behavior by health care providers that could be harmful to patients.

The authors state in their abstract, "Emergency endotracheal intubation appears to contribute to the overall incidence of nosocomial pneumonia." In the text they elaborate, "The extent to which emergency intubations, an increasingly common procedure, contribute to the overall incidence of nosocomial pneumonia is unknown. At our 800-bed institution, approximately 15 to 20 patients require emergency or urgent intubation each month. If 45% of these patients develop pneumonia, they constitute a large population of individuals not previously recognized as being at increased risk of pneumonia."

From these statements one might conclude that whenever emergency endotracheal intubation is contemplated, it should be considered relative to an increased risk of pneumonia. What is the evidence? The authors showed that 45% of all patients who required emergency endotracheal intubation during a given time in their hospital developed either definite or probable pneumonia within three days of intubation. *There was no control* group comprised of patients with similar characteristics but whose tracheas were not intubated. Yet the authors attributed the 45% incidence of post-intubation pneumonia to the intubation procedure. Their own data showed that their patients were highly susceptible to pneumonia, 31% of whom had antecedent respiratory infections. The critical question is whether the patients would have (survived and) contracted pneumonia if their tracheas had not been intubated.

Our principal concern is that poorly informed persons, fearing the 45% incidence of pneumonia attributed by the authors to the intubation procedure, might inappropriately withhold emergency endotracheal intubation from patients for whom the procedure might be helpful or even life saving. The high incidence of pneumonia in patients undergoing emergency endotracheal intubation is probably related to the fact that these patients are at high risk for nosocomial pneumonia by virtue of pre-existing acute or chronic respiratory disease. Additionally, endotracheal intubation may contribute to the development of pneumonia simply by prolonging patients' lives long enough for them to develop pneumonia. Regardless of why the pneumonia developed, mortality in this study was the same after emergency endotracheal intubation whether the patient developed pneumonia or not.

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Dr. Lowy and co-authors respond to Dr. Gabel and Ms. Pfaff:

Dr. Gabel and Ms. Pfaff raise the issue that some individuals might withhold emergency intubation from patients because of the high risk of pneumonia as a result of our paper. This was not our intent. As stated in the text, the patients included were those who "required" emergency intubation. There was no option in these cases. For the same reason, there was no control group.

We attempted to address the issue of whether the pneumonia *was* procedure-related by determining the overall incidence of pneumonia among patients followed for 14 days. When pneumonia developed, 87.5% of patients developed it within three days of intubation, suggesting that the pneumonia was procedure related. In the discussion section we also note that it is unclear whether aspiration occurs as a result of the intubation process or the respiratory or cardiac arrest. It was certainly not our intent to discourage intubation in patients who require it. Rather we hoped to identify a previously unrecognized group who appear to be at risk for developing nosocomial pneumonia.

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Laboratory Directors Endorse CDC Recommendations

To the Editor:

A revision of the Recommendations for Prevention of HIV Transmission in Health-Care Settings was issued by the Centers for Disease Control (CDC) on August 21, 1987. According to the recommendations, the CDC advises precautions for all clinical specimens to prevent the risk of human immunodeficiency virus (HIV) fluid infection. Recommendations are specifically stated for laboratories, autopsy or mortician services, dentistry, invasive procedures, dialysis, and related health care services.

The CDC recommends that laboratories continue to employ those standard safety and barrier procedures already well known (ie, gloves, protective eyewear, laboratory coat, face mask, etc). None of these protective items should be worn outside the laboratory. Biological safety cabinets must be used for procedures that are likely to create aerosols. In addition, the use of syringes and needles should be limited to situations where no alternative exists; avoid mouth pipetting by using mechanical devices; use well-constructed containers with secure lids to prevent leakage of fluids during transport; and decontaminate work bench and laboratory equipment after liquid spills or after completion of a laboratory procedure.

The Association of State and Territorial Public Health Laboratory Directors endorses the CDC recommendations for the protection of health care workers, particularly laboratory workers, from infection by blood-borne agents. Although CDC guidelines are voluntary and relate primarily to human immunodeficiency virus, the employer or director of a laboratory has an obligation to provide orientation and continuing education for all employees, to provide equipment and supplies to minimize the risk of infection, and to monitor employee compliance with the safety recommendations. An excellent additional laboratory guideline is the Human T-Lymphotropic Virus Type III/Lymphadenopathy-Associated Virus Agent Summary Statement