



Reduce Operating Theatre (OT) Nurses Time Spent in Assembling and Packing Consignment Sets in Central Sterile Supply Department (CSSD)



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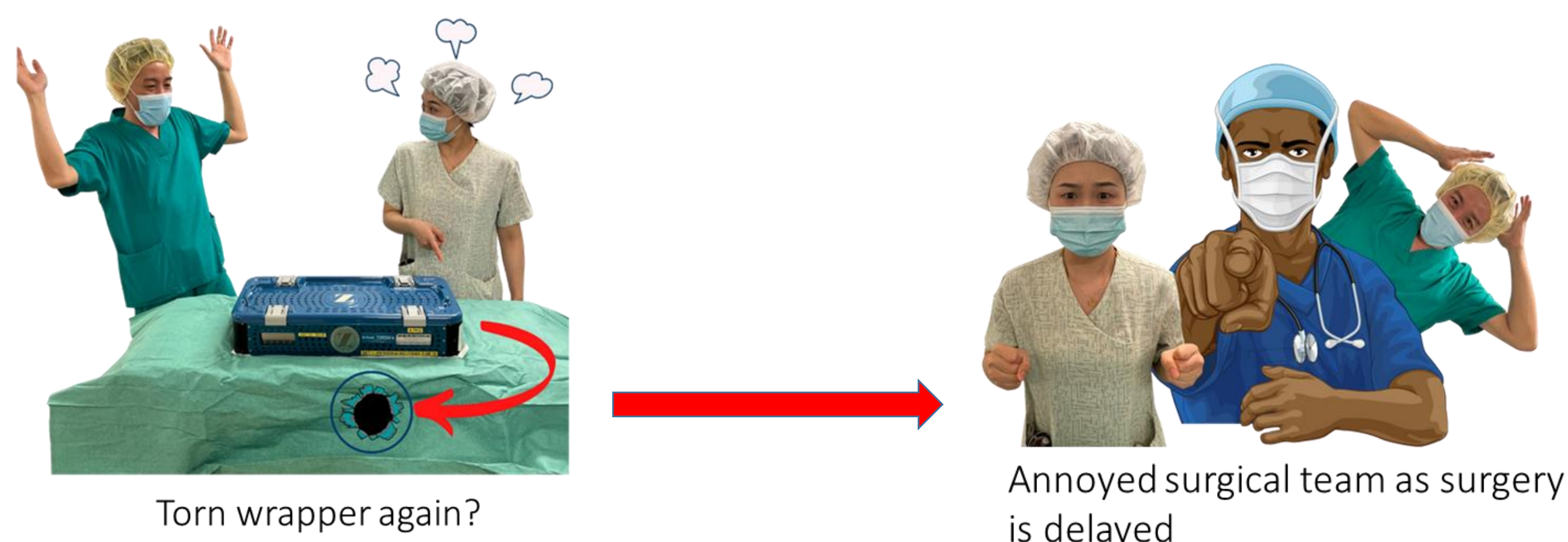
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Background

Consignment instrument sets from vendors are checked and packed by Orthopaedic nurses on the eve of operation day. These instrument sets are wrapped in double layers, both inner & outer, with high grade paper.

Disadvantages of the disposable wrapper:

- Less-durable packaging material and prone to tears with consistent handling
- Higher cost due to additional corner guards and tray liners used as reinforcement of the packaging
- Time-consuming to wrap a set
- More time spent in rewrapping and processing sets with damaged wrappers



Identified issues from the use of disposable wrappers:

- Delayed in surgery
- Increased staff stress by multiple checks of packaging integrity
- Potential wound infection if not identified
- Increased hospital stay and reduced patient satisfaction
- Wavier in hospital charges due to hospital-acquired infection

Aims

- ❖ Reduce OT nurses' time assembling and packing the consignment sets
- ❖ Reduce preparation time & labor cost
- ❖ Eliminate incidences of delay in surgery or cancellation due to breaks in the integrity of the wrapper of the sterilized instrument sets
- ❖ Reduce expenditures on wrapping materials, water, electricity, and time spent on non-productive work processes
- ❖ Increase overall service excellence and enhance patient safety

Changes (Methods) - Replacing medical-grade wrappers with rigid container systems

1. Time motion studies were done to compare the time spent using different packing methods (Figure 1 & 2).

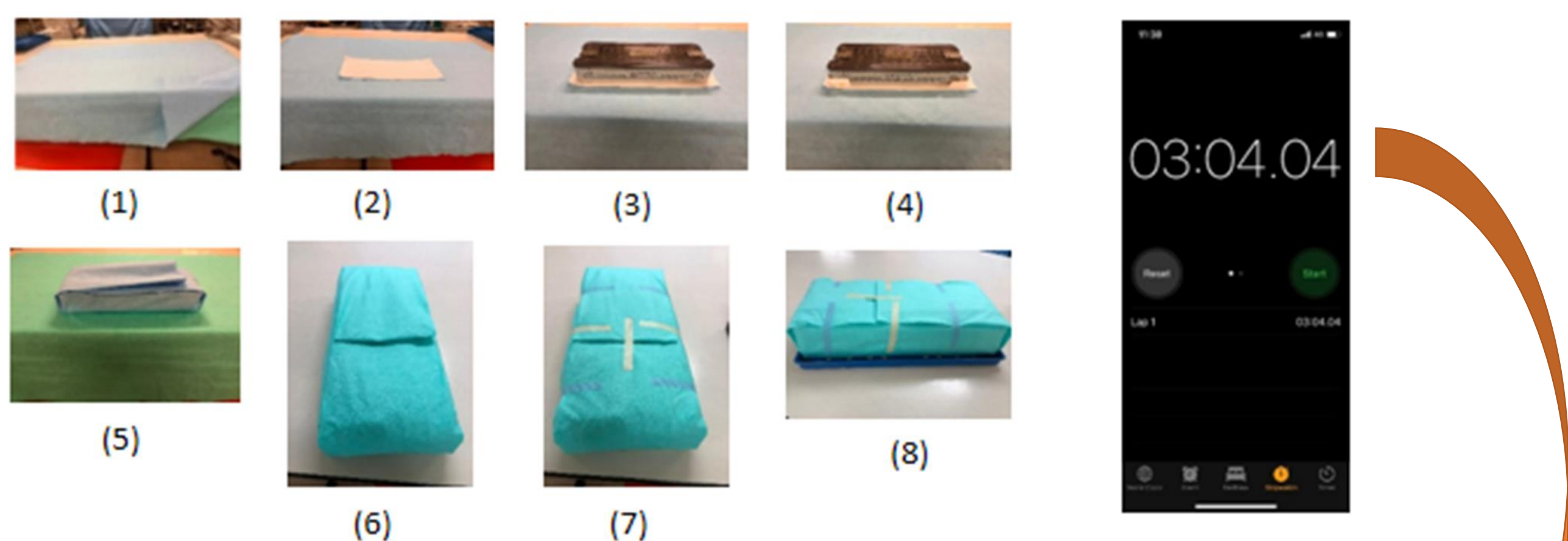


Figure 1. Sequence of packing with wrapper and time spent



Figure 2. Sequence of packing with rigid container and time spent

Changes (Methods) cont.

2. Cost analysis was done to analyze the cost and benefit of the proposed change (Figure 3 & 4).

| | Price/pc (SGD) | Quantity | Amount |
|-------------------------------|----------------|----------|---------------|
| Wrapper(180*150cm) | 1.7 | 2 | 3.40 |
| Absorbent Tray Linear | 0.116 | 2 | 0.232 |
| Corner Guard | 0.5 | 4 | 2.00 |
| External Tape Indicator (7cm) | 0.0081 | 7 | 0.0567 |
| Total | | | 5.6887 |
| Total(Approximate) | | | 5.69 |

Figure 3. Cost of packaging using high grade paper wrapper

Paper wrapper
S\$5.69

| | Price/pc (SGD) | Quantity | Amount |
|-------------------------------|----------------|----------|---------------|
| Filter Paper | 0.13 | 4 | 0.52 |
| Container Label | 0.2 | 1 | 0.20 |
| Tamper Device | 0.17 | 2 | 0.34 |
| External Tape Indicator (4cm) | 0.0046 | 1 | 0.0046 |
| Total | | | 1.0646 |
| Total(Approximate) | | | 1.07 |

Figure 4. Cost of packaging using reusable rigid container system

Rigid container
S\$1.07



Results/Outcomes

- ✓ Time saving: **56%** of time reduction in wrapping/assembling per set
- ✓ Cost saving: **68%** decrease in recurring expenses due to reduced material and utility costs (Figure 5)

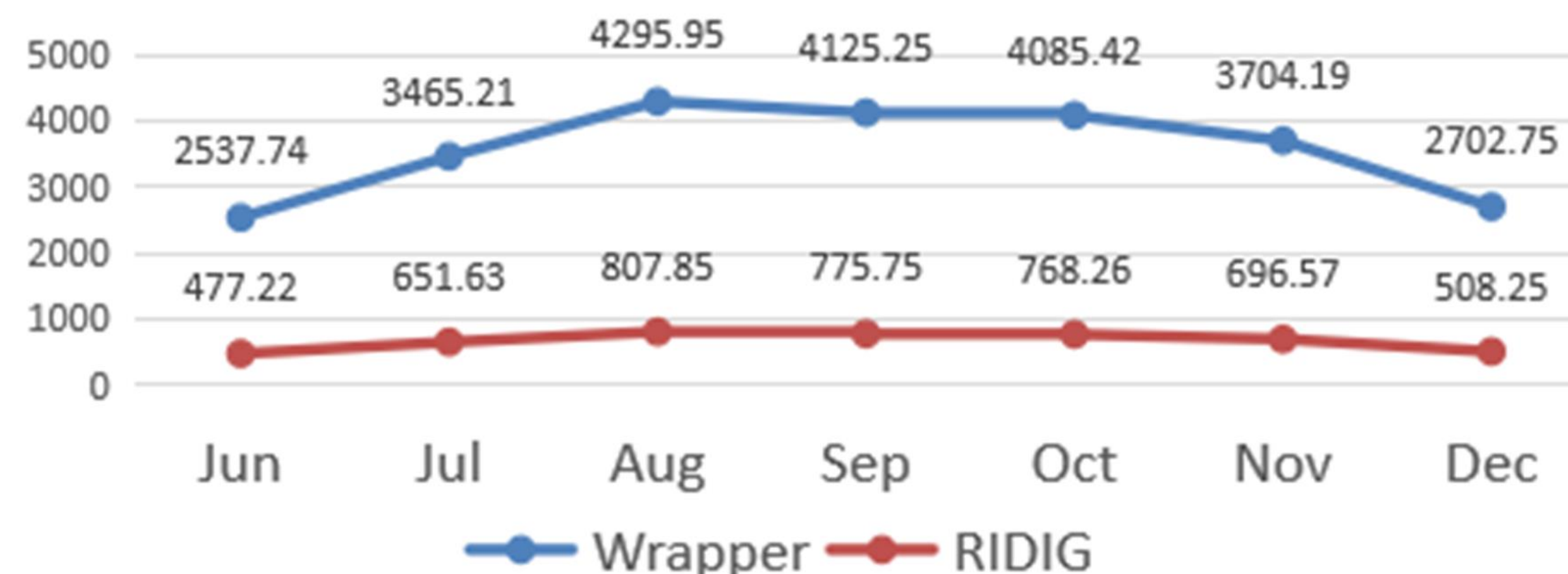


Figure 5. Monthly Cost Overview Comparison during Jun-Dec 2019

- ✓ Increased staff satisfaction: **94% positive feedback** on using rigid containers for consignment sets (Figure 6).

| | Q1 (Save packing time) | Q2 (easy to use) | Q3 (eliminate the incidences) | Q4 (environment friendly) |
|----------|------------------------|------------------|-------------------------------|---------------------------|
| Positive | 39 | 37 | 39 | 38 |
| Negative | 0 | 2 | 0 | 1 |

Figure 6. Overview of Participant Feedback

Balance measures

The challenges encountered by ground staff :

The sets are heavier because of the added weight of the container. We will explore using robotic arms to help lift and carry the sets.

Conclusion

Using reusable rigid container systems for consignment sets offers significant time and cost savings.

It simplifies and reduces the need for checking and re-processing consignment sets, enhances patient safety, reduces surgical delays, optimizes resource usage, and improves staff satisfaction.

