United States. Their approach is interesting. Rather than guesstimate numbers to plug into their equations, they calculate a broad range of figures over a wide spectrum of possible results. They show considerable restraint by adopting only the most conservative “worst-case” estimates of potential costs and benefits. They appear to have bent over backward to anticipate and forestall potential criticism from opponents of LC screening. Their estimates are so pessimistic, in fact, that a separate economic analysis based on more optimistic cost and cost-effectiveness projections will be needed. The take-home point from their analysis, however, is very compelling. Even when one assumes worst-case results, LDCT should prove to be cost-effective. There is a very real possibility that LC screening, despite a high initial cost, can save money as well as lives. This possibility must be investigated immediately in carefully designed trials so that further millions of people need not suffer and die.

Where will the money to pay for screening trials come from? Medicare, Medicaid, managed-care companies, and health insurance companies will certainly not pay until data, public opinion, or both compel them to. Accordingly, only those who can afford to pay out of pocket can participate. One obvious source is funding from the Master Settlement Agreement between state attorneys general and the tobacco industry, but most of the $200 billion-plus is currently spent on pet political projects unrelated to tobacco control.10 In Los Angeles, the money is spent paving sidewalks. A second potential source is from a Justice Department RICO investigation of the tobacco industry that was initiated during the Clinton years, currently languishing under the Bush administration. Another obvious source of funding for LC screening is from class action lawsuits against the industry that is responsible for causing the disease through its premeditated, deceptive marketing of an addictive, carcinogenic product. Tobacco industry expert witnesses were recently successful in convincing a West Virginia jury in the first such trial that LC screening is not just ineffective, but is also dangerous.11

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References

Ventilator-Associated Pneumonia and Surgical Patients

I suspect that many intensivists caring for patients with ventilator-associated pneumonia (VAP) would assume that patients with polymicrobial infections had worse outcomes, had a greater chance for inadequate empiric coverage, were more likely to have resistant organisms, etc. However, in the study by Combes et al (see page 1618), although almost half of their patients had polymicrobial VAP, no difference in outcomes was observed. The authors
correctly point out that this may be due to the manner in which these patients arrived to them (ie, most were receiving mechanical ventilation at hospital admission, had significant underlying disease, and, most importantly, many were receiving antibiotic therapy at the time of diagnosis). Thus, the similar outcomes for patients with monomicrobial and polymicrobial pneumonia are not so surprisingly.

What struck me in reviewing this article was how little attention surgeons pay to the problem of VAP in our patients. The investigative group from hôpital Bichat (Paris, France) as well as several others\(^1\)\(^4\) have provided a systematic inquiry into the complex problem of VAP. Most of these studies have focused on medical or mixed populations of critically ill patients and in the process have contributed to our knowledge of VAP in trauma and surgical patients. By comparison, VAP is an enormous problem in trauma patients requiring mechanical ventilation, especially if this condition is combined with a neurologic injury. The incidence of VAP may approach 50 to 80% in certain populations.\(^5\)\(^6\) Despite this, only a few surgical investigators\(^5\)\(^8\) have shown any interest in this problem. The proceedings of the first ever Pneumonia Summit held by surgeons were published in 2000.\(^9\) I hope that this modest attempt to call attention to the problem of VAP in surgical patients and trauma patients will lead to a thoughtful investigation similar to the one provided by our medical and pulmonary colleagues.

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Cytokines, Genes, and ARDS

The leading cause of death in patients with ARDS is multiorgan failure (MOF) caused by a systemic inflammatory response. This finding has led to a great evolution in our understanding of ARDS since it was first reported in 1967.\(^1\) We have struggled over the last number of years to find the molecular basis for the changes we see in the gross pathology of the lung and other end organs.

Many investigators have begun to develop the relationship between cytokine modulation and cytokine levels in the physiology of ARDS and how this syndrome relates to the systemic inflammatory response and end-organ dysfunction. Donnelly and colleagues\(^2\) found that patients at risk for ARDS who had higher levels of interleukin (IL)-8 in BAL fluid subsequently progressed to ARDS, thus providing a potential early marker for the development of this syndrome and some clues as to pathogenesis. The clinical importance of this developing understanding of cytokine modulation has led to studies looking at how the simplest treatment for respiratory failure and ARDS, mechanical ventilation, contributes to MOF through the spread of inflammatory mediators.\(^3\)\(^4\)

In this issue of CHEST (see page 1716), Takatsuka et al report how certain patients who are positive for human leukocyte antigen (HLA)-B51 or B-52 respond to the administration of granulocyte colony-stimulating factor (G-CSF). These patients showed significant increases in tumor necrosis factor (TNF)-\(\alpha\) and IL-8 at the onset of ARDS. This data differed from a large group of patients who received G-CSF and did not have respiratory dysfunction develop, but had neither HLA-B51 or B52 antigens. It points out that some groups of patients may be genetically primed to have a multiplied response develop to a trigger, and thus release increased levels of cytokines than other patients.

Work from Moine et al\(^5\) showed that patients with ARDS had increased activation of the transcriptional regulatory factor nuclear factor-kB in alveolar macrophages. This work suggests a transcriptional mech-