Assessing the Value of Switching Dialysis Center to Central Delivery System with 220L Drum: A Kingdom of Saudi Arabia (KSA) Case Study

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I. Fekry[1], F. Lima[2], E. Busink[3], J. Petrovic[3], C. Hornig[3]

[1]Fresenius Medical Care Kingdom of Saudi Arabia, Riyadh, Saudi Arabia, [2]Fresenius Medical Care Deutschland GmbH, Bad Homburg, Hesse Land, Germany, [3]Fresenius Medical Care Deutschland GmbH, Bad Homburg, Germany

INTRODUCTION

In a Saudi Arabian dialysis center with more than 36,900 dialysis treatments per year, acid concentrate is delivered in single-use 5 L canisters.
Evaluating the transition to a Central Delivery System (CDS) for dialysis centers in Saudi Arabia is critical, as the use of the Single Use Acid Concentrate Product (SUP) is associated with several challenges:

- Organizational (high workload, numerous handling steps for the nurse and high warehouse storage space)
- Environmental (high waste production and carbon footprint)
- Economic (high waste disposal costs, elevated warehouse storage costs and inefficient use of the nurse's time)

OBJECTIVE

This study investigated the value of switching from SUP to CDS with 220L drum in the Kingdom of Saudi Arabia (KSA) by exploring:

1. How the CDS system could address unmet needs;
2. The associated value for the dialysis center

METHOD

A Total Cost of Ownership (TCO) together with an organizational and environmental impact analysis was performed. Potential savings were analyzed when switching from SUP to CDS (organizational, environmental and economic impact).

RESULTS

Figure 1

Before Dialysis

Nurse doesn't have to move high numbers of SUP to the warehouse. The drum will not be stored in the warehouse (1)
Nurse doesn't have to choose the formulation (2)
Nurse doesn't have to move the SUP to the dialysis room (3)
Nurse doesn't have to connect the SUP to the dialysis machine (4)

During Dialysis

No need of single use product replacement (5)

After Dialysis

Nurse doesn't have to disconnect the SUP (6)
Nurse doesn't have to take care of the residual acid (7)
Nurse doesn't have to dispose off the empty canister (8)

Figure 2

The **organizational impact** analysis showed that 68% of nursing treatment steps and 21% of warehouse storage space were saved.

The **environmental impact** analysis showed that 87% weight of consumables, 87% CO_2 emissions and 95% acid waste dumping from canisters were saved.

These savings led to a **positive TCO with 95% waste disposal costs and 95% nursing time saved**.

In consequence, the nurse might use the time saved for improved patient care and for other activities at the dialysis center.

Figure 1: IMPROVEMENT IN NURSE WORKFLOW STEPS WITH CDS WITH 220 L DRUM COMPARED TO SUP

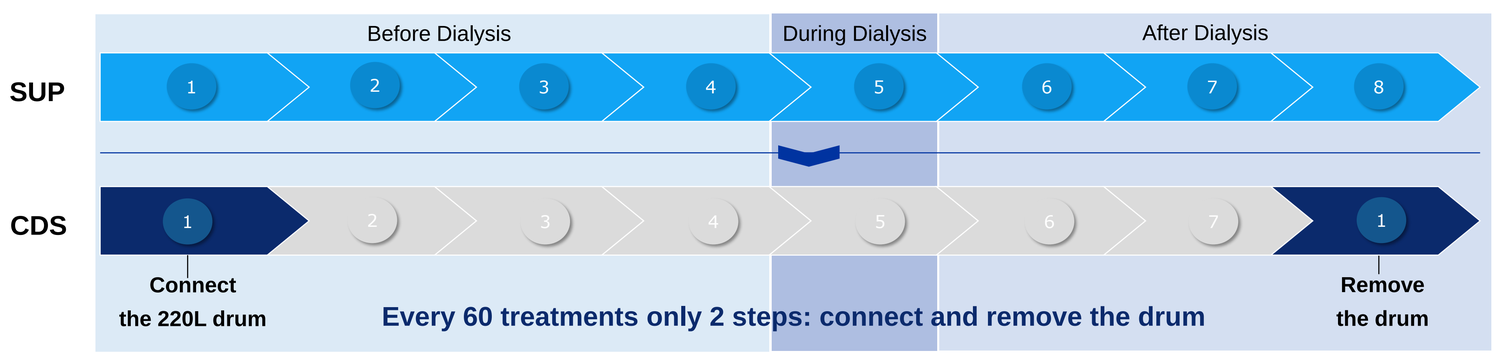
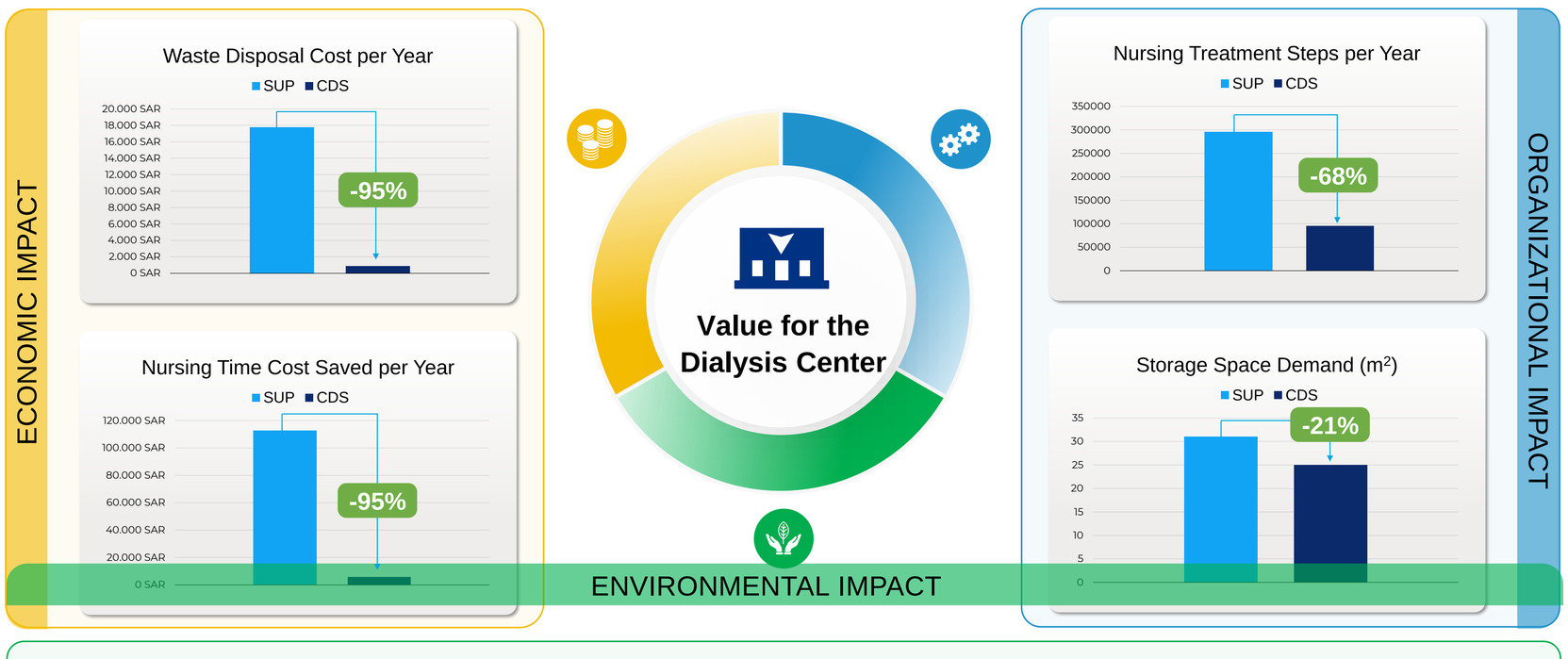
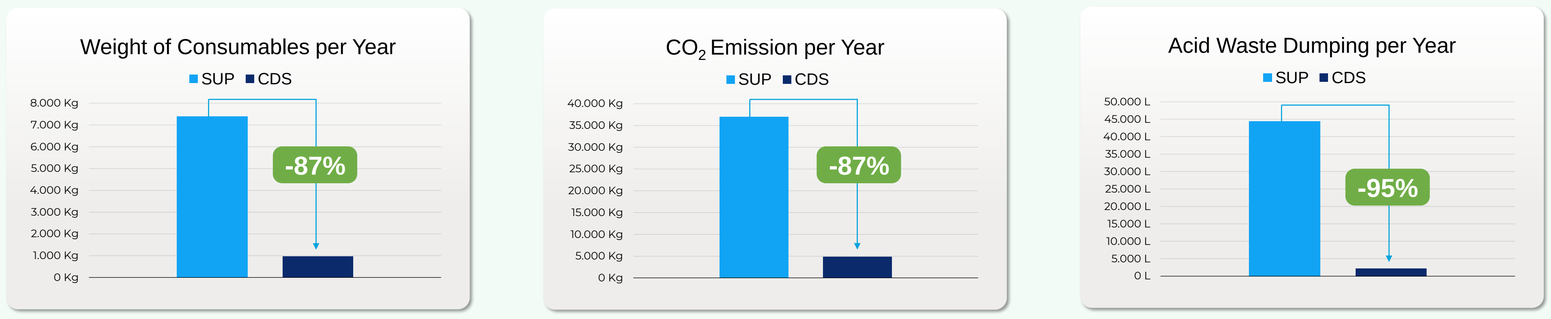


Figure 2: VALUE OF SWITCHING TO CENTRAL DELIVERY SYSTEM





CONCLUSIONS

The analysis demonstrated that CDS with 220L drum is a valuable and worthwhile solution by optimizing resource management, decreasing greenhouse gas emissions, reducing nurse's workflow and achieving a positive budget impact.

CONTACT INFORMATION

Dr. Ihab Fekry: ihab.fekry@freseniusmedicalcare.com