**Introduction:**
Association of hospital volume or rapid response system (RRS) call rate with altered clinical outcomes of RRS patients was not fully investigated. We tested a hypothesis that hospital bed number and RRS call rates are associated with altered clinical outcomes of patients with RRSs.

**Methods:**
We performed a retrospective analysis of a large RRS cohort, In-Hospital Emergency Registry in Japan (IHER-J), which is a data registry of RRSs conducted by the Japanese Society of Intensive Care Medicine and the Japanese Society for Emergency Medicine. This study enrolled 4,818 patients in 24 hospitals from April 2014 to March 2018. Primary outcome variable was short-term serious outcome defined as unplanned intensive care unit (ICU) admission after RRS activation, or death at the scene where RRS care was initiated.

**Results:**
There was no significant correlation between the number of hospital bed and RRS call rate ($R^2=0.0047, P=0.75$). In the primary analysis of the present study using a multivariate analysis adjusting potential confounding factors, higher RRS call rate was significantly associated with decreased short-term serious outcome ($P=0.0010$, OR 0.94, 95% CI [0.91-0.98]), but there was no significant association of hospital volume ($P=0.97$). In the secondary analysis of the study, there was a non-significant trend of increased cardiac arrest on arrival at the location of the RRS provider at large-volume hospitals ($P=0.084$, OR 1.16, 95% CI 0.98-1.38) but there was no significant association of the RRS call rate with the incidence of cardiac arrest ($P=0.60$). Large-volume hospitals had a significantly higher 1-month mortality rate ($P=0.0040$, OR 1.10, 95% CI 1.03-1.18) but there was no significant association of RRS call rate with 1-month mortality rate ($P=0.76$).

**Conclusion:**
Hospitals with increased RRS call rates had significantly decreased adverse short-term outcomes in patients who had RRS activations. Patients who had RRS activations at large-volume hospitals had an increased 1-month mortality rate.