

From The Editor

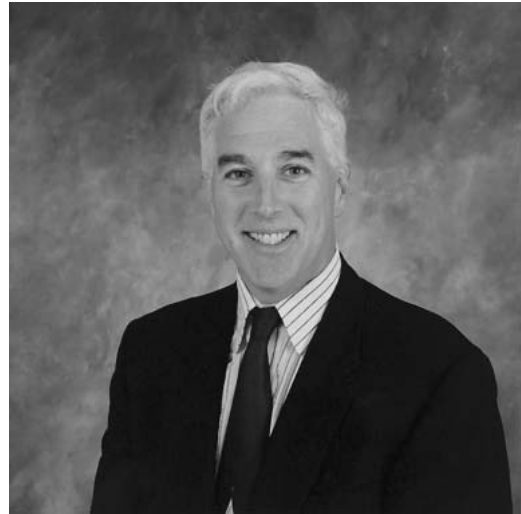
New and Improved or Old and Consistent?

Any good shopper will tell you that the label 'new and improved' when applied to a reliable product results in a switch of loyalty from the older tried and true. Advertising agencies have known how to attract consumers to the latest and greatest and use this to their client's advantage. Manufacturers profit from our desire for improvement by either attaching a higher price tag or by reducing the size or quantity of the product that we are purchasing. Indeed, outside of the digital market, very few technological advancements have been made, which have resulted in a lower cost to the consumer. The healthcare industry can arguably be called the poster child for creative pricing, which has surely been one of the factors that influence the skyrocketing costs and added to the critical situation of the entire industry.

During the past decade there have been several major advances in perfusion that have altered how clinicians approach the intervention of extracorporeal flow. The coating of circuitry with more bioinert substances is now the treatment of choice for performing cardiopulmonary bypass. The use of autotransfusion devices during cardiac surgery has been proven to reduce blood loss and reduce allogeneic transfusion rates, and is standard practice in blood conservation programs. Continuous monitoring of venous hemoglobin saturation is used in the vast majority of perfusions, and an increasing number of centers are utilizing this technology for arterial sided blood gases as well. These technologies represent just a few of the numerous ways for establishing a consistent application of perfusion with the goal of optimizing practices at the institutional level. Two questions arise that continue to receive significant debate in our field: 1) What does the future hold for advancing technologies? and 2) Is a 'best-practice' plan truly feasible?

Since the millennial celebration anyone who has attended any medical meeting has heard one or more speakers share their crystal ball predictions on the future of cardiopulmonary bypass, with an attempt to identify what new technologies are needed. In the past 20 years I have attended countless lectures where such opinions were stated and have shared a few guesses myself. The accuracy of those brave enough to take a stand was no better than those who concomitantly tried to predict the future trends of the stock market. Charles Kettering once said, "we should all be concerned about it because it's where we will have to spend the rest of our lives." The one observation that can be made is that if perfusionists take a wait and see attitude on the future, in regards to technological advancement, we will have no effect on shaping it. Which leads us to question two concerning 'best-practices'.

During the past decade the move towards surgical coronary revascularization without the use of the heart lung machine has been dramatic. This has been fueled by a small number of studies that have raised concern over the pathological impact of the heart lung machine, especially on neurocognitive recovery. No one would argue that there are risks associated with undergoing most, if not all, surgical interven-



tions, with the more critical procedures carrying the highest risk. What was unfortunate in almost all of the studies comparing the use of the 'pump' to 'off-pump' is the paucity of information concerning the methodology of how cardiopulmonary bypass was administered. In fact, I have yet to find a single study that contains a satisfactory description on bypass technique,s which would allow replication—the cornerstone of the scientific method. Would the outcomes be different if a best-practice plan for cardiopulmonary bypass was methodologically incorporated into a randomized clinical trial to off-pump techniques? No one could say for sure but I can't help but reflect on the words of Martin Sheen in a scene from the film *The American President*, when he reflected on whether or not the election results would have been different if a critical event had not occurred, and stated "I sure would have enjoyed the fight". We as perfusionists, and those concerned on the safe and effective application of cardiopulmonary bypass, should take heed and engage in activities that bring us to action.

As we read this issue of the Journal we see the application of technologies that have been 'standards' in perfusion, where the authors are seeking improvements in outcomes through the expansion of knowledge. Some of these studies are retrospective, some prospective, but all with an intent on searching for answers to improve the overall quality of perfusion. Is 'best-practice' a reality? Seems like a simple question but the answer is evasive. No, if perfusionists follow a non-evidence based, cost-driven, approach to omitting technologies and practices that have been shown to be effective. Yes, if we modify our practices and applications by incorporating methods, which have been shown make perfusion safer and more consistent. We are all striving to achieve 'best-practice' each time we walk into an operating room or an intensive care unit and apply our knowledge and our skills in patient care. What methods we use to ascertain our interventions will give us control of our future, instead of responding to crisis in a defensive mode.

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Editor