

UVA Health - Supply Change Comparison Study Kanban vs Non Kanban: Analysis of 6th Floor vs. 4th Floor Distribution of Supply Materials



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SUMMARY: In 2016 the Health System spent over 170M in Medical Supplies excluding Organ and Pharmaceutical Expenses. Typically, medical supplies attribute to the second largest expense in a Health System. UVA over the last several months has been implementing a Kanban, Two Bin System on it's inpatient floors. An analysis was required to determine the benefit of utilizing this Lean System of restocking supplies to both Clean Rooms and Alcoves of the respective floors over that of the existing Par Counting system through a Pyxis System.

Current State

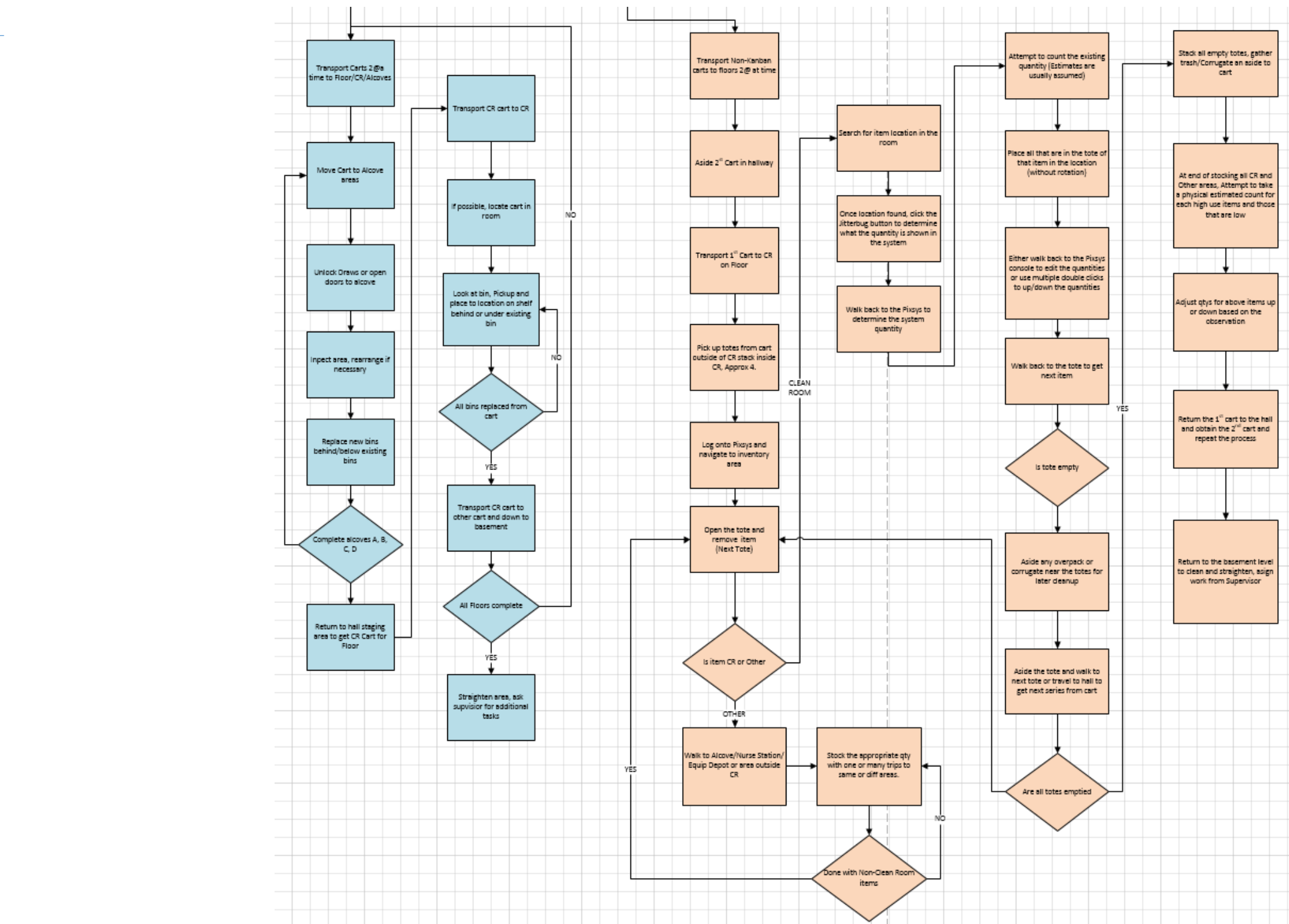


1 4th Floor
The 4th Floor was a prime candidate for this study since it was still operating under the earlier stocking method of reduction of supplies and systematically signaling replenishment after reaching a minimal quantities. Issues with this system including, frequent stock outs, lack of stock rotation, inaccurate inventory via lack of discipline in activating the "Jitterbug" and excessive time to fulfill supplies.



2 6th Floor
This area (6th Floor) along with several other areas is undergoing a changeover to a Kanban, two bin pull system for low cost medical supplies. As supplies are depleted from one bin, the second bin is pulled forward. The empty bin is a visual trigger to replenish those items. Each bin has a designated amount which is filled in the supply stock room in the basement of the Health Facility. Scanning of bins triggers a systematic reorder from the vendors on a daily basis.

Analysis & Measurement

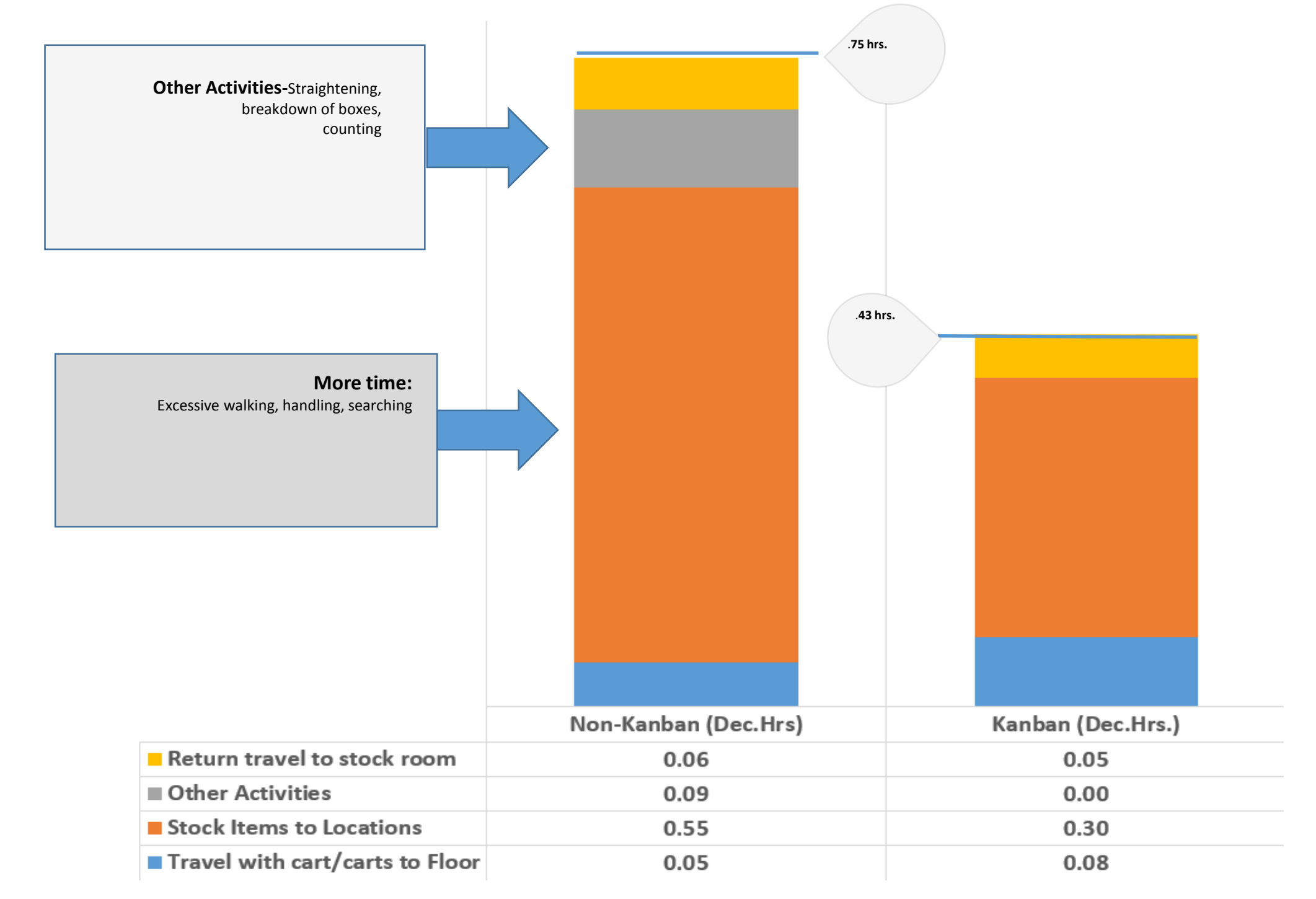


3 A process map was created for both the 4th floor distribution (shown in Orange) of supplies as well as that of the 6th floor (shown in Blue). Furthermore, times were captured when supplies were unloaded at the dock, sorted, and transported to the floors. Scanning times were also annotated at the lower floors As one can see, there were twice as many process steps in the 4th floor distribution.

Start Time	End Time	Total Time (Mn)	Dec. Hr	Skts/Bins	SKUs/Bin/Hr	Location
16:30:00	18:15:00	1:45:00	0.08	401		4/0/2017
16:50:00	17:00:00	1:10:00	0.08	15	180	
17:00:00	17:03:00	3:00	0.05			
17:03:00	17:03:00	3:00	0.05			
One Cart, 4 Bins were not used, B/D						
17:27:00	17:34:00	7:00	0.12			
17:34:00	18:06:00	32:00	0.52	36	240	
18:07:00	18:10:00	3:00	0.05			
18:10:00	18:10:00	3:00	0.05			
Two Carts						
18:11:00	18:15:00	4:00	0.07			
18:15:00	18:12:00	3:00	0.05	41	154	
18:12:00	18:10:00	2:00	0.03			
18:10:00	18:10:00	3:00	0.05			
Two Carts						
18:13:00	18:10:00	3:00	0.05			
18:10:00	18:15:00	5:00	0.08			
18:15:00	18:12:00	3:00	0.05	41	154	
18:12:00	18:10:00	2:00	0.03			
18:10:00	18:10:00	3:00	0.05			
Two Carts						
18:18:00	18:20:00	2:00	0.03			
18:20:00	18:38:00	18:00	0.30			
18:38:00	18:41:00	3:00	0.05			
Two Carts						
18:38:00	18:41:00	3:00	0.05			
Average stock of Bins per Hour: 156 (Does not include travel to and from areas)						

4 Since most of the work in replenishment occurred from 3:00PM to 11:00PM, observations of this work was done on second shift, The Kanban totes were fulfilled starting at 3:00 PM after the product was unloaded. The non-Kanban totes/boxes were subsequently unloaded around 5:00 PM to 7:00PM when a second truck arrived. Both were staged and taken to floor when enough product was present. Time to fulfill, transport, and stock the respective areas was recorded

Findings and Recommendations



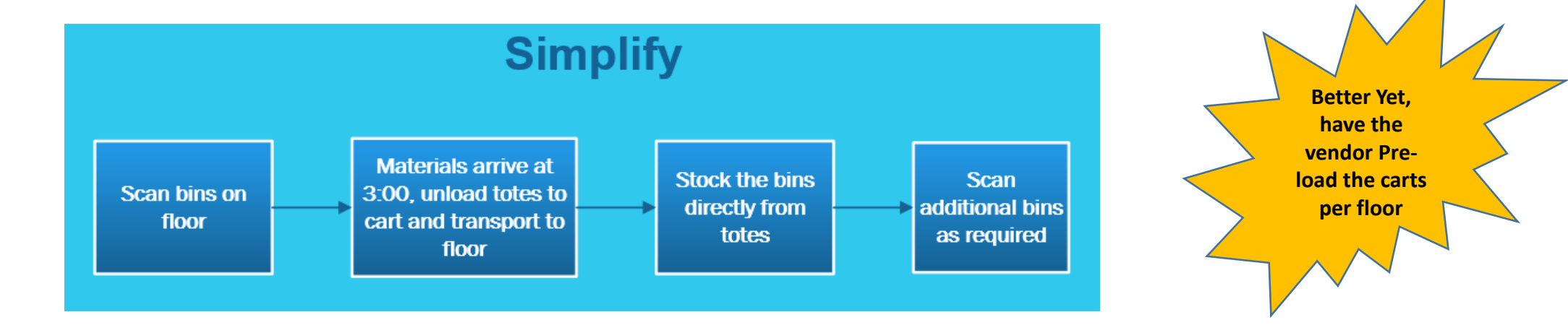
5 After the data was gathered and analyzed, it was clear that the 4th floor process took twice as long as the 6th floor process. On the 6th floor there was less confusion in the process as well as an increased ability to rotate stock within both the alcoves and material storage areas. For both studies, the transport time was about the same, but with the 4th floor, more time was required to discard corrugate, counting and searching for stock locations.

Look at improvements that could be done with NEW Kanban Areas:

- Reduce travel distances
- Minimize touching of product and transport equipment
- Put product as close to patient as possible
- Utilize technology wherever possible (Scanning on floors)
- Document processes and procedures / work instructions
- 5S the stock room / remove unnecessary items, add signage

Lessons Learned:

- Supply Chain wasn't ready and people didn't Believe in system initially
- Too long for roll-outs Units believe that Kanban was optional
- Process was made too complex
- The more involved the unit team members the more successful the implementation and on-going maintenance
- Not all areas had enough space or right Configuration of space to implement
- Lack of adherence to Standard Work



6 Recommendations:
Further simplify the process by scanning empty bins on the floors
Re-education of new staff as to the benefits of Kanban
Re-evaluate needed quantities of product on floors
Have the vendor pre-package cases per floor distribution
Create a Central UVA Supply other than basement to maintain high used bulk supplies
Have the Central Supply do the pick, pack and ship to the respective floors
5 S multiple areas where supplies are stored
Use existing Inventory Systems currently available at UVA HS