Introduction:
Evidence is mixed as to whether acute respiratory distress syndrome (ARDS) is independently associated with mortality after controlling for baseline severity of illness, particularly in patients with sepsis.

Methods:
This was an observational study comparing mortality rates of septic patients with and without ARDS. Subjects for the present study were enrolled in 3 ongoing prospective cohorts of critically ill patients hospitalized in medical intensive care unit (ICU) in the United States or South Korea. ARDS was defined using the Berlin definition for cases after 2012 and the American–European Consensus Conference definition for cases before 2012. Sepsis was defined using the Sepsis-3 definition. Baseline severity of illness was assessed using a modified sequential organ failure assessment (SOFA) after exclusion of the respiratory component. The primary outcome was in-hospital mortality.

Results:
Of the 1024 critically ill patients enrolled in the 3 cohorts, 771 (75.3%) had sepsis and comprised the population of the present study. Of the 771 septic patients, 166 (21.5%) had ARDS. Patients with versus without ARDS had higher SOFA score; both total (median 14 vs 11; P<0.001) and modified (11 vs 10; P<0.001). The unadjusted mortality of septic patients with ARDS was higher than septic patients without ARDS (46.7% vs 22.4%; P<0.001). After controlling for baseline modified SOFA score, both moderate and severe ARDS remained significant predictors for in-hospital mortality [odds ratio (OR) 2.90; 95% confidence intervals (CI) 1.66-5.03; P<0.001 and OR 3.91; 95% CI 2.33-6.58; P<0.001, respectively]. In contrast, after controlling for baseline modified SOFA score, mild ARDS was not associated with in-hospital mortality (OR 1.04; 95% CI 0.40-2.39; P=0.94).

Conclusion:
Among critically ill patients with sepsis, moderate and severe, but not mild, ARDS are associated with mortality after controlling for baseline severity of illness.