Analysis of Sterilization Container vs. Sterile Wrappers In a Sterile Processing Department

Purpose: An analysis of the time to complete packaging for instrument sets in both containers and wrappers. Review of costs and productivity. Analysis of the time needed in Decon area to disassemble container pieces and render container ready for the washers.

Method: Head to head trials timing the completion of the same instrument set in a container and a wrapper. Both instrument sets are complete and ready for packaging. Container packaging involves placing set in container, adding filters to the lid, locking lid to base, inserting two arrows to lock set, adding data card, adding bar code label. Wrapper packaging involves placing wrapper on table, placing two towels under set, wrapping set, tapping set, and placing bar code stickers x2 on set. Note: Process did not include container vendors instructions for use requiring inspection of gaskets and latches.

Hypothesis: That it takes less time to package an instrument set in wrappers than in a container. That containers adds unnecessary non value added time to the processing area. That unnecessary time is spent in the Decon area breaking down containers to rewash them for future use. That there is added costs/labor to container use that has been overlooked.

Data collection: 1/1/12 to 7/10/12.

Analysis performed by: Randell Sprouse. LSSBB, Manager Sterile Processing

Analysis of Sterilization Containers vs. Sterile Wrappers in Sterile Processing Department

Processing Area:

Mean for Containers - **68.286 sec.** * See attached Data

Mean for Wrappers - **54.386 sec**.

Difference in Mean - **14 sec.**

Containers per day x Difference in Mean = Savings in seconds.

Containers Process per Pay	Savings in Seconds per Day	Savings in Minutes per Day	Savings in Minutes per Month
300	4200 sec.	70 min.	1400 min.
600	8400 sec.	140 min.	2800 min.
900	12,600 sec.	210 min.	4200 min.

Processing area labor savings from switching from containers to wrappers:

Labor Cost: Mid range SPD tech, wage 15.59 per hour. 26 cents per minute

Labor cost per minute x Minutes saved = labor savings per day.

Containers Process per Pay	Savings in Minutes per Day	Labor Cost Savings per Day	Labor Cost Savings per Month
300	70 min.	$ 18.20	$ 364.00
600	140 min.	$ 36.40	$ 728.00
900	210 min.	$ 54.60	$ 1,092.00

Decontamation Area:

Method for breakdown of one Sterilization container:
Receive container, Remove data card, Remove arrows x 2, Remove filters x 2, Remove bar code label, Rack container for cart wash.

Mean time to complete breakdown of container: **30 sec.**

Decontamination area labor savings for switching from containers to wrappers:

Mean time container breakdown x Number of containers = Savings in seconds.

Containers Process per Pay	Savings in Seconds per Day	Savings in Minutes per Day	Savings per Month
300	9000 sec.	150 min.	3000 min.
600	18,000 sec.	300 min.	6000 min.
900	27,000 sec.	450 min.	9000 min.

Container disposables costs + Labor costs = Total cost per container. $1.33 + .26 = $1.59

Savings in Minutes per Day x Total cost per container = Total cost savings

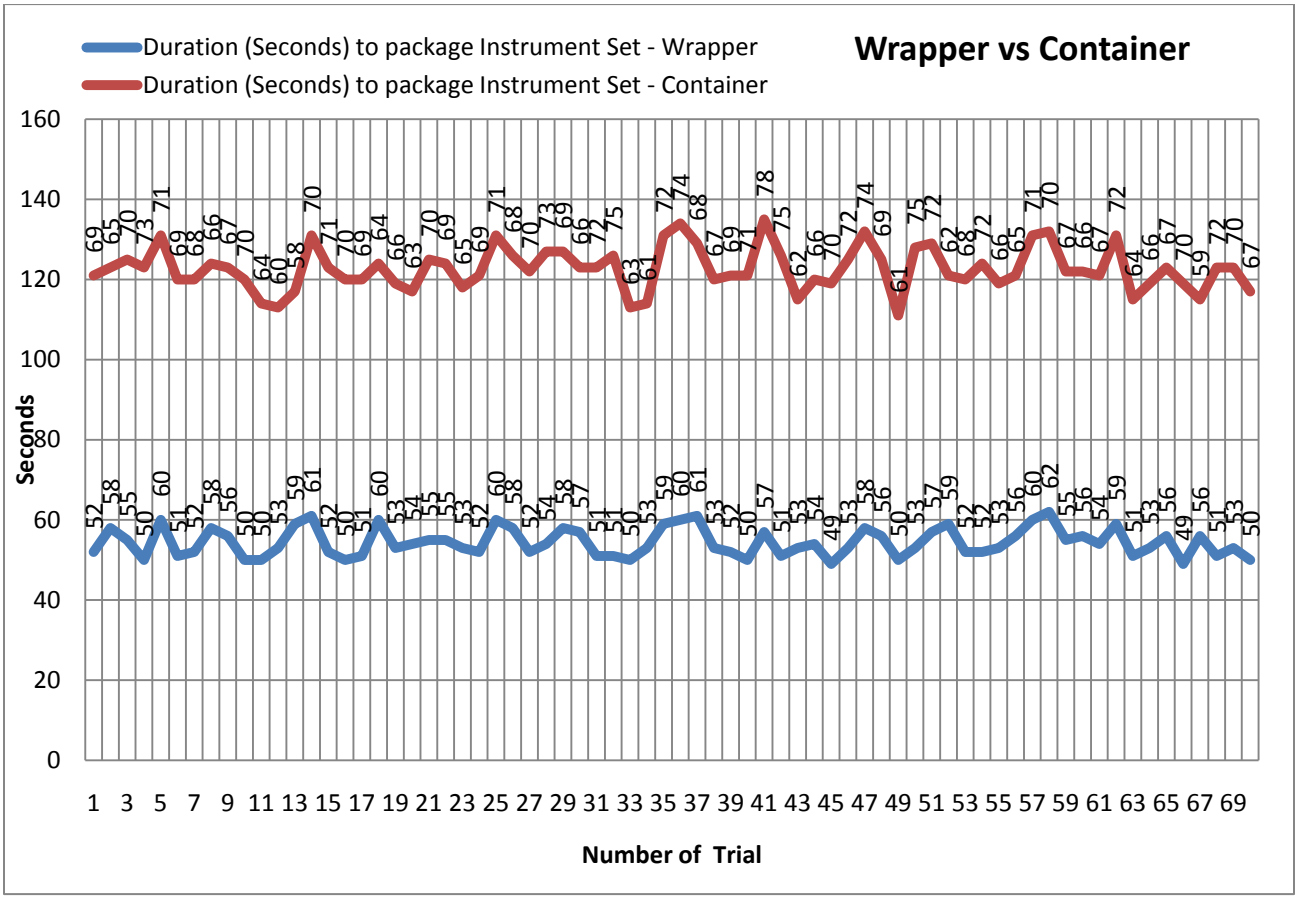
Containers Process per Pay	Savings in Minutes per Day	Cost savings per day	Savings per Month
300	150 min.	$238.50	$4,770.00
600	300 min.	$477.00	$9,540.00
900	450 min.	$715.50	$14,310.00

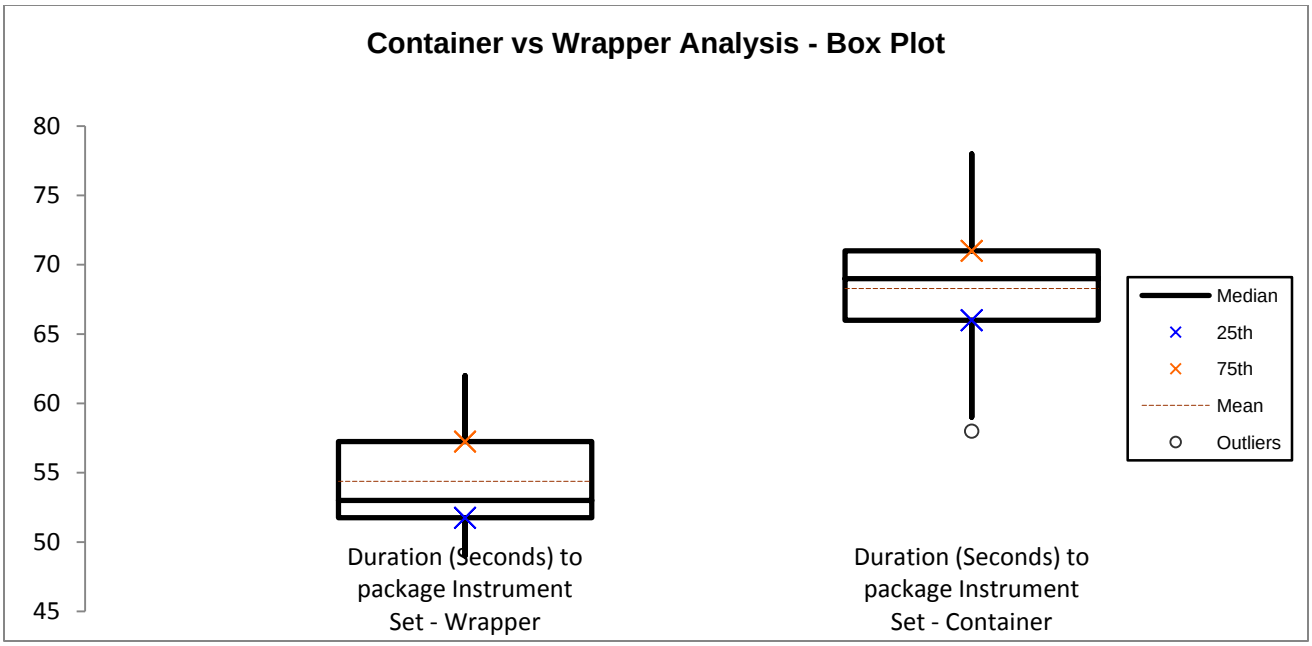
Combined savings for eliminating containers in processing and decontamination:

Processing labor savings + decontamination savings = Total savings

Containers Process per Pay	Labor Cost Savings per Month Processing	Savings per Month Decon	Total Monthly Savings	Total Yearly Savings *
300	$ 364.00	$4,770.00	$ 5,134.00	$61,608.00
600	$ 728.00	$9,540.00	$ 10,268.00	$123,216.00
900	$ 1,092.00	$14,310.00	$ 15,402.00	$184,824.00

* Does not include yearly container repair costs

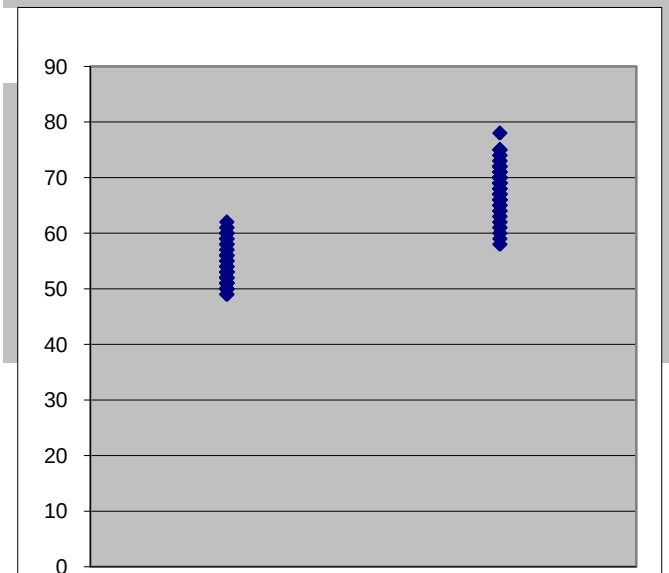

Wrapper vs Container
Duration (Seconds) to package Instrument Set - Wrapper
Duration (Seconds) to package Instrument Set - Container
Seconds
Number of Trial



t Test Results, Equal Variance			
p value	0.05	Avg 1	54.38571
t statistic	21.7803	Avg 2	68.28571
Deg Free	138		
t critical	1.655972		

You CAN say that the mean of Data Set 2 is different from the mean in Data Set 1.

Description Data Set 1 Wrappers - Data Set 2 Containers



Conclusions: The analysis of container vs. wrapper usage shows wrapping sets is the faster process with a difference between the means of 14 **seconds. By eliminating container usage in SPD decon and processing areas it can be shown that there is substantial savings in labor and supply costs.

300 containers per day SPD - $61,608*

600 containers per day SPD - $123,216*

900 containers per day SPD - $184,824*

* Does not include yearly container repair costs

**Does not include required inspection of container gasket

The effects on an SPD's labor time and costs increase with additional container usage "The container effect". See page two data. These factors should be considered when adding containers to a moderate/high volume sterile processing department that is already having issues with throughput.