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## Heart Failure and Cardiomyopathies

### EFFECT OF REGIONAL VARIATION OF CENTER DENSITY ON HEART TRANSPLANT RISK STRATIFICATION

Poster Contributions

Poster Hall B1

Saturday, March 14, 2015, 3:45 p.m.-4:30 p.m.

Session Title: Advances in Heart Failure Therapies: From Diuretics to VADs and Transplant

Abstract Category: 14. Heart Failure and Cardiomyopathies: Clinical

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**Background:** Variation in mortality risk between transplant listing centers should ideally be minimal. However, lack of standardized physiologic metrics for status designations may lead to significant inter-center variation within a given designation. Local competition for donor hearts may be an additional driver of this variation.

**Methods:** Patients  $\geq 18$  years of age listed for cardiac transplantation (CT) from January 2008 to June 2013 in the Organ Procurement and Transplant Network database were retrospectively analyzed. We assessed whether differences exist in wait list mortality within status designations using measures of center density (within Donor Service Area (DSA), within 500 nautical mile radius) as covariates. A competing outcomes method was used to evaluate the relative hazard of death as the primary outcome. Transplant, delisting as too ill, and recovery were competing outcomes. Analyses were adjusted for age, gender, diagnosis, device support at time of listing and transplant rate in the preceding year.

**Results:** We analyzed 15,962 CT candidates. Survival within status designations was different between centers: status 1A (log-rank p-value  $<0.0001$ ), status 1B (p-value  $<0.0001$ ) and status 2 registrants (p-value 0.0008). The mean number of centers within a DSA was 2.5 (SD 1.7) and zone A was 28.0 (SD 13.8). Center density within a DSA was not associated with differential mortality within status justifications (per 1 center increase within DSA: Status 1A HR 0.95; 95% CI 0.89-1.02; status 1B HR 1.04; 95% CI 0.99-1.09; status 2 HR 1.03; 95% CI 0.97-1.09). Zone A density was not associated with differential mortality within status justifications (Status 1A HR 1.0; 95% CI 0.99-1.01; status 1B HR 1.0; 95% CI 1.99-1.00; status 2 HR 1.0; 95% CI 0.99-1.01). DSA and zone A densities were not associated with variable mortality after adjustment.

**Conclusion:** Mortality within status designations does vary between centers, but neither DSA nor center density explained this variation. This suggests that while center level differences may be present, they are not well explained by the density of programs competing for hearts and are more likely due to other unmeasured risk factors.