Trends in End-of-Life Care among Patients with End-stage Renal Disease

Yoshio N. Hall, MD, MS
United States Renal Data System: Special Studies Center on Palliative and End of Life Care
University of Washington – Stanford University
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  o American Kidney Fund
Rationale

• Most patients receive intensive care at the end of life that is primarily focused on life prolongation.

• End-of-life care is expensive, and costs are predominantly driven by inpatient services
  o 25% of Medicare expenditures accounted for by 5% of recipients who die each year

Wong et al. *JAMA Intern Med.* 2012; Riley et al. *Health Serv Res.* 2010
Thomas et al. *CJASN*. 2013
Objectives

- Explore differences in trends by demographic characteristics.
- Identify potential opportunities to enhance EOL care planning for patients with ESRD in clinical practice.
Design & Data sources

Source: Public-use Standard Analysis Files (SAFs) 2014 version

ESRD service date 1995 or later who died between 2000–2012

Case Study (Follow Back)

3 months Fee-for-service Medicare A & B (primary payer)

Medicare Institutional and Physician Supplier claims

Primary measures:
1. Frequency of hospital admission, length of stay
2. Admission to intensive care unit (ICU)
3. Use of hospice care
4. Dialysis discontinuation
5. Use of invasive procedures (ICD-9)
## Decendent Cohort

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Age, mean, yrs</td>
<td>67.5</td>
<td>68.1</td>
<td>68.8</td>
<td>69.1</td>
</tr>
<tr>
<td>≥75 years, %</td>
<td>35</td>
<td>37</td>
<td>38</td>
<td>37</td>
</tr>
<tr>
<td>Male, %</td>
<td>52</td>
<td>54</td>
<td>55</td>
<td>56</td>
</tr>
<tr>
<td>White, %</td>
<td>66</td>
<td>65</td>
<td>67</td>
<td>68</td>
</tr>
<tr>
<td>Black, %</td>
<td>28</td>
<td>28</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Hispanic, %</td>
<td>8</td>
<td>10</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Hemodialysis, %</td>
<td>86</td>
<td>89</td>
<td>89</td>
<td>88</td>
</tr>
<tr>
<td>Medicare A&amp;B (last 90 days)</td>
<td>57</td>
<td>68</td>
<td>66</td>
<td>66</td>
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</tbody>
</table>

Median per person costs under Medicare Parts A & B in 2012 were $116,416 for the last year of life
Acute Hospital Admission
Last 3 months of life

Proportion admitted to hospital

Year | Proportion
---|---
2000 | 83
2001 | 84
2002 | 85
2003 | 84
2004 | 85
2005 | 85
2006 | 84
2007 | 83
2008 | 84
2009 | 83
2010 | 84
2011 | 83
2012 | 83

National Kidney Foundation®
Median hospital length of stay

Median hospital length of stay = 17 days
Intensive Care Unit Admission

Percentage of admitted

Calendar year

Receipt of intensive procedures

*Intubation, mechanical ventilation, tracheostomy, CPR, feeding tube placement, or (par)enteral nutrition
Receipt of intensive procedures by age group

*Intubation, mechanical ventilation, tracheostomy, CPR, feeding tube placement, or (par)enteral nutrition*
Receipt of intensive procedures by race

*Intubation, mechanical ventilation, tracheostomy, CPR, feeding tube placement, or (par)enteral nutrition
Inpatient deaths decreased from 47.3% in 2000 to 40.8% in 2012.
Dialysis discontinuation prior to death

Median time from discontinuation to death as reported on the CMS Death Notification form was 6 days (IQR, 3, 12 days)

The percentage of decedents who discontinued dialysis before death increased from 19.3% in 2000 to 24.9% in 2012
Dialysis discontinuation: by age group

Dialysis discontinuation before death was highest for patients aged 85+ years (34.2%) and lowest for those 20-44 years (10.9%).
Dialysis discontinuation before death was highest for Whites (27.3%) and lowest for patients of Other race (10.2%).
Hospice use at time of death

The percentage of patients receiving hospice services at the time of death increased from 11.4% in 2000 to 25.4% in 2012.
Hospice use at death: by age group

Overall use of hospice services was highest for patients aged 85 years and older (28.9%) and lowest for those aged 20-44 years (7.0%).
Hospice use at death: by race

Overall use of hospice services was highest for Whites (22.4%) and lowest for those of Other race (7.5%)
Summary trends

- Stable hospital admissions (83%) and length of stay (median 17 days)
- Increased frequency of ICU admissions (50% to 63%)
- Increased intensive procedures (27% to 35%)
- Reduced hospital deaths (47% to 41%)
- Increased dialysis discontinuation (19% to 25%)
- Increased use of hospice care at the time of death (11% to 25%)
Advance Care Planning

Health and Retirement Study, a nationally-representative sample of older Americans found that more people are completing advance directives: from 47% in 2000 up to 72% in 2010.
# Prevalence of Advance Directives

<table>
<thead>
<tr>
<th>Study</th>
<th>Completed an advance directive</th>
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<tr>
<td>Holley et al. (80 patients) AJKD 1997</td>
<td>35%</td>
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<tr>
<td>Sehgal et al. (65 nephrologists) JAMA 1996</td>
<td>30%</td>
</tr>
<tr>
<td>Kurella Tamura et al. (61 patients) NDT 2010</td>
<td>38%</td>
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</tbody>
</table>

I do not understand the phrase, “systolic BP readings outside an individualized lower and upper systolic BP range would result in a breached alert”. Does this mean that the “breached alert” outcome was different for each patient?

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Prevalence of Advance Directives among Nursing Home Patients with ESRD is substantially lower than among patients with other life-limiting conditions (e.g., cancer, O2-dependent COPD, advanced dementia).
Themes

- **Theme 1**: Medical care for patients with advanced kidney disease is complex and fragmented across settings, providers and over time.

- **Theme 2**: Lack of a shared understanding and vision of ACP and its relationship with other aspects of care.

- **Theme 3**: Unclear locus of responsibility and authority for ACP.

- **Theme 4**: Lack of active collaboration and communication around ACP.

End-of-life Care for Patients with End-Stage Renal Disease: 2000-2012

http://www.usrds.org/