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Does improving end-of-life cancer care require reforming clinical care or system capacity?

Hospital-specific analyses from the *Dartmouth Atlas of Healthcare* Project

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Support:
Robert Wood Johnson Foundation
National Institute on Aging

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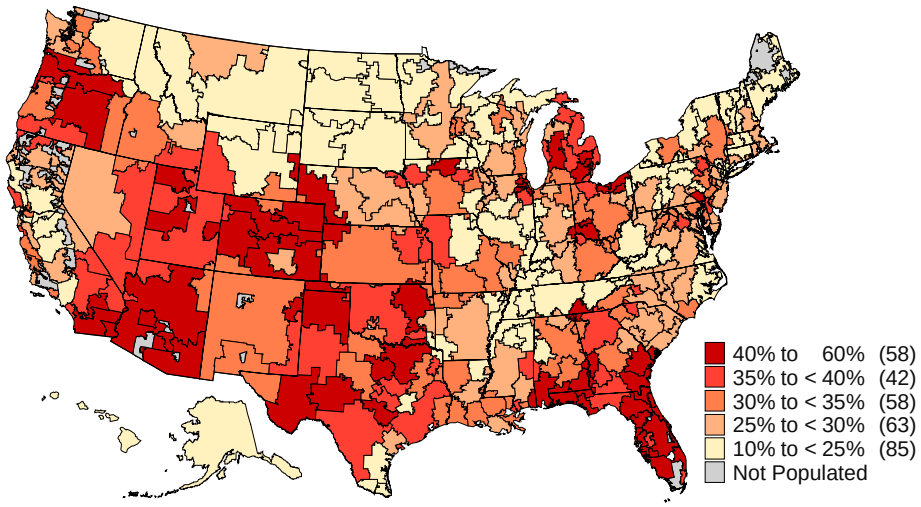
Percent of Decedents Enrolled in Hospice During the Last Six Months of Life by HRR (2001-05)



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Want to spend last days in the hospital...?

National random survey of 2,847 community dwelling Medicare beneficiaries > 65 years 2003:

	Non Hispanic White	Hispanic	Black	Other
In a hospital	8.0 (6.8-9.2)	15.2 (9.6-23.4)	17.7 (14.4-21.6)	16.3 (10.1-25.3)
In a nursing home	5.2 (4.3-6.2)	1.9 (0.5-7.3)	7.7 (5.6-10.6)	4.4 (1.6-11.0)
At home	86.9 (85.3-88.3)	82.9 (74.4-88.9)	74.6 (70.3-78.4)	79.4 (69.9-86.4)

Barnato AE, Anthony DL, Skinner J, et al. Racial and Ethnic Differences in Preferences for End-of-Life Treatment. J Gen Intern Med 2009; 24(6):695–701.

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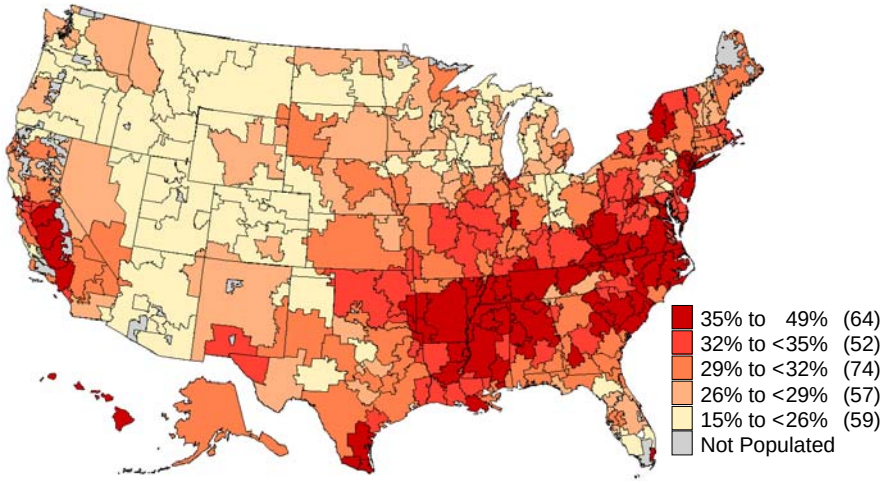
Percent of Deaths Occurring in Hospital among Chronically Ill Patients by HRR (2001-05)



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End of Life Cancer Cohorts

- 2003-07 20% age 66 – 99 who died & had a discharge or 2 clinician visits with diagnosis poor prognosis cancer in last 6 months of life.
- And who were admitted to a hospital in the last year of life.
- Patients assigned to the hospital with the majority of inpatient days.
- Adjusted for age, sex, race, cancer type, mix of other chronic disease, MHHI (ZIP), bed supply (HSA), hospital for profit status.
- Stratified by hospital type: NCI cancer center, AMC, community hospital.
- GENMOD multilevel models with patient as the unit of analysis.

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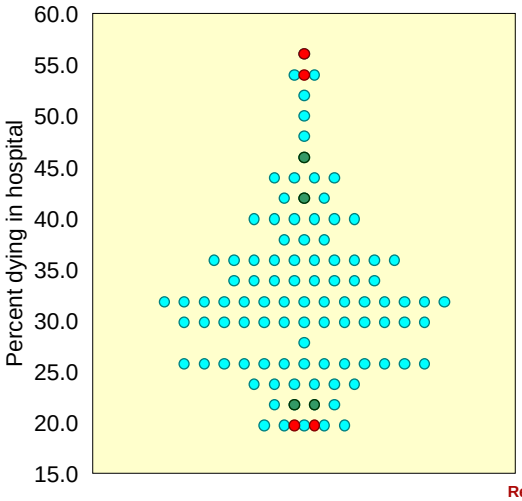
Percent dying in hospital

NCI Cancer Centers and Academic Medical Centers (non-NCI)



Westchester Medical Center	57.1
New York Methodist Hospital	54.9
New York-Presbyterian Hospital	46.2
Robert Wood Johnson Univ, NJ	42.4
Univ of Wisconsin Hosp & Clinics	22.5
Univ of Washington Med Ctr	21.3
St. Joseph's Med Ctr, Phoenix	18.9
Evanston Northwestern	18.7

Green dots = highest & lowest NCI cancer centers
Red dots = highest & lowest academic medical centers

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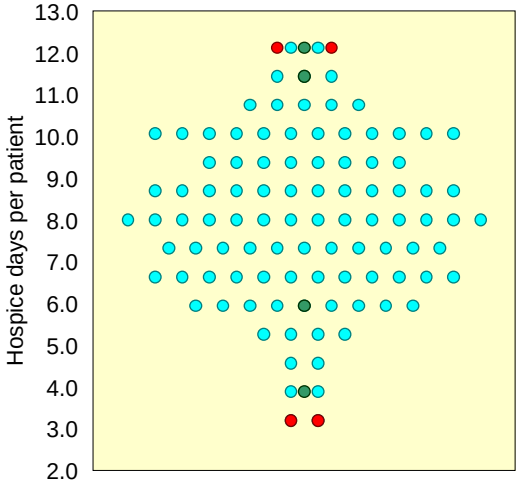
Hospice days in last month of life

NCI Cancer Centers and Academic Medical Centers (non-NCI)



University Med Ctr-Lubbock	12.5
Univ of Iowa Hosp & Clinics	12.4
MUSC Medical Center	12.0
University of Alabama Hospital	11.5
City of Hope National Med Ctr	6.0
New York-Presbyterian Hospital	3.7
Montefiore Medical Center	3.0
Westchester Medical Center	2.9

Green dots = highest & lowest NCI cancer centers
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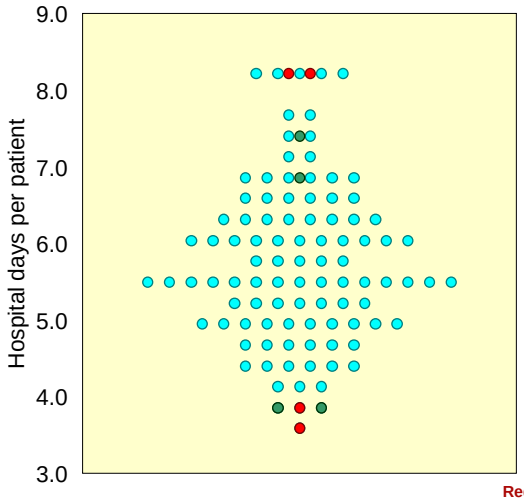
Hospital days during last month of life

NCI Cancer Centers and Academic Medical Centers (non-NCI)



New York Methodist Hospital	8.4
Westchester Medical Center	8.4
New York-Presbyterian Hospital	7.3
Robert Wood Johnson Univ	6.8
Univ of Washington Med Ctr	3.9
St. Joseph Mercy Hospital	3.9
Univ of Iowa Hosp & Clinics	3.8
Univ of California Davis Med Ctr	3.5

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Red dots = highest & lowest academic medical centers

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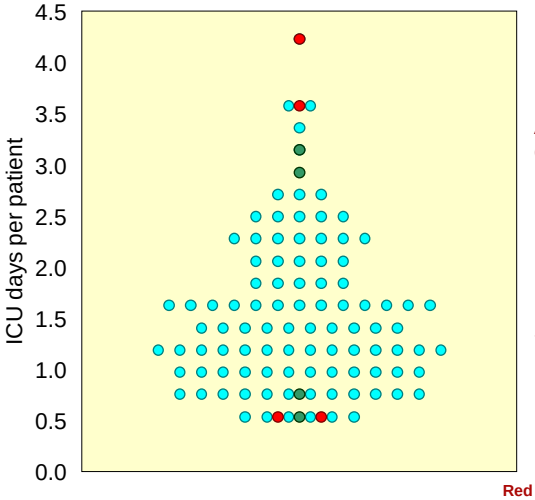
ICU days during last month of life

NCI Cancer Centers and Academic Medical Centers (non-NCI)



Allegheny General Hospital	4.3
Cooper Health System	3.7
Nebraska Medical Center	3.1
UCLA Medical Center	2.9
Dartmouth-Hitchcock Med Ctr	0.7
Memorial Sloan-Kettering	0.6
St. Francis Hospital & Med Ctr	0.4
Fletcher Allen Health Care	0.4

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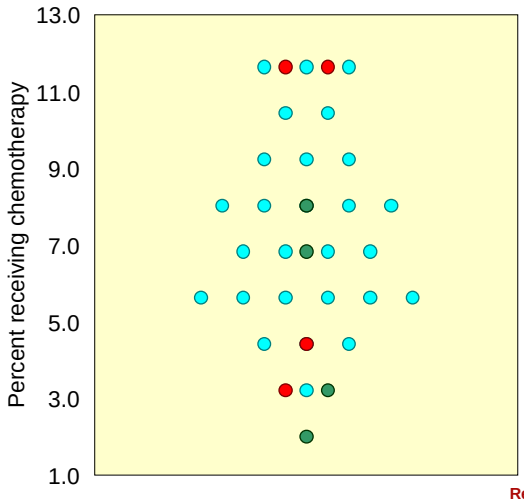
Percent receiving chemotherapy during last two weeks of life

NCI Cancer Centers and Academic Medical Centers (non-NCI)



Cedars-Sinai Medical Center	12.3
Lenox Hill Hospital	11.6
Univ of Tennessee Med Ctr	8.3
Robert Wood Johnson Univ	6.9
Carolinas Medical Center	4.7
Hartford Hospital	3.5
UPMC Presbyterian Shadyside	3.3
Memorial Sloan-Kettering	1.4

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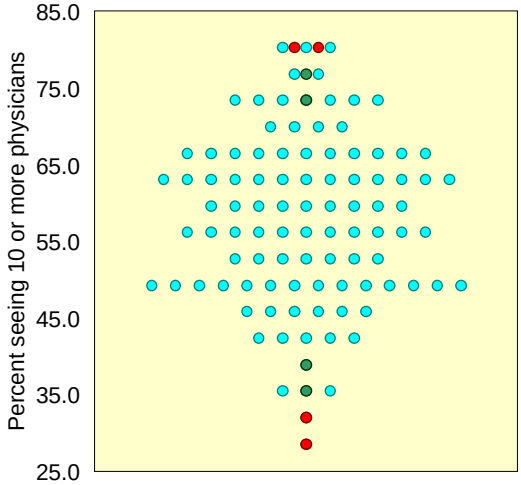
Percent of Patients Seeing 10 or More Different Physicians in the Last 6 Months of Life

NCI Cancer Centers and Academic Medical Centers (non-NCI)



North Shore University Hospital	82.0
Allegheny General Hospital	79.4
Memorial Sloan-Kettering	75.6
MedStar-Georgetown Med Ctr	72.7
University of Alabama Hospital	38.5
Univ of Wisconsin Hosp & Clinics	34.7
University of Kentucky Hospital	33.6
Oklahoma University Med Ctr	26.9

Green dots = highest & lowest NCI cancer centers
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End-of-life care may reflect broader problems in health care systems

- Uneven quality.
- An emphasis on subspecialty care, imaging, tests, procedures, with the goal of curing disease.
- An assumption that more care, and more costly is better.
- Care decisions dominated by the values of health care professionals.
- Who is asking and listening about patient and family preferences.

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Changing end-of-life care may require macro system reforms

From the SUPPORT study...

- Most patients expressed a preference to die at home.
- Most died in the hospital. Varied across SUPPORT sites: 23-54%.
- Variation was not explained by socio-demographic or clinical characteristics.
- The most powerful predictor of death in a hospital (versus other setting) was area hospital bed supply.

Pritchard RS, et al. J Am Geriatrics Soc 1998.

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TABLE 4 -- Odds of Death Occurring in the Hospital among SUPPORT Patients Associated with Health System Characteristics of HRR of Residence of Patient

Characteristics of HRR of SUPPORT Patient Residence	Adjusted Odds Ratio	95% Confidence Interval
Hospital days per 1000 (per 1000 day increment)	3.32	1.00, 11.1
% Residing in nursing homes (per increase of 10%)	1.07	0.64, 1.82
% Medicare HMO enrollment (per increment of 10%)	1.04	0.97, 1.12z
Medicare expenditures per beneficiary for:		
Home health (per $100 increment)	0.84	0.58, 1.24
Hospice (per $100 increment)	0.20	0.05, 0.85
Skilled nursing (per $100 increment)	0.70	0.21, 2.35
Primary care MDs per 100,000 (increment of 10)	0.57	0.29, 1.12
Specialist MDs per 100,000 (increment of 10)	1.31	1.05, 1.65

Pritchard RS, et al. J Am Geriatrics Soc 1998.

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Does improving end-of-life cancer care require
only reforming clinical microsystems
or also health care system capacity and organization?