

Mastering Kanban to Reap Multiple Benefits in Inventory Management and Lab Productivity

Objectives

- Know the definition of kanban
- Identify differences between kanban and the current systems used in the laboratory
- Understand how a kanban system can be applied to the laboratory

Kanban in 50 Minutes?



"Let's take this one step at a time. First, somebody is going to have to catch the fish."

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Kanban

- Signal for replenishment or movement
- Japanese term for signboard or billboard
- Minimization of non value added replenishment activity
- Incorporates first-in first-out (FIFO)
- Results in an efficient process with the appearance of no excess supply
- Goal is to keep work flowing to consistently meet customer demand

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What Does Kanban Look Like?

- Kanban signals
 - Cards
 - Empty spaces on a shelf or bench
 - Empty bins
 - Electronic signals



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Kanban and Lean

- Kanban is an important tool in the lean package
 - Kanban does not make you “lean”
- Lean goal is to keep material flowing to serve customers on time every time
 - Effective kanban means no workflow interruptions
- Lean goal is delivering to the customer while still creating a profit for the organization
 - Effective kanban controls supply costs

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Current State

- Standing orders
- High levels of safety stock
- Unknown inventory levels
- All departments ordering general supplies
- Stock outs
- Disorganized stock rooms
- Disorganized bench stock
- Confusion and fear



Sound familiar?

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How Does This Affect the Lab?

- Excess inventory means higher organizational cost
 - Storage space
 - Labor for storage and retrieval
 - Excess inventory on hand / \$\$ sitting on a shelf
 - Expired supply
- Stock outs mean disappointed customers
 - Turn around times not met
 - Cost for emergency shipping
 - Cost for outsourced testing

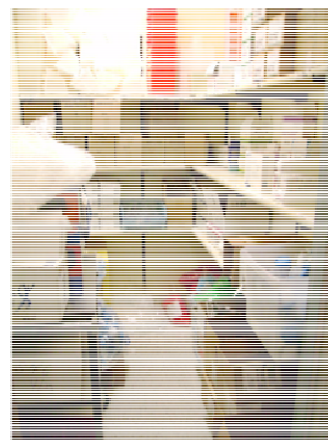
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Applications

- Phlebotomist in patient room runs short on tubes and cannot complete collection.
- An expired box of phlebotomy tubes is found in the back of a cupboard.
- Expired reagent is found in the back of a refrigerator.
- Technologist goes to stock room to get a box of pipettes in the middle of a run.
- Staff can't find an item in the stockroom so the supervisor submits an order directly to materials management.

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Have You Seen This?



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Kanban in the Laboratory

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Implementing a Kanban System

- Choose pilot area
- Identify supplies required for each area/bench
 - Consumables
 - Reagents
 - Quality control and calibrator materials
- Which of those items would work well with a kanban system?
 - Shelf life and storage requirements
 - Consistent usage
 - Consistent vendor lead times

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Collect Data

- Volume/usage of each item
- Primary storage location(s)
 - Where will the material handler go to replenish the item?
 - Hospital warehouse
 - Laboratory stock room
 - Department storage area
- Vendor lead time
- Critical inventory level

Are these areas organized?

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Determining Inventory Levels

- Based on usage + safety stock
 - Be careful of seasonality
- Vendor lead times
 - Are they consistent?
- Balance ordering costs against inventory carrying costs
 - Ordering costs
 - Labor: Place order, receive and store supplies
 - Shipping fees

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Inventory Cost

- Costs associated with holding inventory
 - Space
 - Multiple storage locations?
 - Cash on hand decreased
 - Lost interest
 - Labor: Storing, counting, moving, etc.
 - Risk of product damage
 - Potential product expiration
 - Potential product obsolescence

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Kanban Replenishment

- Constant time replenishment
 - Item(s) replenished at the same time interval
 - One time or several times per day
- Constant quantity
 - Replenished when bin empties or replenish line is visible.
 - Container is filled with same quantity or to same point every time.

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Common Lab Kanban Systems

- Two-bin / container
 - Operator uses supplies from top bin
 - Empty top bin is moved to designated area
 - Empty bin triggers replenishment
 - Full bin moved into bottom position before remaining bin is empty



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Common Lab Kanban Systems

- Re-order point
 - Supply level reaches visual mark or kanban card
 - Designated quantity is replenished or ordered



Photo source: Leanblog.org: *Hospital Laboratory Reorder Point Kanban Example* HartePro Consulting, copyright 2012

Identify and Plan

- Two bin / container
 - Replenishment quantities
 - Containers for bench and storage areas
 - Original packaging
 - Bins
 - Other
- Re-order point
 - Replenishment quantity
 - Color coding and labeling
- Kanban cards
 - Where will they be used
 - Design
- Replenishment area and timing
- Reorder area

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Is the Quantity Right?

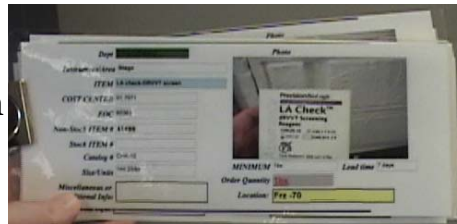
- Calculate based on usage
- Add safety stock
- Put it into use and monitor
- Expect to make adjustments

Continuous Improvement

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Kanban Cards

- Minimum information
 - Product name and order/item #
 - Supplier name and number
 - Reorder quantity
 - Photo of item
 - Location in store room
 - Location at bench



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Kanban Cards

- Visual re-order point in stock room or warehouse



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Kanban Cards Caution

- Communicate
 - Before, during, on-going
- Train
 - What, why, how, why (yes, again)
 - WIIFM?
- Audit
- Assign individuals to oversee

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Re-Order Process

- Cards placed in designated re-order trigger area
- Supervisor/ordering personnel check “regularly” for re-order requirements

Disciplined? Yes

Expensive or Fancy?

No



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Kanban Results

- True inventory control at all levels
- Decreased or controlled inventory cost
- Increased staff comfort with supply levels
- Customer demands met
- Implementation of one key lean tool



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Questions

Thank you!

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