Waiting for patients/work
 - Watching machines processing
 - Queuing
 - Waiting for the answer (support staff)
- **Effects of waste of waiting are:**
 - Increased Non value added time
 - Ineffective use of resources
 - Increased work in progress
 - Increased cycle times/leadtimes





The Waste of Inventory

Inventory in excess of the requirement to make the job and in excess of suitable safety stocks

- **Examples of unnecessary inventory are:**
 - Excess stock of supplies
 - Obsolete stock
 - Patients that have started on the pathway but never complete (long tail)
- **Effects of unnecessary inventory are:**
 - Supplies/Materials
 - Increased space
 - Inventory is a liability. Money could be invested more usefully
 - Increase chances of obsolescence
 - Long Tail Patients
 - Frustration and complaints
 - Potential for complications
 - Loss to society
 - Burden of continual processing of patient information





The Waste of Defects

Product manufactured outside the acceptable limits

- **Examples of defects are:**

- Scrap of Materials/Supplies
- Rework on Patient
- Expectation not met/managed
- Returns to Trust
- Customer complaints

- **Effects of defects are:**

- Increased costs
- Increased capacity requirements
- Requirement for extra materials
- Rescheduling of work
- Poor delivery performance
- Fire fighting





Implementation Overview

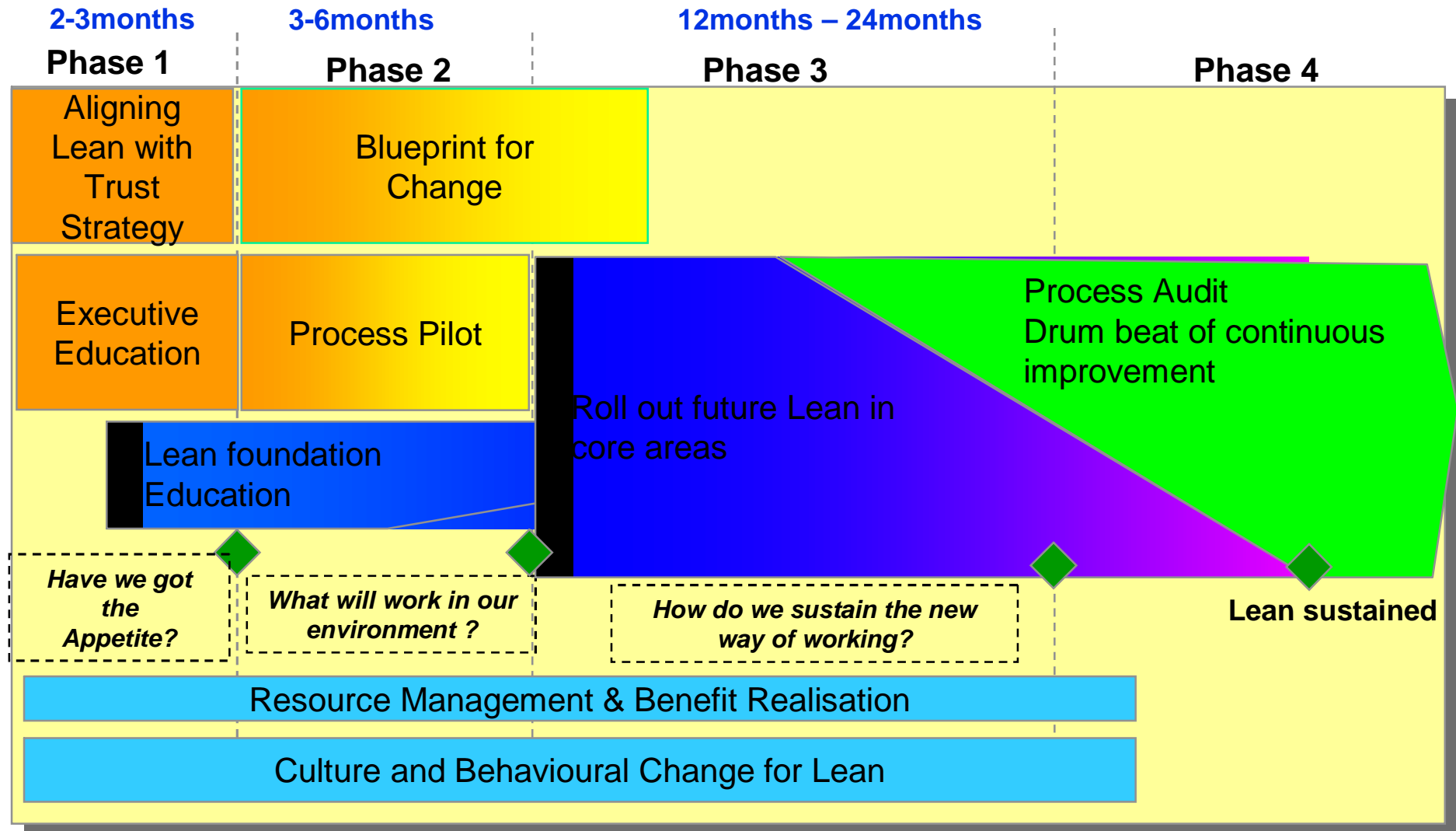


Some 'watch outs' during Implementation

- **Don't Assume that Lean equals using the Lean Tools**
 - Lean Tools are only part of the way to get to perfection – the most important tool is genuine desire to improve
- **Don't Assume that Rapid Improvement Events is all that's required with the help of a change manager**
 - Commitment from the Top for sustainability
 - Provides resources, engagement, change management, stakeholder management
- **Don't assume that all resources should be focused on adding customer(patient) value**
 - Stakeholders work the 'system', resources need to be aligned to deliver a continuing evolving system that meets all stakeholder expectations, otherwise the system will fail.
- **No involvement from staff at the 'coal face' will mean no engagement – and no sustainability – not matter how good the solution is**
 - Respect People and differences
 - Work from where you are



A lean program can take for 18 to 36 months before it is sustained – we need to ask key questions at each phase





Lean is all about people

**“Plan with the people,
Begin with what they have,
Build on what they know,
Of the best leaders,
When the task is accomplished
the people all remark
We have done it ourselves”**

Lao Tzu



A white rectangular card with rounded corners and a thin blue border. The text "kinetik solutions" is written in a bold, blue, sans-serif font, centered on the card.

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