

# Study identifies reasons for higher rate of severe sepsis among black patients

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A greater frequency of severe sepsis among black patients is attributable to higher rates of infection and higher risks of organ dysfunction than what white patients experience, according to a study in the June 23/30 issue of *JAMA*.

Severe [sepsis](#), defined as infection complicated by acute organ dysfunction, affects more than 750,000 U.S. residents each year, with a hospital mortality of 28 percent, and occurs more frequently and leads to more deaths in black patients than in white patients. "However, it is not known whether these disparities occur because of differences in susceptibility to infection or in the risk of developing acute organ dysfunction once infection has occurred. This distinction is important for developing interventions to reduce disparities," the authors write.

Florian B. Mayr, M.D., M.P.H., of the University of Pittsburgh, and colleagues conducted a study to determine the extent to which previously reported racial differences in severe sepsis incidence were due to a higher infection rate or a higher risk of acute organ dysfunction. The study included an analysis of infection-related hospitalizations from the 2005 hospital discharge data of 7 U.S. states and infection-related emergency department visits from the 2003-2007 National Hospital Ambulatory Care Survey. Of 8,661,227 non-childbirth-related discharges, 2,261,857 were associated with an infection, and of these, 381,787 (16.8 percent) had severe sepsis.

The researchers found that black patients had a 67 percent higher severe sepsis hospitalization rate than did white patients (9.4 vs. 5.6 per 1000 population). "The higher severe sepsis rate was explained by both a higher infection rate in black patients (47.3 vs. 34.0 per 1000 population) and a higher risk of developing acute organ dysfunction," the authors write.

Also, infection and severe sepsis mortality rates

were 1.5-fold and 1.8-fold higher in black than in white patients.

Analysis indicated that higher hospital infection rates among black patients were not because they were more likely to be admitted with an infection or that black patients were more likely to receive care at hospitals with higher recorded infection rates than white patients. The researchers also found that racial disparities in infection and severe sepsis incidence and [mortality rates](#) were largest among younger adults. The proportion of invasive pneumococcal disease occurring in adults less than 65 years of age was 73.9 percent among black patients vs. 44.5 percent among white patients.

"In conclusion, higher severe sepsis rates among black patients are explained by both higher infection-related hospitalization rates and a higher risk of acute organ dysfunction. Reducing these racial disparities will require community-based interventions, such as vaccination, improved management of chronic diseases, and hospital-based interventions targeted especially to hospitals that serve large proportions of black patients. Current guidelines for pneumococcal vaccination, one of the largest and most effective strategies to prevent severe sepsis, do not target up to 25 percent of cases among blacks," the authors write.

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