quent letter from Shiu and Rozen[4] who determined from Hager's data that no significant change in mortality was observed regardless of tidal volume once plateau pressure was less than 28 cm H_2O. Drs. Dongelmans and Schultz also referred to the article by Gajic *et al.*,[5] which was a retrospective review with plateau pressures available on only a few patients to illustrate the potential of large tidal volumes causing acute lung injury. The tidal volume range applied by ASV is essentially within the range of the lowest risk group (≤9 ml/kg) in the article by Gajic *et al.*[5] In addition, there are numerous articles in the surgical literature that indicate that at least short-term application of large tidal volume does not result in lung injury[6–10] in patients without existing lung injury. As we noted in our discussion, the upper and lower limits on ASV may need to be adjusted, and we believe that the upper limit should be set for patients with acute lung injury or acute respiratory distress syndrome at 8 ml/kg. However, the concept of ASV is sound because if practitioners are left on their own to adjust tidal volume, even centers who participated in the Acute Respiratory Distress Syndrome Network trial do not always appropriately select low tidal volumes and plateau pressures.[11]

Where we believe the concept of ASV is most critical is in the patient where in spite of tidal volume being set at 6 ml/kg, plateau pressure exceeds 28 cm H_2O. It is very clear that in these patients, the risk of increased mortality is real.[3,12] ASV does in these patients what the clinician should do and that is to reduce the tidal volume to avoid overdistension. ASV may not have the absolute limits correct, but the concept of closed loop control of ventilation is the future!

Demet S. Sulemanji, M.D., Robert M. Kacmarek, Ph.D., R.R.T.* *Massachusetts General Hospital and Harvard Medical School, Boston, Massachusetts. rkacmarek@partners.org

References

1. Sulemanji D, Marchese A, Garbarini P, Wysocki M, Kacmarek RM: Adaptive support ventilation: An appropriate mechanical ventilation strategy for acute respiratory distress syndrome? ANESTHESIOLOGY 2009; 111:863–70
2. The Acute Respiratory Distress Syndrome Network: Ventilation with lower tidal volumes as compared with traditional tidal volumes for acute lung injury and the acute respiratory distress syndrome. N Eng J Med 2000; 342: 1301–8
3. Hager DN, Fessler HE, Kaczka DW, Shanholtz CB, Fuld MK, Simon BA, Brower RG: Tidal volume delivery during high-frequency oscillatory ventilation in adults with acute respiratory distress syndrome. Crit Care Med 2007; 35:1522–9
4. Shiu KK, Rozen MJ: Is there a safe plateau pressure threshold for patients with acute lung injury and the acute respiratory distress syndrome? (letter) Am J Respir Crit Care Med 2006; 173:686
5. Gajic O, Dara SI, Mendez JL, Adesanya AO, Festic E, Caples SM, Rana R, St Sauver JL, Lymp JF, Afessa B, Hubmayr RD: Ventilator-associated lung injury in patients without acute lung injury at the onset of mechanical ventilation. Crit Care Med 2004; 32:1817–24
6. Wrigge H, Uhlig U, Baumgarten G, Menzenbach J, Zinserling J, Ernst M, Drömann D, Welz A, Uhlig S, Putensen C: Mechanical ventilation strategies and inflammatory responses to cardiac surgery: A prospective randomized clinical trial. Intensive Care Med 2005; 31:1379–87
7. Wrigge H, Uhlig U, Zinserling J, Behrends-Callsen E, Ottersbach G, Fischer M, Uhlig S, Putensen C: The effects of different ventilatory settings on pulmonary and systemic inflammatory responses during major surgery. Anesth Analg 2004; 98:775–81
8. Koner O, Celebi S, Balci H, Cetin G, Karaoglu K, Cakar N: Effects of protective and conventional mechanical ventilation on pulmonary function and systemic cytokine release after cardiopulmonary bypass. Intensive Care Med 2004; 30:620–6
9. Wrigge H, Zinserling J, Stüber F, von Spiegel T, Hering R, Wetegrove S, Hoeft A, Putensen C: Effects of mechanical ventilation on release of cytokines into systemic circulation in patients with normal pulmonary function. ANESTHESIOLOGY 2000; 93:1413–7
10. Lee PC, Helsmoortel CM, Cohn SM, Fink MP: Are low tidal volumes safe? Chest 1990; 97:430–4
11. Kahn JM, Rubenfeld GD: Translating evidence into practice in the intensive care unit: The need for a systems based approach. J Crit Care 2005; 20:204–6
12. Petrucci N, Iacovelli W: Ventilation with lower tidal volumes *versus* traditional tidal volumes in adults for acute lung injury and acute respiratory distress syndrome. Cochrane Database Syst Rev 2003; 3:CD003844

(Accepted for publication January 26, 2010.)

Low-lying Fruit or the Wrong Tree?

To the Editor:

I was intrigued by the use of the metaphor "Anesthesia's Low-Lying Fruit" by Orkin and Duncan[1] in their Editorial View entitled "Substrate for Healthcare Reform: Anesthesia's Low-Lying Fruit." I believe that it refers to the absence of data showing a major benefit conferred by anesthesiologists providing sedation for colonoscopy compared with other personnel using older drugs. The study for which the editorial was written, Alharbi *et al.*,[2] did not attempt to look for any benefits (or harms) from anesthesiologist involvement in colonoscopy. That study looked strictly at the demographics of the providers of sedation for outpatient colonoscopy. The absence of documented benefits presumably provides the low-lying fruit for healthcare benefit czars to pluck. Orkin and Duncan state that "Anesthesiologist involvement in colonoscopy sedation in the absence of medical indication . . . may be one vignette among myriad throughout United States health care in which low-benefit services and procedures result in disproportionate expenditures."

One place to start looking for benefits (or harms), rather than making assumptions from untested hypotheses, might be to ask the patients. Could a randomized controlled trial that compared midazolam and narcotic administered by registered nurses to the addition of propofol to that drug regimen by an anesthesiologist be performed? If such a trial included patient satisfaction as an outcome benefit, I will wager

The CNY Anesthesia Group, PC (Syracuse, New York), in which the author is a partner, receives remuneration for providing monitored anesthesia care for both colonoscopy and cataract surgery, as well as for all other forms of anesthesia for a myriad of operations.

it would be higher with propofol. As would gastroenterologist and nursing personnel satisfaction because of increased throughput in the facility and less struggling with patients insufficiently sedated during the procedure who then sleep for hours afterward. I think only those who pay for anesthesiologists' services might be less satisfied.

To carry Orkin and Duncan's metaphor along further, to save money, why not instead prune anesthesia services from cataract surgery performed with topical anesthesia? That procedure seems to me to be less stressful than teeth cleaning by a dental hygienist. Cataract-induced discomfort is far under that of a colonoscopy. Or, as one patient told me: "I've had more painful haircuts than that cataract operation."

John I. Gerson, M.D., Crouse Hospital, Syracuse, New York. jgerson@twcny.rr.com

References

1. Orkin F, Duncan P: Substrate for healthcare reform: Anesthesia's low-lying fruit. ANESTHESIOLOGY 2009; 111:697–8
2. Alharbi O, Rabeneck L, Paszat LF, Wijeysundera DN, Sutradhar R, Yun I, Vinden CM, Tinmouth J: A population-based analysis of outpatient colonoscopy in adults assisted by an anesthesiologist. ANESTHESIOLOGY 2009; 111:734–40

(Accepted for publication January 26, 2010.)

In Reply:

Dr. Gerson raises timely issues: there may be alternative bases on which to support the provision of a given healthcare service, and people may differ in how they value different services. Certainly, enhanced patient satisfaction, among a wider set of criteria, could be used to support an expansion of healthcare services, such as anesthesiologist involvement in colonoscopy sedation, as he suggests.

Although the demand for services is infinite, societal resources are finite, if not overstretched. Budgetary limitations in every country prompt difficult choices about which services to provide. Decisions principally reflect judgments about medical necessity, generally based on demonstrated benefit (*e.g.*, efficacy and effectiveness) and, increasingly, perceived value (*i.e.*, cost effectiveness) in effecting population health. Dr. Gerson perhaps unwittingly acknowledges this critical point when he notes, "I think only those who pay for anesthesiologists' services [for colonoscopy sedation] might be less satisfied."

Underlying the urgency of U.S. healthcare reform is the need to increase value in our feast-and-famine healthcare system; although first in per-capita healthcare spending, we have mediocre comparative population health rankings that have declined over three decades[1]: one-sixth of our population without health insurance, and uncontrolled healthcare costs that are an important factor in personal, corporate, and governmental bankruptcies. The lack of association between anesthesiologist involvement in colonoscopy sedation in the Canadian province of Ontario and patient acuity in the study by Alharbi *et al.*[2] indicates that the service is not a medical necessity and, thus, has low value. As we noted in our editorial,[3] fragmentary evidence suggests that the same phenomenon prevails in the United States. Hence, we remain confident that anesthesiologist involvement in colonoscopy sedation in the absence of medical indication (*e.g.*, severe comorbidity) is a low-value service that is ripe for pruning as healthcare reform progresses.

Fredrick K. Orkin, M.D., M.B.A., S.M.,* Peter G. Duncan, M.D., F.R.C.P.C. *Yale University School of Medicine, New Haven, Connecticut. fred.orkin68@post.harvard.edu

References

1. Murray CJL, Frenk J: Ranking 37th—measuring the performance of the U.S. Health Care System. N Engl J Med 2010; 362:98–9
2. Alharbi O, Rabeneck L, Paszat LF, Wijeysundera DN, Sutradhar R, Yun L, Viden CM, Tinmouth J: A population-based analysis of outpatient colonoscopy in adults assisted by an anesthesiologist. ANESTHESIOLOGY 2009; 111:734–40
3. Orkin FK, Duncan PG: Substrate for healthcare reform: Anesthesia's low-lying fruit. ANESTHESIOLOGY 2009; 111:697–8

(Accepted for publication January 26, 2010.)