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# **Analysis of the Options for an Optimised Article Use and Recyclables Collection towards Waste Amount Reduction and Initiation of Their Implementation**

(Project AMOR)

**Final Report**  
(Summary)  
(Vers. 1.0)

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## Summary

The material turnover of the Hietzing Hospital is considerably large with its amounting to some 1.9 Mio. kg of short living products. Such a high material turnover thus outlines the relevance of an optimally functioning waste management and also of an efficient resource utilisation. A sensible use of disposables and an increased employment of reusables, together with an optimised collection of recyclables, prove relevant pillars of an optimised resource management in hospitals.

In the AMOR project, input- and output-related measures are developed, tested and evaluated, which will enable resource-saving and waste prevention in the Hietzing Hospital (KHR).

The input-related measures concentrate on the increased employment of reusables and on measures towards information and motivation of the hospital staff, which will ensure a thrifty employment of the disposables. The base is given by the consumption data for disposables in the KHR. Together with the work group „Disposables“, the most frequently used disposables are evaluated towards their suitability for replacement through reusables or for a thrifter employment.

The options for employment of reusables are quite limited by the existing infrastructure in the KHR for disinfection and sterilisation of used consumables. An increased employment of reusables within the KHR is only possible if the consumables' processing is managed either centrally in the KHR or outsourced into an external unit.

Paper tissues and rubber gloves for the cleaning staff have proved a good example for two articles that – at least partly – can be replaced by reusables. Further four disposables being widely employed (garbage bags, reprographic paper, kidney dish, cups) haven been selected. For these 6 disposables, individual information folders have been designed. These serve information and motivation purposes for the staff, so that a thrifty employment of the articles can be achieved. The content depicts the current article consumption rate, the derived individual targets and action suggestions towards a thrifty consumables' employment.

The following conclusions can be drawn with regard to input-related measures:

- The limited facility for processing reusables through disinfection or sterilisation restrains an all-over switch to reusables at the KHR. An intensified employment of reusables can thus occur in those sectors that still have the opportunity for disinfection, e.g. in the surgery.
- The sensitisation of the subject of a thrifty consumables' employment is launched at the example of 6 disposables (paper tissues, garbage bags, reprographic paper, examination gloves, kidney dish, cups) by means of specific information folders. A consumption reduction of disposables can succeed, for the time being, only by means of awareness raising towards a thrifty employment of the articles by the users.
- If the targets individually defined for these 6 disposables are met by the KHR's staff, the result will include a saving of purchase and disposal costs of nearly 79,000.- Euro, and a waste reduction of 39,000 kg.

The output-related measures concentrate on the hazardous and non-hazardous medical waste fractions as well as on the recyclables (paper, glass, cardboard, plastics and metals). 28 wards have been gained for a participation in the AMOR project. At each one, within two waste amount assessments conducted, the waste and recyclables flows have been investigated. Also, the corresponding weak spots and optimisation potentials have been identified, and individual solution suggestions towards an optimised recyclables collection have been developed. The effect of these solutions and the measures suggested has been evaluated within the second waste amount assessment.

The evaluation of the suggested measures shows different results. Wards where an improved separate waste collection is implemented are compared with wards of insignificant or constant performance. A distinct trend is not to be derived by means of a waste amounts investigation alone.

An extrapolation based on the additionally collected amounts of recyclables at the selected wards in terms of the entire KHR shows a potential for a separate waste collection and following material utilisation for more than 100,000 kg/year. A difference has been registered between the set-point and the current values of non-hazardous medical waste. This difference indicates a reusables' potential that can be utilised. The reduction of hazardous and non-hazardous medical waste, which would result from an increased collection of recyclables, could however not be distinctly proven within the waste amount investigations. For achieving this goal, a longer investigation period is necessary.

At all investigated wards, containers needed for the recyclables collection have been available. These serve the separate collection of waste paper, cardboard, waste glass, plastics and, where necessary, also waste metal. In the kitchen, new containers for collecting plastics and waste paper will be installed. Also introduced is the separate collection of styrofoam.

The improved separate collection has enabled the cutback of further collection containers for residual waste, respectively, an extension of their collecting intervals (implemented or launched). In total, till the end of 2006, a reduction is resulting for the waste disposal costs of the KHR of annually 28,000.- Euro.

In terms of output-related measures, the following conclusions can be drawn:

- Intensified information and sensitisation of both staff and patients, supported by an optimisation of the waste containers location and indication, can increase the rate of collected recyclables.
- Although (probably due to the short observation period) the results do not prove yet completely unequivocal, the project has shown that a significant part of the expected saving potential is indeed given and refers to the waste paper in the medical waste. The options for actually utilising this potential within patients' reach appear most promising. Thus, the measures already tested should be further implemented at the wards participating.
- The optimisation of the recyclables collection shall focus on the waste paper fraction. In parallel, both mass- and volume-relevant recyclable fractions, such as waste glass, cardboard, plastics and metals (kitchen), should be further paid due attention.
- The AMOR project has supplied with a further key bit of a base towards establishing a waste management controlling within the KHR.