we specifically mentioned in the Methods section of the article that "all patients received adequate nonsurgical treatment for neurologic and associated medical conditions (IV fluids, mannitol, antibiotics, bronchodilators, diuretics, etc.)."[1]

We did not create bias by "excluding all patients that might have been transferred to the ICU or to surgery" from the study. Rather, the patients that had actually been transferred to the ICU ($n = 0$) and surgery ($n < 5$) were excluded. Thus no bias was created, because the study refers only to patients who were not candidates for surgery. Of course, patients whose medical condition could be improved by surgery were not denied proper treatment. Some hemorrhagic stroke patients were admitted to neurosurgery from the emergency room, as we stated in the Methods section and were thus not included in the study to begin with.

We do agree that elective intubation for airway protection in unconscious stroke patients may spare some of them acute respiratory insufficiency and thus reduce overall mortality. It should be remembered though, that our study retrospectively encompassed the period between 1980 and 1990 and did not represent the current clinical practice in our institution.

We also agree that the 29% mortality in neuromuscular patients with acute respiratory failure is high. Nevertheless, it represents a "real life" situation in a busy hospital, where critical intensive care resources are scarce and not always available to all patients who need them.

Grotta et al.[7] reported 20 carotid stroke patients who were intubated and ventilated for deterioration judged to be due to cerebral edema, who were selected from 250 consecutive stroke patients. The authors excluded from analysis all patients in whom mechanical ventilation had been needed for other reasons. Of the 20 patients, 14 had died during hospitalization, two had survived but died a few months later in nursing homes, and only four patients led semi-independent or independent lives (one of them after hemicraniectomy); in only three survivors was the recovery of such a degree that their caregivers would have wished to be intubated themselves under the same situation. We found no worthwhile survival in our series of ventilated stroke patients. An important difference between the two studies lies in the indication for ventilation. Grotta et al. included in their analysis only patients "electively" intubated in view of their neurologic deterioration, while our series included all patients in whom respiratory insufficiency developed. Obviously, those were different groups with different potential outcome. We have evaluated the outcome of patients who needed respiratory support, rather than the problematic issue of the possible benefits of hyperventilating patients in a deteriorating neurologic state.

In an ideal situation, all patients with acute respiratory failure should perhaps be treated in an intensive care facility, regardless of underlying disease; no one can claim that all of them are indeed so treated. Therefore, in spite of whatever methodologic flaws there might be in our study, the simple fact remains valid: stroke patients with acute respiratory failure who are not candidates for surgical intervention have a very poor overall prognosis; thus limited resources should be used reluctantly. Although major ethical issues are raised by the last statement, they should be addressed face-on and not brushed off by methodologic criticism.

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EMFs and Alzheimer's disease

To the Editor: Sobel et al.[1] have extended their earlier work,[2] and their results comport with the findings we recently reported, suggesting that persons in occupations with exposure to electromagnetic fields (EMFs) may have an increased risk for developing Alzheimer's disease (AD) (ICD 331.0).[3] Generally, our data, based on death certificates from 27 states, are consistent with the findings of Sobel et al.[1] Due to space, we did not identify all the occupations that have statistically significantly elevated proportionate mortality ratios (PMRs). For some occupations with potential EMF exposure, we found elevated PMRs for AD, including electrical and electronic engineers (white men); electrical and electronic technicians (white men); and electricians, power transmitter installers, and broadcast operators (black men). We also studied other neurodegenerative diseases and observed increased PMRs for presenile dementia for supervisory electricians and power transmission installers (white men) and increased PMRs for motor neuron disease for electrical and electronic engineers (white men), miscellaneous electrical and electronic equipment repairers (white men), airline pilots and navigators (white men), and power plant operators (white men). Regarding the finding by Sobel et al. that "seamstresses" were at highest risk for developing AD, we found statistically significantly increased PMRs for presenile dementia (ICD 290.1) in the occupational categories of "precision textile, apparel and furnishing machine workers" and "miscellaneous textile machine operators." We did not observe increased ratios for AD in these occupational categories.

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Reply from the Authors: We are clearly encouraged by the findings of Schulte et al. concerning AD and motor neuron disease (MND) and occupational exposure to EMFs.

In our recent *Neurology* article,[1] we were not able to reference the September 1996 Schulte et al.[3] paper because we learned of its existence too late. Likewise, Schulte et al.[3] were unaware of our 1995 paper and our earlier abstract on the possible relationship between AD and likely occupational exposure to EMFs.[2,4] We think that this indicates the importance of improving informal communicative efforts within the biomedical research community.

There is considerable underreporting and probably misreporting of AD on death certificates. There is also considerable underreporting of the usual or primary occupations of individuals who have already retired. (Schulte et al.[3] found only 63,825 death certificates that mentioned AD among the several million individuals who died over the 10-year study period in the 27 states investigated, despite that AD is one of the nation's leading causes of death.) In addition, EMF exposure among workers categorized according to an occupational classification scheme is certainly not uniform. In such studies these problems are unavoidable and likely cause nondifferential errors, which bias the PMR estimators toward 1. Thus, we can speculate that the true PMRs for EMF-exposed occupations are actually larger.

Considering the 10 highest ranked occupational categories in each of the four race-gender categories[3] together, perhaps 12 (30%) occupational categories are likely to have elevated EMF exposure. The comparable figure for presenile dementia, most probably AD, is 10 (25%) of 40 occupational categories. These figures are surely higher than would be expected from chance. We note that three of the four occupational titles mentioned in Schulte and Burnett's letter as having "statistically significantly elevated" PMRs with reference to AD do not appear in their article.[3] It is unfortunate that space limitations caused these deletions, because inclusion would have made their conclusion more compelling.

With reference to seamstresses and, in fact, other occupations with EMF exposure, we note that it is likely that a high percent-

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