

On the Re-engineering and the Optimal Inventory management Strategies of Tube-Feeding-Diet (TFD) Operation Processes in medical center of Taiwan's Central area

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ABSTRACT

This study focus on the re-engineering of Tube-Feeding-Diet (TFD) operation processes and inventory management in the Nutrition Department in a Medical Center. After conducting careful analysis, we found many problems including inappropriate design of the existing tables and sheets, improper operations in the processes, no discarding procedure was designated and no statistical sheets are available for the managers, etc. In order to solve the above problems, we propose a series of eight-step action items: (1) Design new tables and sheets to replace the inappropriate ones. (2) Modify the design of the diet-change order sheet and change the operation processes. (3) Replace the existing diet-sheet with a new self-sticking label accompanying. (4) Introduce new catering tables and sheets to replace the existing ones. (5) A discarding procedure is proposed for the TFD service operation processes. (6) Re-design the replenishment operation procedure for canned TFD items in Building No.2. (7) Set up an inventory auditing procedures for the TFD items in the preparation room in Building No.1 and the storage room in Building No.2. (8) Establish a new web-based information system to assist the Nutrition Department. Following cautious assessment, the Nutrition Department not only is able to solve the problems using the six proposed action items, but also secure a cost-saving of \$NTD 40,000 each month. To control the inventory of the TFD items, the managers are desperate for a systematic infrastructure and more efficient approaches for optimal purchasing policy derivation. For each category of the TFD items, we employ a mathematical model for obtaining an optimal purchasing policy so as to minimize the total inventory costs per unit time.

Keywords: Tube-Feeding-Diet, business process re-engineering, order quantity, reorder point, inventory control