

LEAN PROCESSES IN HEALTHCARE

What is Lean?

Eliminating waste

The foundations of Lean is...
Kaizen (Continuous Improvement)

TAIICHI OHNO

- Toyota Executive
- The Grandfather of Lean
- Created the Toyota Production System to:
 - Identify and eliminate waste
 - Create standard work
 - Reduce defects
 - Mistake-proof

VIRGINIA MASON MEDICAL CENTER

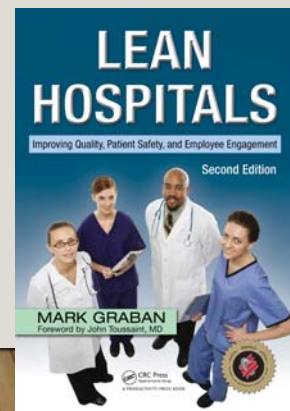
- Late 1990's Virginia Mason was in trouble
 - Losing Money
 - Medical Mistakes
 - Bad Moral
 - Staffing issues
 - Increase medical costs

CHANGE OR DIE

- 2001 Virginia Mason committed to their Lean Journey
- Sent Key Executives to Japan to train a Toyota
- CEO decided rather than just improve efficiency, they were going to:
 - **Transform Health Care**

LEAN IN HEALTH CARE

- Most major medical centers have adopted Lean principle





VALUE

- What is Value?
 - Quality/Cost



WASTE

- Effort the client will not pay for
 - Value added waste
 - Non-value added waste

VALUE ADDED WASTE

- Scrubbing a catheter site
- Reviewing or creating medical records
- Walking dogs
- Overhead expenses

NON-VALUE ADDED WASTE

- Waiting for staff, equipment or paperwork
- Walking time
- Repeat work
- Slow computers

7 FORMS OF WASTE

1. Defects
2. Motion
3. Time
4. Transportation
5. Processes
6. Over production
7. Inventory

DEFECTS

- Mistakes in technique or judgement
 - Medical Mistakes
 - Miscommunication or lack of communication
 - Lack of preparation



MOTION

- Unnecessary movement due to:
 - Equipment or supplies too far away
 - Offices or workstations far from patients or work space
 - Lack of organization (items not clearly labeled)

TIME

- Waiting for
 - People
 - Services
 - Equipment
 - Technology



TRANSPORTATION

- Setting up or breaking down rooms
- Moving:
 - Supplies
 - People
 - Equipment
 - Patients

PROCESSES

- Writing medical notes, then re-typing them
- Client giving history multiple times
- Excess paperwork

OVERPRODUCTION

- Producing reports no one looks at
- Creating boxes of hep flushes
- Excess laundry for bedding

INVENTORY

- Excess supplies
- Spoilage
- Managing/storing inventory
- Large amounts of supplies in multiple areas



5S

- Sort
- Simplify
- Sweep
- Standardize
- Self Discipline

THE NUMBER GAME

- Cross off number 1-49
- Time Allowed, 20 sec

- How far did you get

SIMPLIFY

- Eliminate unnecessary items
- Time Allowed, 20 sec

- How far did you get?

SORT

- Recognize the pattern
- Time Allowed, 20 sec

- How far did you get?

SWEEP

- Find the missing numbers from 1-49
- Follow the pattern you used before
- Time Allowed, 40 sec
- Which numbers were missing?
- 20, 35

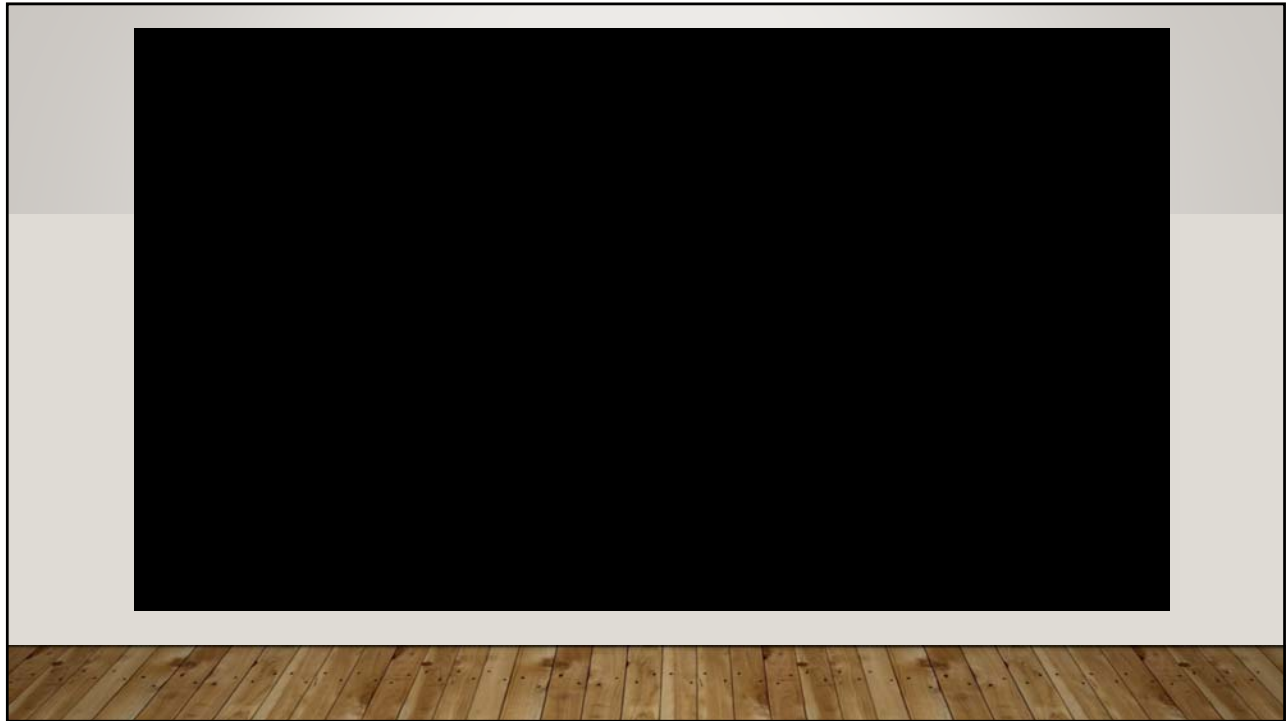
STANDARDIZE

- Every item has it's place
- At a glance visualize missing items

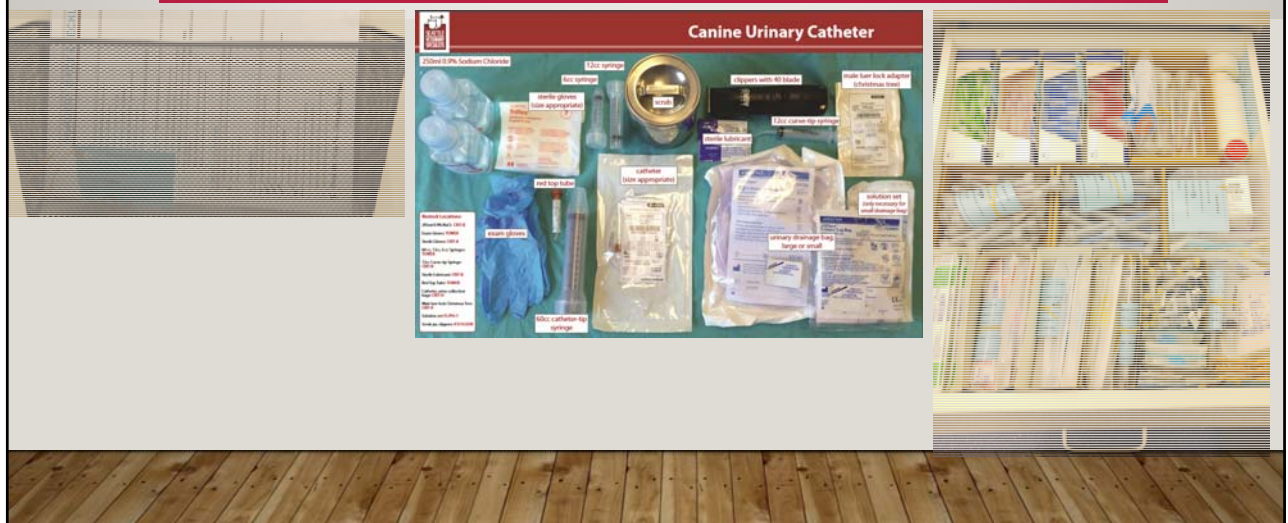
KANBON

- A tool to effectively implement just in time inventory
- A visual cue indicating supplies need to be restock

Restock Card	
<u>Item:</u>	Rectangular Snip
<u>Location:</u>	
<u>Min/Max:</u>	
<u>Location of back-stock:</u>	
<u>K-Code:</u>	
Place card in Prep Area Basket to have re-stocked	

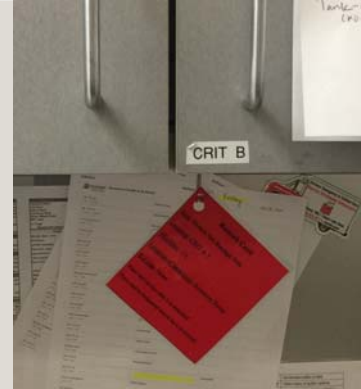


SVS'S LEAN PROJECTS



KANBAN

- Restock system
- Inventory control



MISTAKE PROOFING & STANDARD OPERATIONS

- SOP**
- 1 Clip hair forming a 2" hair free zone from prep area
 - 2 Perform a surgical prep to outer prepice with roborax scrub, rinse with sterile saline wearing exam gloves
 - 3 Flush inside prepice with dilute Chlorhexidine solution 0.05% (1500ml Saline bottle, add 4.25ml of Chlorhexidine 2% solution), using curved tip syringe followed by saline
 - 4 Measure the catheter from the tip of the penis to the urinary bladder
 - 5 Open sterile gloves, keeping package sterile for other sterile items
 - 6 Using sterile technique, deep appropriate urinary catheter, tube and syringe onto sterile field
 - 7 Have assistant don with exam gloves and extrude penis then prep with a dampened piece of gauze with dilute Chlorhexidine 0.05%
 - 8 Don with sterile gloves and then using sterile syringe and sterile saline, inflate catheter to check for leaks and remove syringe from port, then re-wash syringe and deflate cuff
 - 9 Label end of catheter and place urinary catheter to desired measurement
 - 10 Once placed, pull back with catheter tip syringe to get urine sample for urine provided if needed
 - 11 Inflate urinary catheter cuff with appropriate amount of saline (see catheter for amount required)
 - 12 Attach urine bag to catheter and make sure all clamps are open and that urine is flowing
 - 13 Using rubber wet wrap or a mesh tablet, secure excess urinary catheter to patient, then secure bag to kennel
 - 14 Consider if patient needs an I-coller or some other barrier device to prevent removal of urinary catheter
- Disclaimer: See SOP book 1 procedures for detailed SOP

Preparation

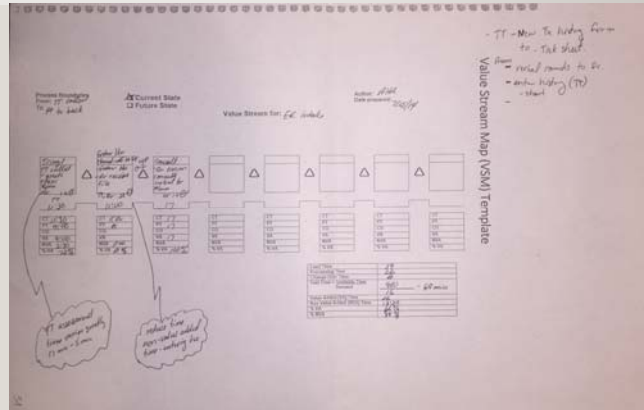
- 1 Collect all items needed and set up the tray
- 2 If patient will tolerate, shave hair around prepice 2" diameter - see picture
- 3 Don with exam gloves and flush the prepice > 3 times or until debris free with dilute Chlorhexidine 0.05% (0.25ml of Chlorhexidine 2% solution into a 200ml saline bottle, which can be drawn from the pre-made bottle designated for this procedure)
- 4 When UTI is ready to proceed, gently restrain patient in lateral recumbency and extrude penis
- 5 Gently wipe penis with a damp piece of gauze that has dilute Chlorhexidine 0.05% on it prior to the UTI proceeding with the urinary catheter placement
- 6 Assist as directed

Canine Urinary Catheter



VALUE STREAM MAPPING

- We realized were we spending 11-15 additional minutes per triage retyping medical notes
- We added computers in the exam rooms
- Improved check-in questionnaires
- Had referral coordinators room patients rather than LVTs



- Virginia Mason Medical Center decide the only way to transform health care was to put the patient first.
- This was a change from doctor centric.

QUESTIONS?

