

An Evaluation of Medical Waste in Health Facilities through Data Envelopment Analysis (DEA) Method: Turkey-Amasya Public Hospitals Union Model

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Abstract : In the light of fast-paced changes and developments in the health sector, the Ministry of Health started a new structuring with decree law numbered 663 within the scope of the Project of Transformation in Health. Accordingly, hospitals should ensure patient satisfaction through more efficient, more effective use of resources and sustainable finance by placing patients in the centre and should operate to increase efficiency to its maximum level while doing these. Within this study, in order to find out how efficient the hospitals were in terms of medical waste management between the years 2011-2014, the data from six hospitals of Amasya Public Hospitals Union were evaluated separately through Data Envelopment Analysis (DEA) method. First of all, input variables were determined. Input variables were the number of patients admitted to polyclinics, the number of inpatients in clinics, the number of patients who were operated and the number of patients who applied to the laboratory. Output variable was the cost of medical wastes in Turkish liras. Each hospital's total medical waste level before and after public hospitals union; the amounts of average medical waste per patient admitted to polyclinics, per inpatient in clinics, per patient admitted to laboratory and per operated patient were compared within each group. In addition, average medical waste levels and costs were compared for Turkey in general and Europe in general. Paired samples t-test was used to find out whether the changes (increase-decrease) after public hospitals union were statistically significant. The health facilities that were unsuccessful in terms of medical waste management before and after public hospital union and the factors that caused this failure were determined. Based on the results, for each health facility that was ineffective in terms of medical waste management, the level of improvement required for each input was determined. The results of the study showed that there was an improvement in medical waste management applications after the health facilities became a member of public hospitals union; their medical waste levels were lower than the average of Turkey and Europe while the averages of cost of disposal were the highest.

Keywords : medical waste management, cost of medical waste, public hospitals, data envelopment analysis

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