Advance Care Planning and End-of-Life Care for Patients with Chronic Illness

Seelwan Sathitratanacheewin, MD
PMA Youth Program Scholar 2015
1. Cambia Palliative Care Center of Excellence, University of Washington, Seattle, WA
2. Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand
Outlines

• Background
• Methods
• Findings
• Taking Lessons to Thai Healthcare System
• Acknowledgement
Definition of Palliative Care

Specialized care for patients and family facing the problem associated with life-threatening illness.

Goal is to provide an extra layer of support and relief from the symptom and stress of a life-threatening condition.

Palliative care is appropriate at any age and at any stage in a serious illness, and can be provided together with curative treatment.

Center to Advance Palliative Care (CAPC)
The World Health Organization (WHO)
Four Key Aspects of Palliative Care

• Medical care
• Goals of care and Advance Care Planning
• Pain and symptom management
• Psychosocial and spiritual support
Visualization of Patients Who Need Palliative Care

Facing with Life-Threatening Conditions

- Trauma/Rapid-Deteriorating Illness
- Children with Chronic Illness
- Adults with Chronic Illness
  - Cancer
  - Organ Failure
  - Dementia

Each types of life-threatening illness require unique focus of palliative care.
Current Challenges in Chronic Care Model

Figure 2: U.S. National Health Expenditures as a Share of GDP, 1960-2021

Source: Centers for Medicare and Medicaid Services.

Rising healthcare cost for chronically ill

NOTE: Excludes Medicare Advantage enrollees.
Current Challenges in Chronic Care Model

Distribution of Traditional Medicare Beneficiaries and Medicare Spending, 2010

- **90%** of Medicare beneficiaries account for **$385 billion** in spending.
- **10%** account for **$10,584** per capita spending.
- **58%** account for **$61,722** per capita spending.
- **42%** account for **$4,897** per capita spending.

Disproportion of healthcare resource distribution

**Note:** Excludes Medicare Advantage enrollees.

**Source:** Kaiser Family Foundation analysis of the Medicare Current Beneficiary Survey 2010 Cost and Use file.
Current Challenges in Chronic Care Model

Medicare per capita spending was nearly four times higher for decedents than survivors in 2014.

Average Medicare per capita spending for decedents and survivors in traditional Medicare, 2014

Identification of High need, high cost population

NOTE: Excludes beneficiaries in Medicare Advantage.
SOURCE: Kaiser Family Foundation analysis of a five percent sample of 2014 Medicare claims from the CMS Chronic Conditions Data Warehouse.
Current Challenges in Chronic Care Model

### Seven in Ten Americans Would Prefer to Die at Home; Four in Ten Think They Are Likely to Die at Home

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>At home</td>
<td>71%</td>
</tr>
<tr>
<td>In a hospital</td>
<td>9%</td>
</tr>
<tr>
<td>In a hospice</td>
<td>7%</td>
</tr>
<tr>
<td>In a nursing home</td>
<td>5%</td>
</tr>
<tr>
<td>Not sure</td>
<td>1%</td>
</tr>
</tbody>
</table>

If you had a choice, where would you prefer to die?

Home is the most common preference place of death.

Where do you think you are most likely to die?

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>At home</td>
<td>41%</td>
</tr>
<tr>
<td>In a hospital</td>
<td>24%</td>
</tr>
<tr>
<td>In a hospice</td>
<td>6%</td>
</tr>
<tr>
<td>In a nursing home</td>
<td>4%</td>
</tr>
<tr>
<td>Not sure</td>
<td>17%</td>
</tr>
</tbody>
</table>

**NOTE:** “Other/Not sure” includes those who said “Both (Vol.)/Neither (Vol.)” or did not answer. For the second question, Not sure/No answer responses not shown.

**SOURCE:** Kaiser Family Foundation/The Economist Four-Country Survey of Aging and End-of-Life Medical Care (conducted March 30-May 29, 2016)
• Systematic review of palliative care, critical care, costs
• Intervention: ACP interventions in hospital before ICU
• 2 randomized trials and 2 observational studies
• RCT results:
  • Gade (2008): reduce ICU admits at 10% vs. 5%, p=0.04
  • Detering (2010): reduce ICU admits 10% vs. 0%, p=0.01
• Observational study results
  • Penrod (2006): reduce ICU admits 68% vs. 33%, p<0.001
  • Penrod (2010): 44% reduction, p<0.001
Research Objectives

• Examine temporal changes in intensity of end-of-life care and place of death from 2010-2015 at UW Medicine
• Examine association between advance care planning documentation and end of life care.
Cambia Palliative Care Quality Metric Program

- Design: A Retrospective Cohort
- Data Sources
  1. UW Medicine Healthcare System EHR
  2. Washington State Death Certificate
Study Subjects

• Patients aged \( \geq 18 \) years with at least 1 of 9 chronic conditions (cancer, COPD, CHF, CAD, chronic liver disease, chronic renal disease, dementia, PVD, dementia) who died between 2010-2015

• Patients attributable to the UW Medicine system defined as having 1+ non-surgical inpatient visit or 2+ outpatient visits within last 24 months of life
## 18 Quality Metrics and 4 Study Outcomes

<table>
<thead>
<tr>
<th>Utilization at EOL</th>
<th>Screening/Assessment</th>
<th>Needs &amp; Preferences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ED visits in last 30 days</td>
<td>11. Completed comprehensive assessment, including prognosis, function, symptoms</td>
<td></td>
</tr>
<tr>
<td>2. Inpatient in last 30 days</td>
<td>12. Screen for pain</td>
<td></td>
</tr>
<tr>
<td>3. ICU stay in last 30 days</td>
<td>13. Screen for shortness of breath</td>
<td></td>
</tr>
<tr>
<td>4. Hospital Readmissions</td>
<td>14. Bowel regimen with opioids</td>
<td></td>
</tr>
<tr>
<td>5. Chemo in last 14 days</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Circumstances of Death</th>
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<tbody>
<tr>
<td>6. Died in hospital</td>
<td>15. Advance directive and POLST documentation</td>
<td></td>
</tr>
<tr>
<td>7. Died in hospital w/ ICU days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Died after planned ICD deactivation</td>
<td>16. Documented ACP and goals of care discussions</td>
<td></td>
</tr>
<tr>
<td>9. Died w/ cancer &amp; no hospice</td>
<td>17. Documented discussion of emotional/ psychosocial needs</td>
<td></td>
</tr>
<tr>
<td>10. Died w/ &lt;3 days in hospice</td>
<td>18. Documented discussion of spiritual concerns</td>
<td></td>
</tr>
</tbody>
</table>
Place of Death for chronically ills at UW Medicine

Percentage Who Died in Hospital

Year of Death

2010: 42.4%
2011: 41.1%
2012: 41.3%
2013: 40.0%
2014: 40.9%
2015: 42.3%

observed
curvilinear model
linear model
Hospitalizations in the last 30 days of life at UW Medicine
ICU admission in the last 30 days of life at UW Medicine
Advance Directives and POLST forms at UW Medicine

![Graph showing percentage of advance directives with year of death from 2010 to 2015. The graph includes observed data and two models: curvilinear and linear. The percentages increase from 20.9% in 2010 to 51.6% in 2015.]
Association between ACP documents and end of life care

Figure 4 – Advance Directives associated with increase in inpatient care in last month

- Year of Death (2010-2015) to Any Inpatient Care: -0.079 < 0.001
- Any Advance Directives to Any Inpatient Care: 0.166 < 0.001
- Any Advance Directives to Death in Hospital: -0.006
- Year of Death (2010-2015) to Death in Hospital: -0.065 < 0.001
- Any Advance Directives to Death in Hospital: 0.321
- Year of Death (2010-2015) to Death in Hospital: 0.166 < 0.001
- Any Advance Directives to Death in Hospital: 0.262 < 0.001

Figure 4 – Advance Directives associated with increase in ICU care in last month

- Year of Death (2010-2015) to Any ICU Care: -0.065 < 0.001
- Any Advance Directives to Any ICU Care: 0.166 < 0.001
- Any Advance Directives to Death in Hospital: -0.006
- Year of Death (2010-2015) to Death in Hospital: -0.065 < 0.001
- Any Advance Directives to Death in Hospital: 0.321
- Year of Death (2010-2015) to Death in Hospital: 0.166 < 0.001
- Any Advance Directives to Death in Hospital: 0.262 < 0.001

a - Results are from probit regression models, estimated with weighted mean- and variance-adjusted least squares (WLSMV). Each model included year of death (0-5) as an ordinal predictor, advance directive documentation as a binary mediator. The models were saturated, with structural links leading from year of death to advance directives and the outcome, and from advance directives to the outcome.
Timing of ACP completion, location of care and place of death

Associations were tested with logit regressions. All models were adjusted for age at death, the specific Dartmouth Atlas conditions with which the decedent had been diagnosed, and the number of outpatient visits in the year before the last month of life and level of education.
Taking Lessons to Thai Healthcare System

• **Timing of completion** of ACP documentation associated with effectiveness of ACP

  1. Completion of advance directives **within** the last 30 days of life is associated with increased intensity of care at end of life
  2. Completion of advance directives **before** the last 30 days of life is associated with decreased intensity of care at end of life
Taking Lessons to Thai Healthcare System

• **Type of documentation** makes a difference: We found strongest association with lower intensity of care at the end-of-life for treatment-limiting POLST (physician orders for life-sustaining treatment) forms, then living wills, and durable power of attorney for healthcare.
Taking Lessons to Thai Healthcare System

ACP will facilitate patients redistribution from higher level medical center to less aggressive medical care setting. However, successful implementation needs strong engagement from all stakeholders in the healthcare system.
Acknowledgement

• Prince Mahidol Award Foundation, PMA Youth Program and Associate Professor Somchai Tanawattanacharoen

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• Associate Professor Ruth Engelberg, Dr. Robert Y Lee, Lois Downey

Your Question = My Pleasure
Study Population

All patients who die

Patients with Surgical/Traumatic/Rapid-deteriorating conditions

Patients with chronic life-limiting illness

Study population
Current Challenges in Chronic Care Model

Public Prioritizes Relieving Pain and Stress over Prolonging Life

Which do you think should be more important when it comes to health care at the end of people's lives?

- Helping people die without pain, discomfort, and stress: 71%
- Preventing death and extending people's lives as long as possible: 19%
- Other/Not sure: 8%

Do you think the health care system in the U.S. places too much, too little, or about the right amount of emphasis on...

- Too little
- About the right amount
- Too much

- Preventing death and extending people's lives as long as possible: 33% Too little, 37% About the right amount, 19% Too much
- Helping people die without suffering, pain, discomfort and stress: 41% Too much, 37% About the right amount, 5% Too little

NOTE: “Other/Not sure” includes those who said “Both (Vol.)/Neither (Vol.)” or did not answer. For the second question, Not sure/No answer responses not shown.

SOURCE: Kaiser Family Foundation/The Economist Four-Country Survey of Aging and End-of-Life Medical Care (conducted March 30-May 29, 2016)
Current Challenges in Chronic Care Model

About Half Rate Health Care System Fair or Poor in General and When It Comes to End-of-Life Medical Care

How would you rate the health care system in the U.S. today?

- Excellent: 5%
- Very Good: 11%
- Good: 26%
- Fair: 27%
- Poor: 27%
- Not sure: 3%

How would you rate the health care system in the U.S. when it comes to providing end-of-life medical care?

- Excellent: 4%
- Very Good: 10%
- Good: 25%
- Fair: 27%
- Poor: 22%
- Not sure: 12%

NOTE: “Other/Not sure” includes those who said “Both (Vol.)/Neither (Vol.)” or did not answer. For the second question, Not sure/No answer responses not shown.
SOURCE: Kaiser Family Foundation/The Economist Four-Country Survey of Aging and End-of-Life Medical Care (conducted March 30-May 29, 2016)
My Question

• Whether advance care planning documentation (advance directives and POLST form) is associated with lower intensity of care at the end-of-life for patients with advanced chronic illness.
Current Challenges in Chronic Care Model

Health Care Spending Was Higher at Every Level for Adults with High Needs Than for Adults with Multiple Chronic Diseases Only

Identification of High need, high cost population

Gaps in Palliative Care for Adult with Chronic Illness

Long trajectory of chronic illness offer an opportunity to promote effective communication about goal of care and ACP prior to death.

Holley, CJASN 2012
Type of ACP documents and place of death

Percentage of Death in Hospital by Treatment-Limiting ACP Completed in Last 30 Days of Life

- No ACP
- DPOAHC only
- Living Will only
- POLST only
- Any AD
- POLST+Any AD
Type of ACP documents and ICU care in the last 30 days of life

Percentage of Any ICU Admission in Last 30 Days of Life by Treatment-Limiting ACP Status Before Last 30 Days of Life

- No ACP
- DPOAHC only
- Living Will only
- POLST only
- Any AD
- POLST+Any AD