

MedicalORDER®center Ahlen (MOC) and St. Franziskus Hospital Münster - supply chain optimisation, Germany

Supplies are a key cost factor for hospitals and may account for up to 1/3 of annual expenditures. This designates this area as a key application field for cost-saving eHealth solutions. The St. Franziskus Stiftung Münster established, together with the logistics focused Fiege Group, the medical ORDER@center (MOC) in Ahlen, Germany. Medical ORDER@center provides hospitals and other healthcare institutions in the vicinity of 300 kilometres with logistic services. The centre offers a variety of services supporting logistic processes in hospitals, thereby supporting supply chain optimisation. These additional services are the supply with pharmacological products from a centralised pharmacy, supply with medical and office products from a centralised warehouse, and the supply with sterilised goods from a centralised sterilisation unit.

Each service is offered by a separate division:

- MedicalORDER@pharma serves as the hospitals' pharmacy and is to 100% owned by St. Franziskus Hospital.
- medicalORDER@services GmbH is responsible for medical goods and other commodities
- medicalORDER@instruments GmbH provides surgical instruments especially for the operating theatre and takes them back again for sterilisation.

In short, MOC offers a standardised, ICT-supported storage and supply system. About 90% of articles used at a hospital ward, including most drugs, can be barcoded and stored according to a standardised system. This standardisation of supplies for a large number of hospitals leads to more efficiently manageable and cheaper logistics, as well as lower product prices as a result of the possibility of bulk purchasing. At the wards and hospitals, the system leads to demand based ordering rather than expensive storage of larger quantities. Demand is analysed continuously by MOC and stock levels are adjusted accordingly. This results in a smaller stock of supplies, compared to the without eHealth situation, less waste of materials (especially medications) not being used by their



expiration date, and up to 75% reduced incidents of medication and other supply shortages.

The system was implemented among others in the intensive care unit (ICU) of the St. Franziskus Hospital Münster in 2005. This ICU has 13 beds and about 650 patients a year.

The ordering process between the ICU and MOC is fully electronically integrated. The orders are processed by the MOC. The orders between MOC and suppliers are gathered and forwarded using an eProcurement platform provided by the company Medicforma.

The suppliers physically deliver ordered goods to the MOC, which then repackages them according to the ward's order and delivers them pre-sorted to the hospital. In the hospital, in-house logistic is organised using a company called FACT, the facility management company of St. Franziskus foundation.

The actual eHealth application is an electronic ordering system that makes the supply chain in electronic form complete and involved re-engineering of the whole purchasing process. This included a profound change in the organisation of institutions and also in physical buildings like storage rooms. Institutions specialise on certain parts of the purchasing process. The hospital and its nurses respectively concentrate on medicine and care, instead of administrative burdens. Within the MOC, purchasing and logistics can be rationalised due to economies of scale and based on improved demand notices from the ICU. FACT specialises in in-house technical services like in-house logistics.



Cost reduction, which is the main benefit in eOrdering, generates its savings in first instance from the decrease in process costs which results in lower product prices. This is the result of product standardisation and reduction of logistics costs at the intersection between the suppliers and MOC. However, these savings would not materialise if there were not an efficient way of handling messages. Standardisation, process re-engineering and electronic message exchange are intrinsically tied together and only so unfold their full potential.

The initial investment in 2005 for the ICU at the St.Franziskus Hospital Münster was just over € 100 000. Including the annual running costs of the MOC service, the economic benefits from the application are expected to exceed total costs already one year later in 2006. The annual net benefit from the application at the intensive care unit in the years to 2008 is expected to surpass 40 000 per year . The impact on the whole hospital is a multiple of this. Even though the system is designed for supply chain optimisation, patients receive a benefit as well. The time saved by nurses is spent with the patients in need, which gives citizens a 3% share of total direct gains. The rest goes to the hospital unit.

Core impact:

- Major decrease in cost of supplies
- More efficient logistic processes
- Standardisation and transparency of supply chain processes
- Reduction in stock levels: on average, the stock had to last for 11 days, which is now reduced to seven.

Main beneficiaries:

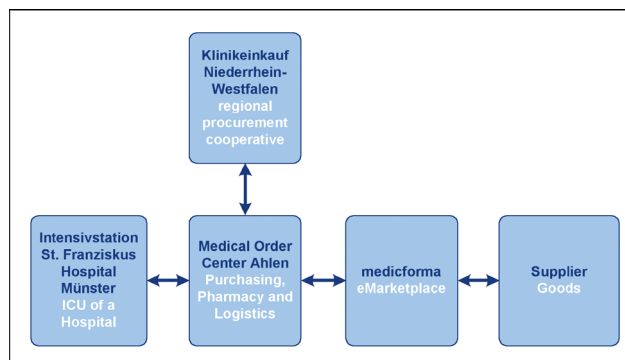
- St. Franziskus Hospital benefits from reduced supply costs – resources redeployed to delivering healthcare
- St. Franziskus Hospital benefits from fewer instances of material and medicine shortages, and thus lower risk for patients

Patients of the hospital benefit from increased time at patients' site.

Lessons learned:

- Consequent process re-engineering and continuous process improvement is important for benefits realisation
- Such complex change processes should be implemented step-by-step to learn from experience – the ICU was the last

FIGURE: ORGANISATIONAL STRUCTURE OF PROCUREMENT AT ST. FRANZISKUS HOSPITAL MÜNSTER



ward in the hospital that introduced the supply chain system

- To cope with unforeseen instances, a contact person is needed despite automated processes
- Interdisciplinary competences from logistics and healthcare are required for successful implementation.

Economic results:

- First year of annual net benefit, i.e. when annual benefits exceed annual costs: 2006, year 2
- Estimated annual net benefit for the year 2008: approximately € 40 000
- First year of cumulative net benefit: 2007, year 3
- Estimated cumulative benefit by 2008: approximately € 470 000
- Cumulative investment costs, including operating expenditure, by 2008: approximately € 390 000
- Estimated productivity gain, measured in decrease in cost of logistics per item supplied: 9%
- Distribution of benefits to 2008: Citizens – 3%; Hospital – 97%

www.medicalorder.de

www.sfh-muenster.de

www.f-log.de

www.ehealth-impact.org/case_studies/index_en.htm