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**Factors Contributing to Efficient Operating Room Management:  
An Empirical Analysis of German Hospitals**

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The German hospital system underwent a change in its financial incentive system from 2003 to 2005. From the previous system, which could best be described as cost reimbursement, the compensation changed to a pay per case, in the form of a modified DRG system based on the Australian plan. In light of this change, a survey was taken in 2002 of all anesthesiology departments to document the status of both the management and financial structure before the start of the DRG system. While an overview of the Anesthesiology departments is a unique data set, of greater interest is to quantify the similarities and differences in concrete questions of organization and management. A further step is to examine how these differences affect the effectiveness of the department in management of routine tasks. Particularly the adaptation to changes brought on by the transition to DRG's is a test of a department's ability to change. To make this analysis, it was necessary to develop a new efficiency proxy which takes advantage of the unique characteristics of the German hospital system to allow the inclusion of a large number of surveys.

The first part details results of the 2002 survey and compares analogous questions from the 1998 survey. This section focuses on the structure of the German anesthesiology departments as well as an overview of the costs of anesthesiology services in Germany. In the second part, the implementation of operating room (OR) management is examined in a hospital setting. Using cross-sectional data from German hospitals, the efficiency of different OR management forms is measured empirically. An efficiency proxy was developed to represent the effectiveness of the different OR management forms. Hypotheses are developed and tested based on the structural, organizational and workflow components. These components are taken out of the existing management literature as well as from suggestions from practitioners. Then the different organizational components were tested for their effect on the OR efficiency. 87 hospitals provided the necessary cost data to allow this analysis. While hospital characteristics are the primary driver in OR efficiency, there are local management structures can have positive effects on efficiency. The most important of these factors is the existence of consequences for unacceptable schedule infractions. This effect is independent of any formal structures such as the existence of an OR manager or contractual agreements governing the OR suite.

OR management is still a developing practice in Germany and the analysis supports this supposition. Hospitals are found along a wide range of evolutionary. The analysis shows that while structural characteristics have an important influence on OR efficiency, the implementation of the elementary management functions planning and controlling are critical to efficient OR performance. In addition, the definition and measurement of OR efficiency is of increasing interest as the cost pressure of not just the DRG's but the decreasing political willingness to provide health care at any price. An efficiency measure which is able to make use of available data while still providing a robust analysis is equally important.