



## SUSTAINABILITY IN PROCUREMENT: REPROCESSING REPAIR

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» Sustainable Purchasing

Sustainability in hospital procurement management is gaining ground as a guiding principle and selection criterion when purchasing medical devices.

Sustainable purchasing is aimed primarily at satisfying the justified interests of patients (pain-free, risk-free, anxiety-free procedures). Based on the ethical principle of “Primum nihil nocere” (First do no harm), this means purchasing medical devices that enable such procedures to be carried out. Sustainable purchasing also takes into account the principles of preserving resources and protecting the environment. This is where the ethical principle of avoiding waste comes to the fore. These ethical principles cannot be reconciled with a purchasing philosophy dominated by pricing and discounts.

These principles are fulfilled through reprocessing and repair according to validated techniques. The demand on purchasing is to bring these ethical strategies and targets to fruition, taking into account the impact in terms of patient outcome, process optimization, handling, safety and marketing effects when selecting products and technology. Sustainable purchasing is directed at life cycle costs.

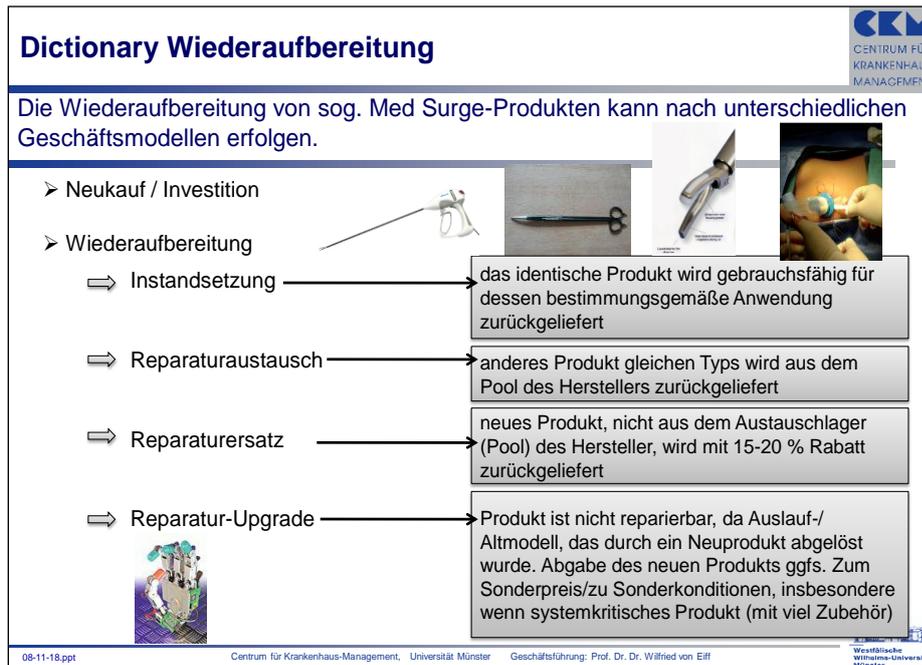
» Starting situation

Hospitals are required to lower avoidable costs and reduce spending by value analysis and boosting value in order to ensure that persistent cost pressures and ever-greater economizing do not lead to ethically questionable decisions in terms of rationing and prioritizing medical performance.

This involves cost categories and payment flow statements that offer no added value for patients or, as a result of which, investment funds are cut unnecessarily.

In both cases, capped budgets have direct and indirect consequences that lead to rationing. These occur, for instance, when due to cost restraints a medical device is rarely than would normally be recommended or clinically evident from the standpoint of patient outcome, medical quality and risk.

One way of cutting medical operating costs, while at the same time minimizing the effects of rationalization, would be to prolong the life cycle of sterilizable (multi-use) surgical products (so-called multi-patient-use products) by raising the repair quota. The reprocessing of “Med-surge products” (i.e. all products used in the operating theater and managed via the CSSD – Central Sterile Supply Department) can be carried out and accounted for according to various business models (see Figure 1).



**Figure 1: Investment decisions are influenced economically and medically by reprocessing strategies.**

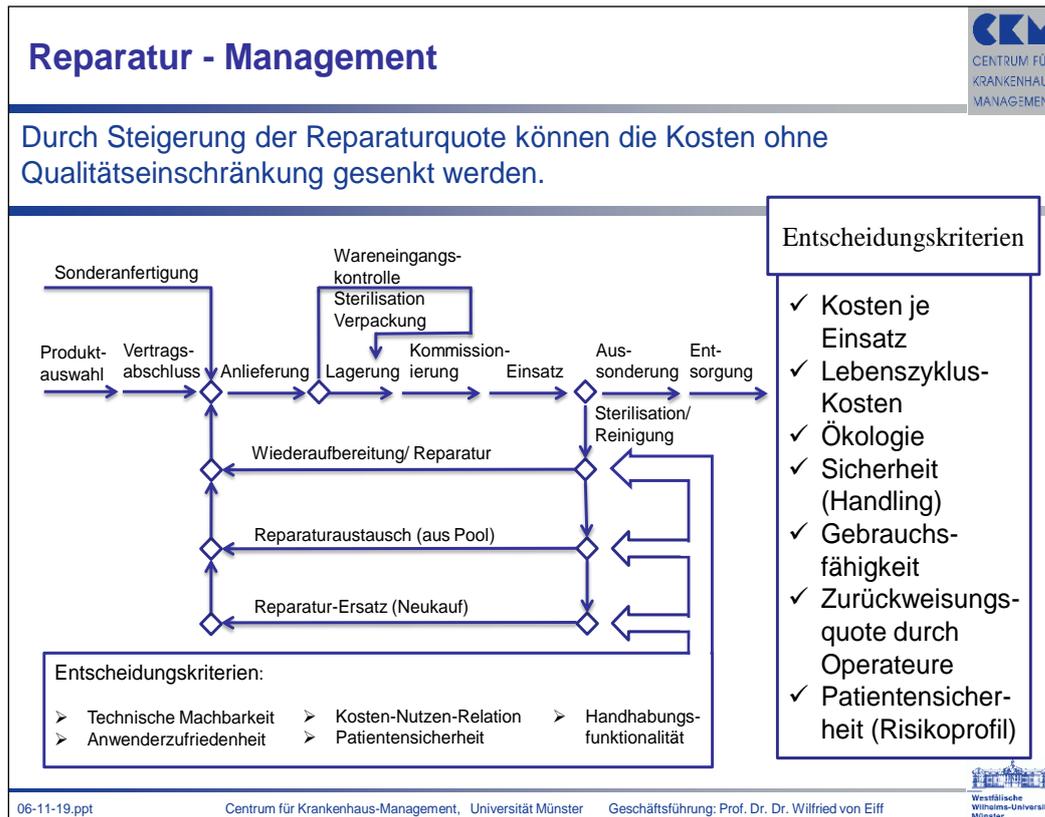
The economic benefits of repair are obvious with, for instance, bipolar scissors, saw blades, ultrasonic cutting devices and surgical chisels, as well as sieve containers.

Repair decisions become complicated when the interests of manufacturers, retailers, repair companies and hospitals are incompatible and information is inconsistent.

Manufacturers prefer repair quotas to be as low as possible in the interests of constantly high sales volumes. When a hospital works in conjunction with retailers, the average repair quota is 30% compared to up to 90% when a repair company is commissioned.

» The purchase-repair strategy

The purchase-repair strategy for multi-use surgical products is gaining significance on both economic and ecological grounds (sustainability and financial feasibility, as well as preservation of resources) (Figure 2).



**Figure 2: The repair strategy influences investment decisions**

Data from various German and Austrian hospitals show that various strategies and practices defined by the repair quota criteria can also be found in this purchasing sector: the lower the repair quota, the higher the quota for repair-exchange and repair-replacement, and thus, the higher the instrument costs per procedure.

The repair quota is affected by the following criteria setting:

- The manufacturer's sales/repair strategy: this can exclude repairs, limit the number of repairs or limit the value of repair costs.
  - Life cycle phase of a product: Expired/old models are replaced by new products and excluded from a repair process, even though they could still be repaired.
  - The reparability of a product based on constructive and material-related features of robustness.
  - The objective possibility of combining repair with product upgrading, so as to increase practical value and extend the repair cycle whilst lowering costs.
  - Products in the hospital portfolio for which there is no national manufacturer/service provider (the manufacturer has gone bankrupt, the product has been withdrawn from the market, foreign products).
  - Hospital procurement strategy: Isolated repair management versus integrated sales/repair strategy (= considered as an investment decision).
- » Calculation strategy: Life cycle costs
- A product life cycle in medical-financial terms describes the number of times a medical device is used correctly and handled properly, risk free, while taking into account product



functionality and robustness, repair, upgrading, disposal and recycling. Life cycle costs refer to the assessed, targeted use of resources needed to repair the product and make it operational.

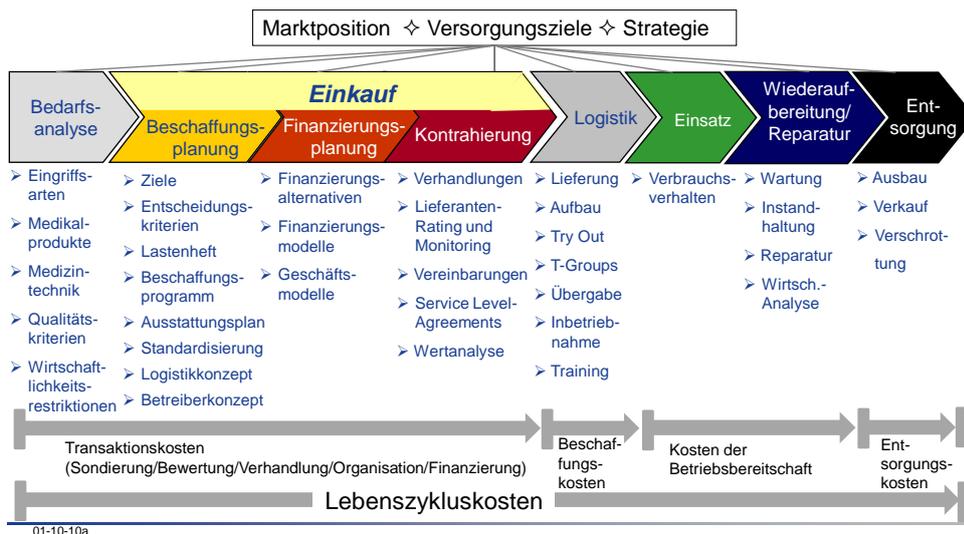
These life cycle costs must be compared against the number of complication-free procedures carried out.

The life cycle concept is based on four considerations:

- > Firstly, it is assumed that the product costs in the procurement phase (purchase price) depend directly on the functionality of procedural handling and robustness (repair, wear and tear). This product quality determines the length of the product life cycle and subsequent repair costs.
- > Secondly, it is clear that costs incurred during the life cycle to prepare the product for operational use after purchase can only be influenced to a limited extent or are determined by the properties of the purchased product before using it for the first time.
- > Thirdly, the concept of life cycle costs considers every product purchase as an investment, the benefits of which are judged not only in terms of price but also as regards use and risk parameters.
- > Fourthly, the life cycle cost strategy aims to overcome the fatal separation between the purchaser's price-orientated purchasing responsibility and the user's (doctor's) responsibility regarding targeted use of the said product. Separation of these two areas of responsibility regularly culminates in the purchase of reasonably priced products that prove disadvantageous for the user and/or which offer very little opportunity, if indeed any, for reprocessing or repair (see Figure 3).

## Lebenszykluskosten

Die Lebenszykluskosten werden von der Wiederaufbereitungs- und Reparaturfähigkeit eines Produkts wesentlich beeinflusst.



**Figure 3: Through the life cycle cost approach, the purchase of every medical device is classed as an investment decision**



- » Calculation: Bipolar scissors  
A pair of bipolar scissors costs 420 to 480 Euros and, depending on how the item is handled, can have between 20 and 40 reprocessing cycles. From the manufacturer's standpoint, these products cannot be reprocessed, or at least only to a limited extent. Specialist repair companies repair these scissors for approximately 90 Euros, thus allowing the product to last for five life cycles as opposed to one. The cost savings per procedure (see Figure 4) amount to over 50. If the repair is combined with a new coating to improve function, the repair costs increase to approximately 140.00 Euros. However, the number of life cycles is increased
  
- » Safety-relevant product upgrading through repair  
Orthopedic motorized systems provide clear evidence that safety-relevant product upgrading can also be carried out in conjunction with repairs. The housing can be re-coated during repair and more moisture-resistant layers can be incorporated. Given the greater durability of the layers, the service life is increased resulting in better efficacy/availability and a longer operating life. Costs per procedure are also reduced at the same time.

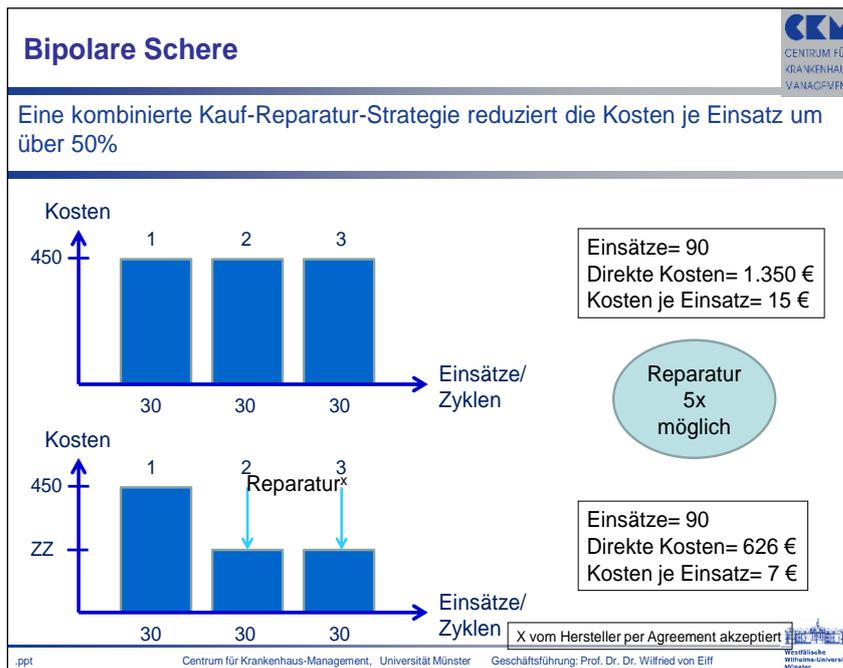


Figure 4: Repairs that improve function increase the number of reprocessing cycles

» Prolonging the life cycle through repair

Saw blades for drilling machinery generally cost between 40 and 45 Euros (new) from the manufacturer, with no repair option. Depending on the model, resharpening can technically be carried out between 2 and 10 times without reducing the function or jeopardizing safety. Repair costs are calculated at 12 Euros. The number of uses depends on how the item is used by the operator, amongst other factors. Between 55 and 60% of operating costs can be reduced.

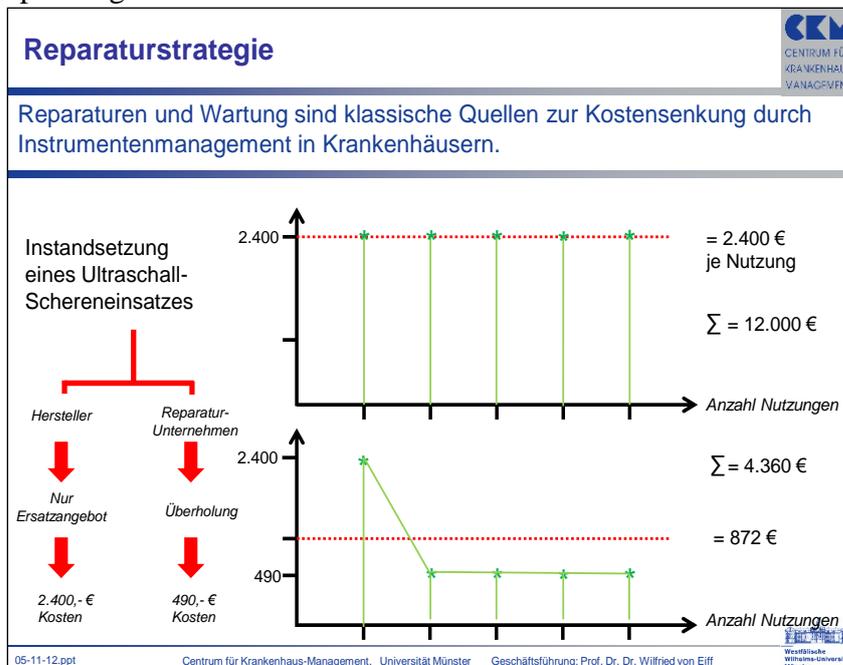


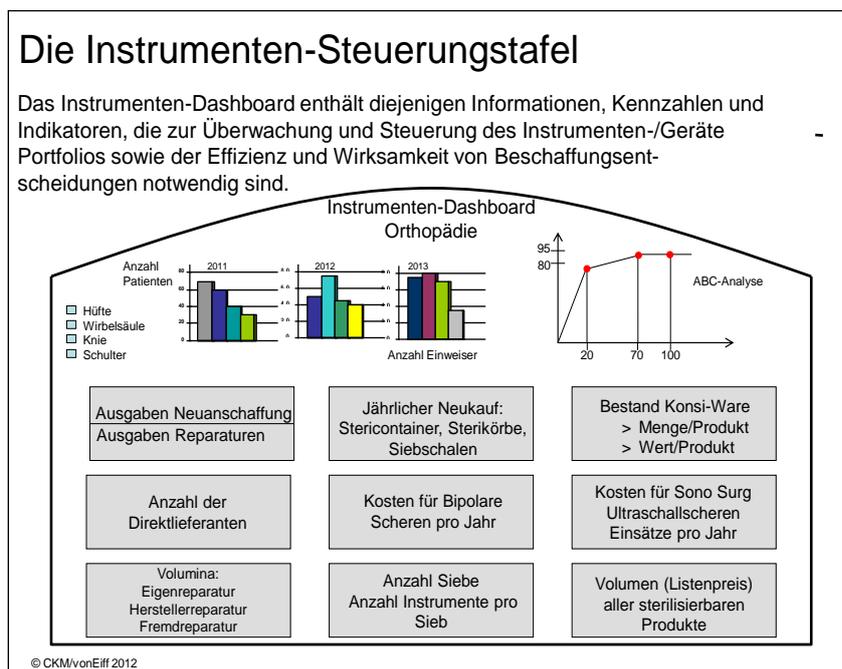
Figure 5: Repair strategies can be negotiated with the original manufacturer or carried out by a specialist service provider.



Savings of up to 65% are feasible if OP containers, costing around 800 Euros brand new, are repaired at a cost of approximately 100-120 Euros.

» Instrument dashboard and instrument management

The reprocessing and repair of medical devices should be driven by clear-cut figures. To add value to the information on the figures, these are entered into the decision-making dashboard which identifies any correlation between them. (see Figure 6). Key figures to check and guide sustainable purchase management include “Reprocessing quota per product per cycle”, the “Repair quota”, “Non-reprocessing costs” and the cost of “Burden of Disease”; the latter arises because, when a product is not reprocessed due to the high cost involved, the number of applications is kept artificially low due to cost constraints and thus presents a disadvantage for patients.



**Figure 6: Dashboard as a controlling instrument**

» Summary

Repair options for costly, sterilizable surgical medical devices are a key factor for consideration when choosing investment and purchasing alternatives. The possibility of repairing a product is directly correlated to the construction, material properties and robustness of the said product during use. As a general rule, products that can be repaired are more expensive than those that cannot be repaired. Taking the repair strategy into consideration, it may therefore be financially viable to invest in the (allegedly) more expensive product.

- > The reprocessing of disposable products reduces the cost per procedure and boosts the profitability of hospital operations.
- > The repair option has five effects:
  - ➔ Greater business efficiency due to direct cost reduction per hospital procedure.
  - ➔ The economic impact of equipping workstations with variable skill requirements.
  - ➔ The ethical effect, since the lower costs contribute to a reduction in rationing and prioritizing of health services.



- ➔ The sustainability effect, since cost-cutting in the medical sector provides an opportunity to create a more solid financial base. Investments can be financed through cost-cutting exercises.
- ➔ The ecological impact of preserving resources through multi-use strategies.

#### Checklist Reprocessing / Repair of Sterile Products

- Do you use products that are used limited times but which are not intended for repair by the manufacturer?
- Do you use products for which the manufacturer no longer offers a repair service?
- How high is the repair quota? Benchmark = 50 %.
- How high is the reserve (= replacement stock for “emergency situations”) for sterile surgical products? Benchmark = Ø 10 %.
- What is the value of sterile surgical products currently in circulation?
- Is an instrument management program in place and what are its objectives?
- Proportion of non-required instruments per sieve? Benchmark = 0 %.

#### Benchmarking Cost Management

- CKM carries out a hospital benchmarking procedure aimed at comparing costs in various sectors (purchasing, logistics, catering, linen and sterile equipment, etc.). A discussion of best practices should give participants ideas for appropriate optimization measures.  
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**Figure 1**

Dictionary definition of reprocessing

The reprocessing of so-called Med Surge products can follow various business models.

New purchase / investment

Reprocessing

Repair/servicing	The identical product is returned fit for the use for which it was intended
Repair / exchange	Another product of the same type is delivered from the manufacturer's pool
Repair / replacement	New product is sent back with 15-20% discount. This is not taken from the manufacturer's exchange pool.
Repair / upgrade	The product cannot be repaired as it is an expired/old model that has been replaced by a new one. Delivery of the new product, if required. Special price/special conditions, especially if the product is crucial for the system (with numerous accessories).

**Figure 2**

Repair – Management

Costs can be reduced without limiting quality by increasing the repair quota

Special layout            Check on receipt of goods  
    Sterilization, packaging

Product selection      Drafting of contracts    Delivery            Storage  
 Commissioning        Use                            Selection          Disposal

Sterilization / cleaning/purification

Reprocessing/repair

Repair exchange (from the pool)

Repair replacement (new purchase)

Decision-making criteria:

Technical feasibility            Cost-benefit ratio  
 User friendliness                Patient safety                    Ease of handling

Decision-making criteria

Costs per application/use

Life cycle costs

Ecology

Safety (handling)

Capacity for use

Rejection quota through operators

Patient safety (risk profile)





Manufacturer	Repair company	No. of uses
Only replacement offer	Reconditioning	
2,400 Euros Costs	490 Euros Costs	No. of uses

**Figure 6**

The Instrument Dashboard

The instrument dashboard contains all of the information, key figures and indicators needed to monitor and control the instrument/device portfolio and the efficiency and efficacy of procurement/purchasing decisions

Orthopedic Instrument Dashboard

Number of patients

- Hips
- Spine
- Knee

Shoulder                      No. of referrals                      ABC analysis

New purchase expenditure Repair expenditure	Annual No. of new purchases: sterile containers, sterile baskets, sieve trays	Goods inventory quantity/product value/product
No. of direct suppliers	Annual costs of bipolar scissors	Cost of Sono Surg ultrasound scissors No. of applications per year
Volumes: In-house repair Manufacturer repair External repair	No. of sieves No. of instruments per sieve	Volume (list price) of all sterilizable products