VJ Periyakoil Productions
presents
Oscar the Cat: Lessons Learned

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Warrant Alpert School of Medicine at Brown University

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A Day in the Life
of Oscar the Cat
Dr. David Dosa
New England Journal
of Medicine
In the two years since Oscar was adopted into the third-floor dementia unit of the Steere House Nursing and Rehabilitation Center in Providence, he has maintained close vigil over the deaths of more than 25 patients, according to nursing staff, doctors who treat patients in the home, and an article in tomorrow's New England Journal of Medicine, written by Dosa.

(Globe Staff Photo / Dina Rudick)
“Oscar the Death Cat”
—Boston Globe
July 26, 2007
“If Oscar’s on your bed, you’re dead”
—London Times
July 26, 2007
“Oscar, de kat des doods”
(Oscar the Death Cat)
—German Translation
Nov. 19, 2007
Oscar (therapy cat)

From Wikipedia, the free encyclopedia

Oscar (born 2005) is a therapy cat living in the Steere House in July 2007 when he was featured in an article by David Dosa. According to Dosa, Oscar appears able to predict the impending death of patients, or that the cat can smell ketones, the biochemicals produced by the liver during starvation. Oscar became the subject of a book by Dosa in 2010, Makii.

Contents

1 Background
   1.1 Death prediction
2 Possible explanations
3 In popular culture
4 See also
5 Footnotes
Possible explanations

No one is certain if Oscar's behavior is scientifically significant. His behavior results from inborn abilities or is the result of environmental factors he has been exposed to nearly his entire life in an end-stage medical facility where he was expected.

Dr. Joan Teno, a professor of community health at Warren Alpert Medical School in Providence who cares for Steere House residents on a regular basis, said: "It's not that the cat is consistently there first thing in the morning or last thing at night, but there is a sense that he makes an appearance, and it always seems to be in the way you'd expect a cat to behave."

Dr. Dosa (also affiliated with Alpert Medical School), who wrote an essay in the July 26 issue of the NEJM, says that "(Oscar) has a special role in the healing process. He seems to understand when patients are about to die, and he picks up on specific odors surrounding death." Dr. Teno adds: "He seems to understand when someone is about to die, and he seems to make an appearance when you need him most."

Dr. Teno also mentioned the importance of pets in end-of-life care, saying: "Pets can provide comfort and companionship, and they can help patients adjust to the reality of their illness. They can also provide a sense of normalcy and routine, which can be comforting in a time of uncertainty."


Oscar’s First Days in the Dementia Unit at Steere House
Making Rounds With Oscar

The Extraordinary Gift of an Ordinary Cat

David Dosa, M.D.
Oscar’s Lessons

Dementia is a terminal diagnosis
Nursing homes are often now the last place of care and site of death. They are “homes” not hospitals.
Oscar’s Lessons (cont’d.)

The opportunities to improve are sometimes daunting—Hospice has an important role:

- Advanced Care Planning
- Preventing hospitalizations
Oscar’s Lessons for Caregivers

• Be present
• Celebrate the small, but don’t forget the big picture
• The final act of love is letting go
Objectives

1. Recognize the clinical features of when consideration should be given to dementia as a terminal illness and appropriate referral made to hospice services.

2. Become familiar with current research that reports variation in the health care utilization and quality of care for persons with advanced dementia.
Oscar’s Lessons:
Dementia as a Terminal Diagnosis
Epidemiology: Alzheimer’s

Number of Americans with Alzheimer’s Disease

(Hebert et al, Arch Neurol 2003)

Year 2000: 4.5 million

Year 2050: 16 million
Epidemiology: Alzheimer’s (cont’d.)

Median survival from diagnosis:

3 to 6 years

<table>
<thead>
<tr>
<th>Cause</th>
<th>Deaths/100,100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Diseases of heart</td>
<td>1571</td>
</tr>
<tr>
<td>2. Malignant neoplasms</td>
<td>1079</td>
</tr>
<tr>
<td>3. Cerebrovascular</td>
<td>385</td>
</tr>
<tr>
<td>4. Chronic lung disease</td>
<td>304</td>
</tr>
<tr>
<td>5. Alzheimer’s disease</td>
<td>175</td>
</tr>
</tbody>
</table>

Trends of U.S. Deaths from Alzheimer’s Disease

![Bar chart showing trends of U.S. deaths from Alzheimer's disease from 1999 to 2002.](chart.png)
Disease Trajectory in Dementia

• Often terminal
• Trajectory of progressive decline to point of being bed bound with dysphagia
• Results in recurrent aspiration pneumonias and inability to maintain nutrition
Choices, Attitudes, and Strategies for Care of Advanced Dementia at the End-of-Life
CASCADE: Eligibility

• Age 65 and older
• At least 30 days length of stay in a nursing home
• Severe cognitive impairment—**Global Deterioration Scale of 7**
• Proxy
CASCADE: Aims

To establish a cohort of nursing home residents with advanced dementia and their proxies (families), follow repeatedly for 18 months:

1. Clinical Course
2. Decision-Making
3. Satisfaction with End-of-Life Care
4. Complicated Grief
Patients with advanced dementia

- 18 months

Healthcare proxy

- 18 months

Death

- 18 months

3 months

2 months post-death

7 months post-death

3 months

3 months

3 months

3 months

3 months

3 months

3 months

3 months

3 months
Facilities

- 22 facilities
- Within 60 mile radius of Boston
- Over 60 Beds
Eligibility Criteria

- >60 years; length of stay > 30 days
- Dementia
- Global Deterioration Scale = 7
- Proxy available and communicates in English
1728 residents met screening criteria

- > 60 Years
- CPS Score = 5, 6,
- Length of Stay > 30 Days
- Dementia
- GDS=7
- English-Speaking Health Care Proxy

570 eligible

246 HCP refused
1 physician refused

323 dyads recruited
### Resident Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years) (mean ± SD)</td>
<td>85.3 ± 7.5</td>
</tr>
<tr>
<td>Female</td>
<td>85.4%</td>
</tr>
<tr>
<td>White</td>
<td>89.9%</td>
</tr>
<tr>
<td>Alzheimer’s disease</td>
<td>72.4%</td>
</tr>
<tr>
<td>Vascular dementia</td>
<td>17.0%</td>
</tr>
<tr>
<td>Other dementia</td>
<td>12.7%</td>
</tr>
</tbody>
</table>
• N=177/323 (55%)
• Median = 478 days
• 6-months = 25%
• 93% die in Nursing Home

*Adjusted for age, gender, disease duration
Probability of \( \geq 1 \) pneumonia: 41\% (N=132/323)

6-month mortality after pneumonia: 47\%
6-month mortality after pneumonia: 47%
Probability of ≥1 febrile episode: 53% (N=171/323)
6-month mortality after febrile episode: 44.5%
Probability of eating problem: 86% (N=278/323)
6-month mortality after eating problem: 38.6%
Distressing Symptoms at the End-of-Life

- **Dyspnea**
- **Pressure Ulcers**
- **Pain**
- **Aspiration**
- **Agitation**

![Graph showing the percentage of residents with symptoms at different time intervals before death.](image)
## Burdensome Interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parenteral Therapy</td>
<td>29%</td>
</tr>
<tr>
<td>Hospitalizations</td>
<td>12%</td>
</tr>
<tr>
<td>Emergency room visits</td>
<td>3%</td>
</tr>
<tr>
<td>Feeding tube</td>
<td>7%</td>
</tr>
<tr>
<td><strong>ANY</strong></td>
<td><strong>41%</strong></td>
</tr>
</tbody>
</table>
## Proxy Preparedness: Association with Interventions

<table>
<thead>
<tr>
<th>HCP perceives…</th>
<th>All Decedents N=177 (%)</th>
<th>Burdensome interventions last 3 months of life* (%)</th>
<th>AOR (95% CI)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 6 months to live</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>26</td>
<td>30</td>
<td>0.3 (0.1-0.8) referent</td>
</tr>
<tr>
<td>No</td>
<td>74</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Understand complications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>82</td>
<td>36</td>
<td>0.3 (0.2-0.6) referent</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>21</td>
<td>27</td>
<td>0.1 (0.04-0.4)</td>
</tr>
<tr>
<td>Either</td>
<td>67</td>
<td>39</td>
<td>0.2 (0.1-0.5) referent</td>
</tr>
<tr>
<td>Neither</td>
<td>12</td>
<td>73</td>
<td></td>
</tr>
</tbody>
</table>

* Burdensome intervention=hospitalization, emergency room, parenteral therapy, feeding tube during last 3 months of life

**adjusted for facility clustering and occurrence of clinical complications
What do we know about quality-of-care for persons with advanced dementia?
Oscar’s Lessons

Increasingly, Nursing Homes are the last place of care. Key is the word “home”.

eCampus Rural Palliative • VJ Periyakoil, MD, Course Director  http://ruralhealth.stanford.edu
2001 Location of Death

Mitchell SL et. al. JAGS 2005
Proportion of Deaths Occurring in Nursing Homes 1989

Less than 1 in 5 (18.6%)

Source: Brown University School of Medicine, Center for Gerontology & Health Services Research
About 1 in 4 (24.1%)

Source: Brown University School of Medicine, Center for Gerontology & Health Services Research
2000 Mortality Follow-Back Survey (MFB)
Teno, *JAMA* 2005
2000 MFB Results

• 111 deaths representing 132,508 deaths from dementia in 2000

• 80% last place of care was Nursing Home, **on average 25 in 30**

• 1 in 3 in more than one place (majority hospital)
2000 MFB Results (cont’d.)

Unmet Needs and Concerns

Pain: 22%
Loved one not treated with respect: 32%
Dyspnea: 33%
Emotional support to family: 45%
Rate of Persistent Pain in U.S. Nursing Homes

Source: Brown University School of Medicine, Center for Gerontology & Health Services Research
Rate of Persistent Pain in U.S. Nursing Homes

Source: Brown University School of Medicine, Center for Gerontology & Health Services Research

Approximately 41% Nationwide (variation: 37–49.5%)
Oscar’s Lessons:
Important opportunities to improve quality of care—
How Can Hospice Help?
Oscar’s Lessons

- Hospice improves the quality of care
- Hospice prevents health care transitions

**Education:** Limited role of feeding tubes in end-stage dementia
Existing Evidence: Feeding Tubes in Persons with Dementia
Findings: Structured Literature Review

Observational studies found that feeding tubes were not associated with:

- Improved survival
- Healing of pressure sores
- Prevention of aspiration pneumonia
- Improved quality of life

Finucane, JAMA 1999
Feeding Tube Use Among Persons With Severe Cognitive Impairment

- 3.8%-7.7%
- 7.8%-13.1%
- 13.2%-21.6%
- 21.7%-26.7%
- 26.8%-44.8%
## Facility Predictors of a Feeding Tube

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Profit</td>
<td>1.09 (1.05-1.12)</td>
</tr>
<tr>
<td>Urban Location</td>
<td>1.14 (1.11-1.16)</td>
</tr>
<tr>
<td>Residents with DNR order</td>
<td>1.67 (1.54-1.80)</td>
</tr>
<tr>
<td>&lt; .10</td>
<td>1.67 (1.54-1.80)</td>
</tr>
<tr>
<td>21-40</td>
<td>1.54 (1.44-1.65)</td>
</tr>
<tr>
<td>61-80</td>
<td>1.22 (1.13-1.30)</td>
</tr>
<tr>
<td>&gt;80</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Study of Feeding Tubes in Persons with: Advanced Cognitive Impairment
Study Findings

• National Minimum Data Set (MDS) data repository

• Medicare Denominator, Part A & Part B data

• Merged to examine the incidence use of feeding tubes and characterize health care markets that vary in feeding tube incidence
New Work

Examining incidence feeding tube insertion among 97241 nursing home residents (74% female, mean age 84.8 years) with Cognitive Performance Score of 4, 5 and 6.
<table>
<thead>
<tr>
<th>Low States</th>
<th>High States</th>
</tr>
</thead>
<tbody>
<tr>
<td>HI</td>
<td>MS 108/1000</td>
</tr>
<tr>
<td>ND</td>
<td>AL 100/1000</td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>UT</td>
<td>Rhode Island</td>
</tr>
<tr>
<td>Iowa</td>
<td>20/1000</td>
</tr>
<tr>
<td>Less that 5/1000</td>
<td></td>
</tr>
</tbody>
</table>
Key Questions

1. Are feeding tube inserted in an Acute Care Hospital stay or in Nursing Home?

✓ 68% are inserted during an acute hospital stay
Key Questions

2. How long do persons survive after a feeding tube insertion?

✓ 64% die within one year of feeding tube insertion
Rate of Health Care Transitions in the Last Six Months of Life Among Nursing Home Residents

(Adjusted for age, gender, disease duration)
Incidence of Feeding Tube Insertion
Table 1

Risk of Feeding Tube Insertion Among Nursing Home Residents with Advanced Cognitive Impairment Residing in Regions Varying on Rate of Health Care Transitions
<table>
<thead>
<tr>
<th>Quintile of Health Care Transition</th>
<th>Mean Rate of Health Care Transitions per 100 decedents</th>
<th>Adjusted Odds Ratio</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Quintile</td>
<td>264.6</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Quintile</td>
<td>302.7</td>
<td>1.3</td>
<td>0.97-1.7</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Quintile</td>
<td>330.0</td>
<td>2.3</td>
<td>1.7-3.0</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; Quintile</td>
<td>395.6</td>
<td>1.9</td>
<td>1.5-2.4</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; Quintile</td>
<td>401.5</td>
<td>2.5</td>
<td>2.0-3.2</td>
</tr>
</tbody>
</table>
Hospital Characteristics Associated With Feeding Tube Placement in Nursing Home Residents With Advanced Cognitive Impairment

Context  Tube-feeding is of questionable benefit for nursing home residents with advanced dementia. Approximately two-thirds of US nursing home residents fed had their feeding tube inserted during an acute care hospitalization.

Objective  To identify US hospital characteristics associated with higher rates of tube insertion in nursing home residents with advanced cognitive impairment.

Design, Setting, and Patients  The sample included nursing home residents 66 years or older with advanced cognitive impairment admitted to acute care hospitals between 2000 and 2007. Rate of feeding tube placement was assessed in hospitals with a sample of all Medicare claims files and was assessed in hospitals with the hospital admission identified hospital-level factors associated with feeding tube insertion rates, including bed size, ownership, and medical school affiliation. Measures of each hospital's annual volume of patients with serious chronic illnesses were evaluated, including incident and prevalent use in the last 6 months of life, the use of hospice services, and the use of hospice services at the time of death.

Outcome Measure  Endoscopic or surgical insertion.

JAMA, Feb. 2010

Joan M. Teno, MD, MS
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Pedro L. Gozalo, PhD
David Dosa, MD, MPH
Amy Hsu, BA
Orna Intrator, PhD
Vincent Mor, PhD
Highlights

• 12% of the Hospitals—NO feeding tube insertion over 8 years

• 25% hospitals you one in ten chance of getting a feeding tube insertion

• **Among the highest**, one in three Nursing Home residents with advanced dementia had a feeding tube inserted.
Higher Insertion Rates

Factors

- For-Profit: Adjusted Odds Ratio (AOR) 1.33
- Larger Hospitals: AOR 1.48
Higher Insertion Rates

Hospitals with more aggressive care:

AOR 2.6
Feeding Tube Decision-Making

5-State Survey

• Half said conversations were under 15 mins
• One-third said they did not discuss risks
• Half said doctor was strongly in favor
• 13% felt pressured by doctor to insert
• 1 in 4 family members regretted the decision
Our Conclusion

Our results suggest that decision to insert a feeding tube in nursing home residents with advance dementia is more about which hospitals you go to than a decision making process that elicits and supports patient choice.
Staffing + Hospice = Quality
Does Hospice Improve…

Quality of Care & Quality of Dying?

• Simple answer = YES

• Of 538 respondents, 73.0% (n=393) were in a nursing home at the time of death and 48.3% (n=260) received hospice services…
<table>
<thead>
<tr>
<th></th>
<th>Quality of Care</th>
<th>Quality of Dying</th>
<th>Among Persons With and Without Hospice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted results</td>
<td>Persons receiving hospice compared to those who did not receive hospice services after adjusting for age, gender, race, respondent relationship, and years of education.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Non-Hospice (n=252)</th>
<th>Hospice (n=200)</th>
<th>Hospice, too late (n=32)</th>
<th>Adjusted Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Problem Score (Mean, 95% CI)</td>
<td>1.2</td>
<td>0.8</td>
<td>2.7</td>
<td>0.57 (95% CI, 0.42-0.78)</td>
</tr>
<tr>
<td>Ratings of Quality of Care (Mean, 95% CI)</td>
<td>31.8</td>
<td>33.8</td>
<td>25.2</td>
<td>0.57 (95% CI, 0.42-0.78)</td>
</tr>
<tr>
<td>Peacefulness of Dying (Mean, 95% CI, 0=peaceful)</td>
<td>1.8</td>
<td>1.2</td>
<td>2.4</td>
<td>0.57 (95% CI, 0.42-0.78)</td>
</tr>
<tr>
<td>Quality of Dying (Mean, 95% CI, 10= very good)</td>
<td>8.4</td>
<td>8.8</td>
<td>7.5</td>
<td>1.6 (95% CI, 1.2-2.2)</td>
</tr>
</tbody>
</table>
Hospice & Nursing Home Transitions

• Hospice patients were less likely than non-hospice residents to be hospitalized (OR 0.56; 95 percent CI: 0.53-0.61).

• Translation: **47% reduction in the rate of hospitalization among NH residents using hospice services in the last month of life!**

  —Gozalo and Miller *Health Services Research*, April 2007
Summary

• Dementia is a common cause of death

• 70% die in nursing homes. Thus, nursing home is main site of terminal care
Summary (cont’d.)

Under-recognition of dementia as a terminal disease

• Pain is often untreated

• Lack of advance care planning

• Under-utilization of hospice
Natural history/clinical course

• Functional Status: Severely impaired throughout the last year

• Eating problem: 40% → 85% prior to death

• Pneumonia: 10% → 50% prior to death
Natural history/clinical course:

Most common decisions

• Treatment of dysphagia and infections

• Hospitalization
Implications

• Even with newer pharmacological treatment, **dementia remains a leading cause of death**

• Important opportunities to improve
Implications (cont’d.)

• Hospice plays an important role in the Nursing Home setting through Advance Care Planning and helping prevent unnecessary transitions in the last month of life

• Hospice Improves quality of care and quality of dying
So What are the *Real Lessons* from Oscar the Cat for Caregivers?
Caregivers Lessons: Mary & David

1. Be present

2. Celebrate the small, but don’t forget the big picture

3. The final act of love is letting go
For more information or questions on this presentation, contact:

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