

## Linked Do-Not-Resuscitate (dnr) And Do-Not-Intubate (dni) Orders And Factors Associated With Dni Orders: A Retrospective Chart Review At An Urban Tertiary Care Center

**S. Stream**<sup>1</sup>, **A. Nolan**<sup>2</sup>, **S. Kwon**<sup>2</sup>, **C. Constable**<sup>3</sup>

<sup>1</sup>NYU Medical Center, New York, NY, <sup>2</sup>NYU School of Medicine, New York, NY, <sup>3</sup>NYU Medical Center, 10014, NY

**Introduction** Code status discussions often link do-not-intubate (DNI) orders with do-not-resuscitate (DNR) orders, although cardiac arrest accounts for less than 2% of endotracheal intubations. DNR orders are more commonly implemented for older patients with more comorbid conditions regardless of the reason for hospitalization, and are associated with withholding treatments outside of the cardiac arrest setting. Given the frequent coupling of DNR and DNI orders, our hypothesis is that DNI orders may be independently associated with similar patient characteristics and treatment decisions.

**Methods** This is a retrospective review of the electronic medical record (EMR) of all patients who died on the Bellevue Hospital Medicine Service between January 2012 and December 2013 (n=197). Demographic data, comorbid conditions, and records of administering inotropes, vasopressors, or opiates during the last 3 days of life were compiled into an SPSS database. Logistic regression was used to identify demographic and medical data associated with code status.

**Results** The majority of patients with advance directives (n=153) had both DNR and DNI orders (n=84; 55%); in 86% of these cases, the orders were placed on the same date. When compared with patients with DNR orders only, patients with DNR and DNI orders had a higher median Charlson comorbidity score (OR 1.27, 95% CI 1.13-1.43); were older (OR 1.02, 95% CI 1.01-1.04); were more likely to have a malignancy (2.27, 95% CI 1.18-4.37); were more likely to be female (1.98, 95% CI 1.02-3.87); and were more likely to be uninsured (OR 5.41, 95% CI 1.90-15.40). In the last 3 days of life, they were more likely to receive morphine (2.76, 95% CI 1.43-5.33); and less likely to receive vasopressors/inotropes (10.99, 95% CI 4.83-25.00) compared to patients who were DNR only.

**Conclusions** To our knowledge, this is the first retrospective chart review documenting the association between DNR and DNI orders and identifying factors associated with DNI orders. DNR and DNI orders are more commonly linked, and implemented on the same date, suggesting that code status discussions may not highlight the inherent differences between these directives, as qualitative studies have shown. The presence of a DNI order was associated with older age, a higher Charlson comorbidity score, cancer diagnosis, and use of morphine; it was negatively associated with use of vasopressors/inotropes. We also unexpectedly found that it was associated with female sex and uninsured status. Female sex may have been a surrogate for age, as females were also older than males.

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