

2019 Standardization and Optimization of Resources and Time (In-Unit) Team

The 2019 Standardization and Optimization of Resources and Time (SORT) was organized by Dr. Mikaela Olsen, who recognized that medical supply use as well as efficiency in the oncology department at that time could be improved. She, therefore, invited a group of student consultants from Whiting School's Master of Science in Engineering Management (MSEM) program to evaluate the situation and to offer recommendations for reducing waste and saving time.

Through eight weeks of in-person investigation, data gathering, and analysis, the SORT team identified two main pain points concerning supply management within the unit. The first problem involved waste generated by the isolation process itself. In that isolation patients risk contaminating supplies, all supplies on the supply cart in an isolation room must be discarded, even if most of the items in the cart were neither touched nor opened. On average, the wasted supplies in each cart are worth approximately \$800. The second problem that the SORT team discovered involved discrepancies in the Pyxis system, which is a supply management system that keeps track of supply usage. Pyxis often reports a quantity of stock that is far different from what is actually available in the unit, leading to inefficiency in ordering as well extra costs.

The consultants proposed the following recommendations.

- In the short-term for the problem of waste, organize all required supplies on a cart outside the isolation room. Doing so will reduce the unnecessary waste of supplies created by previous SOPs.
- As a longer-term solution, partner with Bioquell, a company that decontaminates medical facilities, thereby reducing waste. The unit subsequently purchases its own equipment from Bioquell, resulting in a 100% monthly savings of approximately \$15,000 per unit. The initial cost will pay for itself within two to three months depending on the price of acquisition and implementation.
- For the second problem with the Pyxis system, designate specific staff members to oversee the system and communicate with Central Supply to manage the stock. By creating this new position to better manage the Pyxis system, the estimated annual savings is more than \$929,000 combined in the three departments with the highest Pyxis discrepancies.

The total annual savings estimated by the SORT student consultants was over \$1 million when executing the two recommendations in the three units with the most waste.

PERIOD	TOTAL
1 MONTH	\$ 31,557
1 YEAR	\$ 378,684
TOP 3 UNITS	\$ 1,136,052

Figure 1. Total Savings