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Commentary: Quality can be economically efficient, but who deserves the credit?

Christoph Haller, MD

Health care reimbursement needs to account for the quantity, quality, and complexity of care. Many models or a mix of multiple models have been applied worldwide, such as fee for service, capitation, diagnosis-related groups (DRGs), and pay for performance. No approach has been universally considered superior to the others, especially because each model has strengths in different socioeconomic contexts. In this issue of the *Journal*, Murin and colleagues¹ report an analysis of early postoperative extubation (fast-track) in patients with congenital heart disease weighing <7 kg and its impact on reimbursement in the German DRG system.¹ Their retrospective analysis shows that their fast-track protocol did improve patient outcomes with regard to postoperative length of stay in the intensive care unit (ICU) and in the hospital, fewer blood transfusions, and a tendency toward lower early mortality in fast-tracked patients compared with matched controls who did not undergo early extubation. Total reimbursement was reduced by 27% in the fast-track group compared with controls. Simultaneously, ICU nursing staff was reduced over the study period while the same case load was maintained. The authors conclude that a DRG-driven reimbursement system does not provide incentives to improve patient care with their fast-track protocol and that it instead penalizes a unit by decreasing total reimbursement.

The study highlights a problem that is not unique to the DRG model: how can reimbursement systems encourage health care practitioners or hospitals to provide high-quality care while not wasting resources? The German DRG system

Christoph Haller, MD

CENTRAL MESSAGE

A system that responds to lower revenue with financial and staffing cuts without taking profit and quality of care into account fails its most fundamental assets: health care professionals.

is based on the International Statistical Classification of Diseases and Related Health Problems—German Modification, which is used to group diagnoses, as well as the operations and procedures key (Operationen und Prozedurenschlüssel) to group procedures. An individual patient's DRG is then determined by multiple factors, such as the main diagnosis, secondary diagnoses, procedures, length of stay, ventilation time, demographic data, and others. Ventilation time is particularly relevant, as certain time thresholds automatically trigger DRGs that significantly increase the case's cost weight (ie, the factor ultimately driving total reimbursement for a particular patient), irrespective of other patient-related factors. Murin and colleagues show that a service that introduces improvements in patient care does not necessarily receive higher reimbursement.

There are several aspects that need to be considered. Most importantly, the study only reflects on reimbursement per se, but does not differentiate between revenue (ie, reimbursement) and profit (ie, reimbursement minus costs incurred). ICU and hospital length of stay were significantly reduced, the transfusion rate was lower, and staffing was reduced with implementation of the fast-track protocol. These factors likely contribute to reduced costs, thereby driving profit. Murin and colleagues point out that case complexity was similar between groups, and so the expected reimbursement should have been the same and increasing the profit margin. However, this perspective is based on the covariates used for propensity matching. The DRG system considers duration of ventilation as a factor

From the Department of Cardiovascular Surgery, Labatt Family Heart Centre, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada.

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Address for reprints: Christoph Haller, MD, Division of Cardiovascular Surgery, The Hospital for Sick Children, 555 University Ave, Toronto, Ontario, Canada M5G 1X8 (E-mail: christoph.haller@sickkids.ca).

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affecting case complexity and thereby reimbursement. An inclusion criterion of postoperative ventilation time of ≤ 8 hours rather than inclusion by era before and after implementation of the fast-track protocol further biases results. This obviously must lead to differences in the reimbursement of both groups. Whether ventilation should be considered a complexity increasing factor on its own may be called into question, but the DRG system does not attempt to reimburse via a risk-adjusted bundled payment per diagnosis. It also attempts to adjust for incurred costs, at least to some extent.

Thresholds for ventilation times that trigger higher reimbursement in the German DRG system are set at specific intervals. The risk that the system will incite an intentional delay in extubation or hamper the implementation of fast-track protocols seems rather low and has been discounted by health insurers.² Surprisingly, a substantial number of patients in the fast-track group were still classified under a DRG associated with ventilation times >24 hours. It is also difficult to imagine that the significant differences between groups in the number of patients ventilated for >95 hours were driven primarily by the fast-track protocol. A patient who can be safely extubated early postoperatively is likely not ventilated for 4 or more days irrespective of a fast-track protocol.

The authors have shown excellent results in a challenging group of patients and must be congratulated on their success. Despite reduced staffing, they maintained their case load and improved outcomes. What they correctly highlight is a much more complex problem in health care. Economic efficiency and high-quality care can sometimes be conflicting interests. Innovation and progress often do not translate into immediate economic advantage but may turn out to do so in the long term. Especially in congenital cardiac surgery, case volume cannot be increased rapidly,³ and regulated reimbursement rates do not allow centres of excellence to charge higher fees. Hospital administration is often cutting budgets and directs resources away from units with lower

reimbursement. This is further aggravated by understaffed nursing, a chronic problem driven by decreased labor costs, tough working conditions, and low pay. Collective labor agreements do not differentiate between the complexity of the specialty, with the same salaries for doctors and nursing across specialties. Administration needs to understand that their primary asset is the expertise of their employees and the quality of care they provide. The German health care system undervalues that and needs to provide incentives for health care practitioners at every level to stop the ongoing outflux of qualified professionals. A strict adherence to the Federal Joint Committee guidelines^{4,5} with centralization of care for congenital patients can further increase efficient resource utilization, allow congenital cardiac surgery units to operate economically, and provide the financial scope to reward high-quality care with increased profit margins.

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