

REVIEW ARTICLE

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Healthcare Reform and the Cardiac Anesthesiologist/Intensivist: Challenges Ahead

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INTRODUCTION

Cardiac anesthesiologists and intensivists are part of a changing healthcare environment in which financial risk is shifting from payers to providers. This shift is intended to create an incentive for delivery systems to provide more cost-effective, coordinated care. To succeed under these new incentives, it is no longer sufficient to simply provide high-quality care on a case-by-case basis. Instead, providers will be held accountable to care for patients beyond the traditional period of anesthesia start time to anesthesia end time. Also, providers will be required to focus beyond the individual patient toward caring for a population of patients. For anesthesiologists, this will require both a new skill set and a changed job scope, including leading teams toward new approaches to care for patients. In this article, the authors present examples of targeted interventions in which cardiac anesthesiologists and intensivists, partnering with colleagues from other specialties and disciplines, can increase the cost effectiveness of care for populations of patients who require acute hospital care. Cardiac anesthesiologists and intensivists will be particularly relevant in the new reimbursement environment because they have more impact on perioperative processes. For cardiac procedures, the perioperative period has a greater effect upon healthcare expenditures than many other surgical domains.¹

Healthcare is changing. The trend is for providers to take on increased financial risk and provide high-value, cost-conscious care. For providers, financial risk is incurred via two different payment models: shared savings and bundled payments. In shared savings, providers are offered incentives to reduce the overall healthcare spending for a defined population by receiving a portion of the net savings achieved. Under shared savings, providers are motivated to reduce spending through such mechanisms as reducing unnecessary hospitalization, services, and procedures. In bundled payments, providers are offered a single payment for an episode of care, thereby providing an incentive to reduce spending within a care episode, but not to reduce the number of hospitalizations or procedures overall. Under both payment models, cardiac anesthesiologists and intensivists have an important role to play in reducing unnecessary procedures and

services and in selecting and optimizing patients for necessary ones.

INTENSIVE CARE UNIT CARE AND CLINICAL PATHWAYS

Providing higher-value care includes redesigning the entire continuum of care for patients, including hospital-based care. Hospital care accounts for 32% of national healthcare expenditures,² and a large component of spending is in intensive care unit (ICU) care. ICU care costs nearly 3 times non-ICU inpatient care, and there are major savings opportunities within the ICU stay that have the potential to yield substantial results.³ The cardiac anesthesiologist and intensivist have an important role in driving efforts to decrease the cost of care delivered in the hospital, and in particular, care that involves the ICU. These efforts include: (1) targeted interventions to identify and aggressively treat problems early, thereby mitigating the impact of costly downstream consequences; (2) timely reductions in the intensity of services when clinically appropriate, and (3) shortening the length of stay (LOS) in the ICU and in the hospital overall. Hospitals will achieve savings by combining these efforts with standardized clinical care protocols and enlisting strong clinical leaders. Given the substantial costs and role of critical care in this work, it will be essential that hospitals engage

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Funding: This work did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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1053-0770/2601-0001\$36.00/0

<http://dx.doi.org/10.1053/j.jvca.2016.07.004>

Key Words: health care reform, cardiac anesthesia, critical care outcomes, reimbursement, intensive care units, clinical protocols, patient safety, resource allocation, avoidable cost of harm

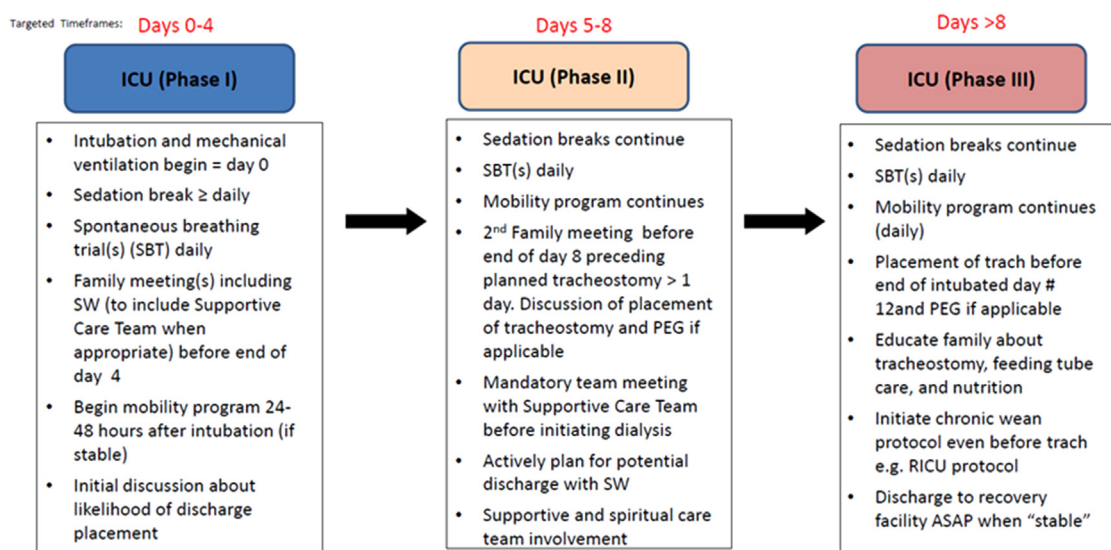


Fig 1. The Respiratory Recovery Pathway is divided into 3 ICU phases above: Days 0-4; Days 5-8; and Days >8. The Pathway includes changes to sedation agents and practices, an aggressive multidisciplinary daily mobility and patient ambulation program, social work and case manager involvement in the ICU setting to begin early discharge planning, formal family communication/meetings to discuss goals and plan of care with palliative care facilitators, and targeted timing for tracheostomy and percutaneous endoscopic gastrostomy (PEG) placement.

cardiac anesthesiologist/intensivists and other physician intensivist leaders to guide this work.

Clinical pathways are an effective means to standardize care and reduce costs, including shortening the LOS in the ICU.⁴ At the Mount Sinai Hospital (MSH), anesthesiologists/intensivists led the implementation of a Respiratory Recovery Pathway for high-severity patients, patients suffering from respiratory failure requiring tracheostomy, and mechanical ventilation beyond 96 hours. For this population, more than approximately 50% of the hospital stay occurred within the ICU. Prior to implementing the pathway, LOS in the ICU for this patient population had been >60 days, much higher than the Centers for Medicare and Medicaid Services geometric mean of 20 to 26 days.

Key components of the pathway include changes to sedation agents and practices (eg, use of intermittent sedation and sedation interruption), an aggressive multidisciplinary daily mobility and patient ambulation program, social work and case manager involvement in the ICU setting to begin early discharge planning, formal family communication/meetings to discuss goals and plan of care with palliative care facilitators, and targeted timing for tracheostomy and percutaneous endoscopic gastrostomy placement (Fig 1).⁵

Anesthesiologist/intensivist leadership in care delivery in the ICUs enhanced compliance with such clinical care pathways, leading to reductions in variations in care and ultimately in fewer excess days. Implementation of the respiratory recovery pathway at MSH for cardiac surgery patients (Medicare Severity Diagnosis Related Group "MS-DRG" 003) resulted in a 15.6% reduction in LOS compared with preimplementation (September 2014–February 2016 compared with January 2014–August 2014), which equated to 9.4 fewer excess days per patient (Table 1). Such considerable reductions in LOS present substantial savings opportunities for the hospital stay.

As healthcare reimbursements shift toward shared savings and bundled payment models, anesthesiologist/intensivists'

integration of palliative care earlier ("upstream") in the hospital stay enhances value by increasing the quality of care provided. Involvement of the palliative care services within 48 hours of admission has been demonstrated to reduce length of stay by an average of 1.67 days compared with patients without palliative care services.⁶ Pain management is another area of opportunity for anesthesiologists to realize cost savings by increasing the quality of care. Patients who were educated about pain by the anesthesiologist, both preoperatively and postoperatively, required nearly half as many medications, reported positive outcomes and were able to be discharged earlier compared with patients who did not.⁷ Additionally, successful pain management programs enable early mobilization, which also has been demonstrated as a key factor in reducing LOS.⁸

Another opportunity for savings lies within the massive amounts of data collected by electronic health records (EHR) and medical device data collected by health delivery systems daily. A notable area for anesthesiologists to become involved is in hospital big data initiatives that are best conceptualized as efforts that bring clinical subject matter experts together with bioinformatics specialists, computer programmers, and sponsors from hospital operations to determine predictors of quality enhancement and LOS reduction efforts. Recent advances in the application of machine learning and natural language processing to large data sets have the potential to transform the delivery of day-to-day hospital care. The following are examples of situations in which anesthesiologists and intensivists may bring additional value to healthcare systems.

Using Big Data to Promote Safer Healthcare Settings

Early Detection of Patient Deterioration

The modified early warning score (MEWS) is an established tool for identifying deteriorating patients on general medicine floors based on 4 vital signs and one assessment (level of

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