Characteristics Associated with In-Hospital Death among Commercially Insured Decedents with Cancer

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Authors: Gabriel A. Brooks, Sherri O. Stuver, Yichen Zhang, Stephanie Gottsch, Belen Fraile, Kristen McNiff, Anton Dodek, Joseph O. Jacobson

Presented by: Qiming (Roger) Wu, PGY2 (Reviewed on January 24, 2017)

Background: Patients with poor-prognosis often express a preference for at-home death. Two previous studies in 1993 and 2014 respectively found in-hospital death among cancer patients to be 52% and 34%. In-hospital death was associated with hematologic malignancy, black race, non-Medicare payers, and ongoing palliative chemotherapy.
Objective: To identify characteristics associated with in-hospital death
Design: Retrospective case series/searching the administrative database of Dana-Farber Cancer Institute in Boston: decedents between July 2010 and December 2013 who were at least 18, had at least two ambulatory visits for cancer care in the last six months of life and continuous primary insurance by Blue Cross/Blue Shield of Massachusetts.
Measurements: Bivariate and adjusted multivariable analyses to evaluate the association of in-hospital death with patient characteristics and end-of-life outcome measures.
Results/Conclusion: The study identified 904 decedents with a median age of 59 years at death. In-hospital death was observed in 254 patients (28%), including 110 who died in an ICU (12% of all patients or 43% of in-hospital deaths). The median length of stay for these terminal hospitalizations was 7 days (middle 50%, 4-15 days). The most common diagnoses were septicemia, respiratory failure, pneumonia, and renal failure.

Characteristics Associated with In-Hospital Death	**RR (95% CI)**
Non-enrollment in hospice	14.5 (9.81-21.4)
Hematologic malignancy, compared to solid tumors	2.51 (2.06-3.06)
Receipt of chemotherapy in the last 14 days of life	2.49 (1.92-3.23)
>1 ED visits within the last 30 days of life	2.02 (1.64-2.49)
First 6 months after diagnosis	1.41 (1.02-1.95)

No significant association was found with age, sex, marital status, race, or travel distance.

Strengths: One of few studies on this topic studying the influences of demographic and clinical factors to place of death among cancer patients

Weaknesses:
- Retrospective search with no data on time outside the hospital or end-of-life discussions
Did not assess patient preferences for place of death and implied at-home death is the best outcome for all patients
Small analytic subgroups in terms of race, age, and cancer types (eg. 7% non-white) at a single tertiary cancer center

Relevance to Palliative Care: Non-palliative physicians should recognize terminal prognosis and discuss preferences with all patients receiving treatment for advanced cancer regarding their preference for place of death and the potential benefits of continuing any aggressive treatment versus initiating hospice care. Better terminal illness understanding by patients and their care-providers may help prevent stressful ER presentations or terminal hospitalizations contradictory to patients' preferences.