

Is the Unit Dose Process a tool for patient safety and for implementing “Lean Thinking” in the drug supply chain?

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Case study on Unit Dose Drug Dispensing Process (UDDDP) by an automated System for daily distribution of patient- specific therapies

This study assess:

- The UDDDP contribution to the **Risk Management**
- The impact of UDDDP on the **Hospital Drug expenditure**
- The **Return on Investment** for the acquired technologies



BEFORE: Ward stock system (WSS)

Prescriptions in paper record; medications prepared by nurses in the ward.

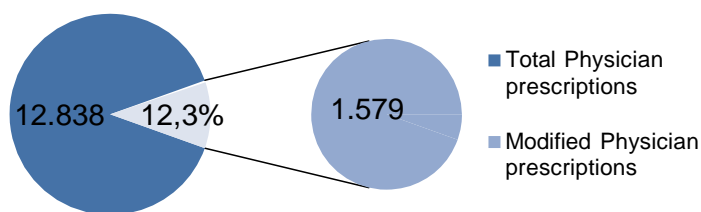
AFTER: Just in Time dispensing process (JIT)

Computerized physician order entry (CPOE); daily distribution of personalized and “ready-to-use” therapies to wards; electronic medication administration record by a barcode-assisted dispensing system.



Technologies installed in the pharmacy for UDDDP

Physician Prescriptions



Clinical Risk Monitoring

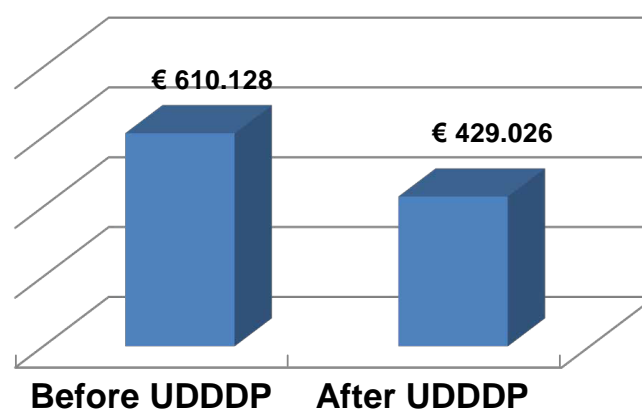
According to the statistics provided by the CPOE in terms of change of prescription because of a potential risk of drug interaction, **1.579** physician prescriptions (**12,3%** on the total amount) were modified in 6 months thanks to the pharmacist monitoring and CPOE support.

Drug expenditure

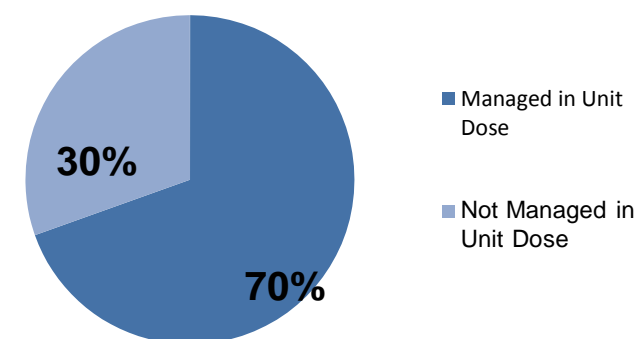
Calculated on 250 beds served by UDDDP in a 7 months timeframe (before and after implementation).

The reduction of drug expenditure in the analysis period amounts to about **30%**.

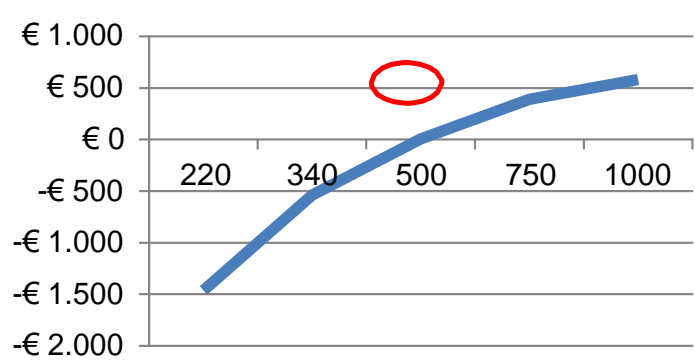
Drug Expenditure



Drug Expenditure after UDDDP



Yearly saving per bed



Return on Investment (ROI)

Calculated considering savings in drug expenditure and the costs of investment in technologies (automations, CPOE, IT hardware), full-risk maintenance fees, consumables and payroll for the external staff involved in Unit Dose production according to the number of beds served.

The cash flow analysis resulted in a break-even point equal to **498 beds**.

The implementation of the “Lean thinking” through UDDDP on the Hospital supply-chain reduces the Hospital Drug expenditure and improves the safety