RESPIRATORY SUPPORT MANAGEMENT

NONINVASIVE VENTILATION

Children with acute respiratory failure without cardio-
 pulmonary arrest, shock, the inability to protect the air-
 way, or severe hypoxemia (defined as the requirement
 for a fractional concentration of inspired oxygen >50%
 to achieve an oxyhemoglobin saturation >90%) were
 considered candidates for noninvasive ventilation. Non-
 invasive ventilation was provided as continuous positive
 airway pressure or as continuous positive airway pres-
 sure with pressure support using various devices. Intol-
 erance of noninvasive ventilation, persistent respiratory
 distress, or progression of gas exchange abnormalities
 during noninvasive ventilation mandated tracheal intu-
 bation and invasive mechanical ventilation.

INVASIVE MECHANICAL VENTILATORY
 STRATEGIES, EXTUBATION, AND DISCHARGE
 FROM THE PEDIATRIC INTENSIVE CARE UNIT

Patients were treated with either pressure-limited or
 volume-limited synchronized intermittent mandatory
 ventilation using a lung-protective strategy (goals: tidal
 volume <8 mL/kg, peak airway pressure limited to <35
 cm H2O, fractional concentration of inspired oxygen
 <60%, with permissive hypercapnia) for all those with
 acute lung injury or acute respiratory distress syndrome.
 The New York–Presbyterian Hospital/Morgan Stanley
 Children’s Hospital pediatric intensive care unit used the
 Puritan Bennett 840 (Puritan Bennett, Pleasanton, Cali-
 fornia), while the Servo-i (Maquet Critical Care, Solina,
 Sweden) was used at the New York–Presbyterian
 Hospital/Weill Cornell Medical College pediatric intensi-
 ve care unit during the study period. If adequate oxy-
 genation with a lung-protective strategy using conven-
 tional mechanical ventilation was deemed not possible
 by the pediatric intensive care unit attending physician,
 high-frequency oscillatory ventilation was used.
 Mechanical ventilation was weaned rapidly to extuba-
 tion whenever possible at the discretion of the attending
 physician. Discharge from the pediatric intensive care
 unit occurred within 24 hours following resolution of
 the need for invasive mechanical ventilatory support, in
 the absence of other acute organ failure.