

Health Economic Approach to End-of-Life Care in the US: Based on Medicare

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- I . Introduction
- II . The Characteristics of End-of-Life Care
 - 1. Supply-Sensitiveness
 - 2. Low Effectiveness
- III. Patient Preference and Concerns
- IV. What Makes the EOL care Supply-Sensitive
 - 1. Common Misconception
 - 2. Physicians' Mission for Patients
 - 3. Lack of End-of-Life Care Decision
 - 4. Legal Issues
 - 5. Management Strategy
- V . Suggestions
 - 1. Full Implementation of Advance Directive
 - 2. Alternative Strategy in Management
- VI. Conclusion

I. Introduction

End-of-Life care for the terminally ill/chronically ill has been the hot issue in economic, legal, ethical, managerial, and political ways recently.

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There have been more people who are open to this sensitive issue of life or death, but still not many people would want to talk about money in EOL (End-of-Life) care. It might mislead people that the money matters more than the survival of patients at their last moments their life. However, we need to talk about money along with the quality of care the EOL patients are receiving, in order to provide better medical treatments to the patients.

According to Medicare News Group, "In the US, total federal spending on health care expends almost 18 percent of the nation's GDP, about double what most industrialized nations spend on health care. In 2011, Medicare spending reached close to \$554 billion, which amounted to 21 percent of the total spent on U.S. health care in that year. Of that \$554 billion, Medicare spent 28 percent, or about \$170 billion, on patients' last six months of life."¹⁾

How can this short period treatments can use up the fortune? Hospital inpatient charges exceed \$6,200 per day, and costs to maintain someone in an ICU can reach up to \$10,000 per day.²⁾ Most of the costs are paid for by the federal government with few or no questions asked. It is about prolonging patients' lives, it is almost untouchable. However, the problem lies in the assumption that the more hospital care leads to the better result of terminal illnesses. Actually a number of studies show the opposite effect of the intense hospital care for terminal illnesses. This result could be true because of the differentiating characteristics of the terminal illnesses.

1) <http://www.medicarenewsgroup.com/context/understanding-medicare-blog/understanding-medicare-blog/2013/06/03/end-of-life-care-constitutes-third-rail-of-u.s.-health-care-policy-debate> (End-of-Life Care Constitutes Third Rail of U.S. Health Care Policy Debate) (visited 5/17/2014).

2) <http://www.debt.org/medical/hospice-costs/> (Hospice and End-of-Life Options and Costs) (visited 5/16/2014).

In this article, I am only focusing on the patients in terminal condition, or severe chronic condition at the end of life period. Terminal condition means an incurable and irreversible condition caused by injury, disease, or illness that, within reasonable medical judgment, will cause death within a reasonable period of time in accordance with accepted medical standards, and where the application of life-sustaining treatment serves only to prolong the process of dying.³⁾ Chronic condition is a long-lasting condition that can be controlled but not cured.⁴⁾ Common chronic diseases include cancer, diabetes, chronic obstructive pulmonary disease (COPD), and AIDS.

This definition shows that the terminal illnesses/severe chronically illnesses at the end-of-life are hard to cure in reality. However, the cost of this hospital care for end-of-life is very high, while it is claimed that all the care does is only slowing down the time of dying. Thus the care is not cost-effective at all, which will burden the finance of health care system. Moreover, I could also learn the patients' experiences from this intense care are very unsatisfying. Actually in many circumstances, the intense hospital care is against their needs and it even makes patients feel worse. There are a number of studies about the terminally ill patients and their hospital care, and these are mostly focusing on Medicare services.

This article is basically a literature review of those studies, based on Medicare. By reviewing previous studies and related literatures, I will analyze the characteristics of end-of-life care, patient preference and concerns, and the causes of supply-sensitive care. And then, I will suggest

3) Washington Natural Death Act (RCW 70.122.020 (9)).

4) <http://cmcd.sph.umich.edu/what-is-chronic-disease.html> (What is Chronic Disease?) (visited 5/20/2014).

possible solutions for the matters of supply-sensitive end-of-life care.

II. The Characteristics of End-of-Life Care

1. Supply-Sensitiveness

The first important aspect of end-of-life care for the terminally ill/chronically ill at the end of life is that the care is supply-sensitive. Dartmouth Atlas research has identified supply-sensitive care as follows: Supply-sensitive care refers to services where the supply of a specific resource has a major influence on utilization rates. And variations in supply-sensitive care are largely due to difference in local capacity of resources, and a payment system that ensures that existing capacity remains fully developed.⁵⁾

Then how does supply-sensitiveness explained? The study shows, Medicare spending on EOL care for terminally ill/chronically ill patients varies dramatically among regions, and it is correlated with the huge differences among regions in volume of hospital care. And the associations between supply of resources and utilization are strong⁶⁾: this difference in volume is sensitively depending on the supply of resources. For two decades, the Dartmouth Atlas Project has examined regional variations in the practice of medicine and in spending for health care, principally in the Medicare

5) Wennberg JE, Fisher ES, Goodman DC, et al.(2008) Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute for Health Policy and Clinical Practice.

6) Wennberg JE, Fisher ES, Goodman DC, et al.(2008) Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute for Health Policy and Clinical Practice.

<Table 2-1> Medicare Spending for Hospitalizations and Inpatient Physicians Services in the Last Two Years of Life for Patients with At Least One of Nine Chronic Conditions, by State (Death Occurring 2001-05)¹⁰⁾

1.20 to 1.46		1.00 to < 1.20		0.85 to < 1.00		0.67 to < 0.85	
NJ	\$37,040 (1.46)	HI	\$28,040 (1.10)	FL	\$25,250 (1.00)	VA	\$21,553 (0.85)
DC	\$36,525 (1.44)	AK	\$27,659 (1.09)	TX	\$25,210 (0.99)	NC	\$21,537 (0.85)
NY	\$34,956 (1.38)	IL	\$27,571 (1.09)	OH	\$22,978 (0.91)	AL	\$21,249 (0.84)
MD	\$33,715 (1.33)	MA	\$27,434 (1.08)	AZ	\$22,763 (0.90)	VT	\$21,174 (0.83)
CA	\$33,706 (1.33)	CT	\$27,408 (1.08)	MS	\$22,742 (0.90)	MN	\$21,119 (0.83)
		DE	\$26,401 (1.04)	MO	\$22,635 (0.89)	WA	\$20,858 (0.82)
		NV	\$26,351 (1.04)	KY	\$22,621 (0.89)	NH	\$20,839 (0.82)
		MI	\$25,721 (1.01)	TN	\$22,619 (0.89)	KS	\$20,781 (0.82)
		LA	\$25,695 (1.01)	SC	\$22,578 (0.89)	CO	\$20,536 (0.81)
		PA	\$25,661 (1.01)	WV	\$22,461 (0.89)	IN	\$20,485 (0.81)
		RI	\$25,482 (1.00)	GA	\$22,406 (0.88)	ME	\$20,225 (0.80)
				OK	\$22,377 (0.88)	NE	\$20,001 (0.79)
				AR	\$21,777 (0.86)	WI	\$19,933 (0.79)
						WY	\$19,597 (0.77)
						NM	\$19,077 (0.75)
						OR	\$18,935 (0.75)
						IA	\$18,636 (0.73)
						SD	\$18,624 (0.73)
						MT	\$17,921 (0.71)
						ND	\$17,256 (0.68)
						UT	\$17,140 (0.68)
						ID	\$17,135 (0.68)



population.⁷⁾ The project has also documented hospital-specific variations in the medical care provided to Medicare beneficiaries with severe chronic illness. According to 2008 Dartmouth Atlas Project, for patients with chronic illnesses, geography matters: Depending upon where they live, and which hospital or health care organization they are loyal to, patients with chronic illnesses receive very different care.⁸⁾ The <Table 2-1> presents the

7) Fisher ES, Goodman DC, Skinner J, et al.(2009). Health Care Spending, Quality, and Outcomes. The Dartmouth Institute for Health Policy and Clinical Practice.

8) Wennberg JE, Fisher ES, Goodman DC, et al.(2008). Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute

variations in Medicare spending for inpatient physicians services in the last two years of life by state. The project found out that most of this variation among regions was not due to differences in the price of care in different parts of the country, but rather to differences in the volume, or the amount of inpatient care delivered per capita. And Medicare per capita spending on chronically ill beneficiaries varied more than twofold among hospital referral regions, and the variation in the volume of care became more striking when it comes to chronically ill patients in the last six months of life.⁹⁾

The important fact the studies show here is that the most significant factor associated with how much Medicare spends in any given region is the availability of medical resources. Thus the care patients receive is "supply-sensitive". This means that it is not the matter of patients' severity of illness or preference – which is "demand-sensitive". Rather, it is correlated with what they can provide at the medical institute. No matter how sick the patients are, they are treated more intense if there are more available beds at the hospital, more physicians, more Intensive Care Units, and more other equipments.

Even only with common sense, we can easily assume that this might cause the problem of overusing of resources in resource-rich regions, since the resources are used up as much as they have. Meanwhile, the regions with less resources will not treat their patients as intense as the resource-rich regions. However, what is wrong with overusing medical

for Health Policy and Clinical Practice.

9) Wennberg JE, Fisher ES, Goodman DC, et al.(2008). Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute for Health Policy and Clinical Practice.

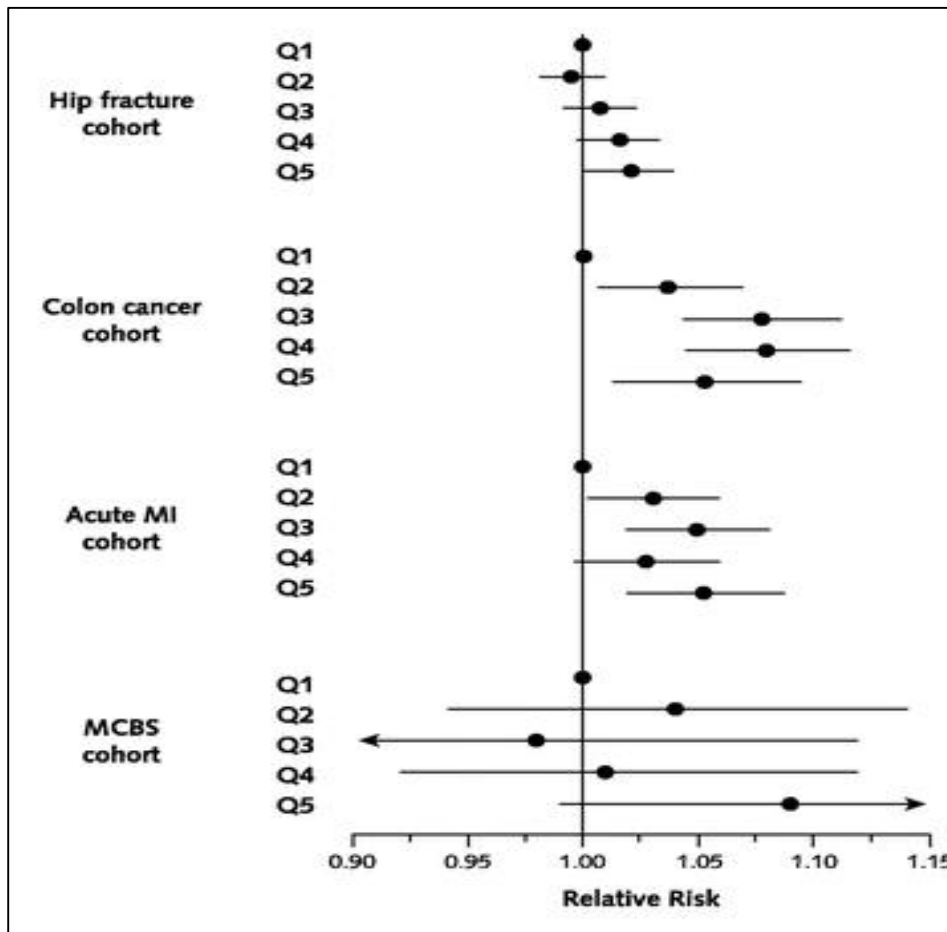
10) Wennberg JE, Fisher ES, Goodman DC, et al.(2008) Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute for Health Policy and Clinical Practice.

resources in end-of-life care? Is there even "over"using in medical services for the sick patients, especially when it is about life or death? Usually the end-of-life care is directly related to extending the patient's life. Without such treatments, the patients in end-of-life period might face the critical state. A number of people would obviously think that there is no "overusing" in medical treatment since it is for saving patients' lives, which is the eventual purpose of medical services. This questioning leads to the next characteristic, the negative outcome of intense care for terminally ill/chronically ill patients in end-of-life care.

2. Low Effectiveness

The second aspect of end-of-life care for the terminally/chronically ill is that the care has very low effectiveness considering its high cost. The question whether overusing the medical resources could be bad for patients can be answered in this context. If the more treatment results in the better outcome, there should not be any problem. However, there are studies that show the negative outcomes with the more hospital care. For a specific example on cancer, according to a Dartmouth Atlas Care Brief, if and when the cancer advances despite treatments and patients find their strength, energy, appetite, and overall stamina are waning, they should be cautious about excessive medical care. The longstanding assumption is that the more diagnostic tests and treatments patients receive, the better off they will be, but two decades of studies by Dartmouth Atlas researchers have proven that this supposition is often wrong. In advanced illnesses, including cancer, higher levels of medical treatments are commonly associated with more suffering, but little or no extension of life.¹¹⁾

<Table 2-2> Adjusted Relative Risk for Death During Follow-up Across Quintiles of Medicare Spending¹³⁾



The effectiveness of the hospital care could be understood in two facets. One is the effect on mortality and the other is on patients' experiences. The mortality is an objective factor, which is the matter of surviving. The patients' experience is a subjective factor, the degree of patients' satisfaction with the hospital care.

Elliot S. Fisher and the other researchers conducted a study on the relative mortality with the increase in EOL-EI (end-of-life expenditure

11) Goodman DC, Morden NE, Chang CH, et al. (2013). Trends in Cancer Care Near the End of Life. The Dartmouth Institute for Health Policy and Clinical Practice.

index). And the result was quite the opposite of the common thought. According to the study, in each cohort (cohort members were similar in baseline health status), an increase in EOL–EI was associated with a small increase in the risk for death. This results of the mortality analyses are presented in <Table 2–2>. This study found no evidence to suggest that the pattern of practice observed in higher–spending regions led to improved survival, slower decline in functional status: the more aggressive patterns of practice observed in high–spending regions offer no benefit in terms of their major aim, which is improving survival.¹²⁾ The fact that an increase in EOL–EI results in an increase in mortality is the opposite from the widespread idea that the more spending on the medical service is always better for patients' health outcomes. The whole point of spending more is in getting more medical service which is supposed to have better outcomes. If this is not the case, the excessive spending on Medicare for the EOL care is effectless and useless.

The apparent and objective outcomes, such as mortality, are important, but it is also crucial to consider the subjective factors. The patients' personal experiences with the hospital care has to be considered in order to understand how patients really feel during the treatment at the end of their life. The EOL care patients usually have certain limited amount of time, so how they spend this time should be considered carefully in assessing the efficiency of treatments.

12) Fisher ES, Wennberg DE, Stukel TA, et al. (2003). The Implications of Regional Variations in Medicare Spending. Part 2: Health Outcomes and Satisfaction with Care. *Annals of Internal Medicine*. Vol. 138 (4): 288–322.

13) Fisher ES, Wennberg DE, Stukel TA, et al. (2003). The Implications of Regional Variations in Medicare Spending. Part 2: Health Outcomes and Satisfaction with Care. *Annals of Internal Medicine*. Vol. 138 (4): 288–322

John E. Wennberg and the colleagues researched on the correlation of the inpatient care intensity and chronically ill patients' experience ratings. The rating used in this study is Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) by the Centers for Medicare and Medicaid Services (CMS). This study states that patients hospitalized in regions with greater inpatient care intensity tend to rate their hospitals unfavorably and are more dissatisfied with their hospital experiences for tangible reasons – dirty rooms, noisy nighttime, poor pain control, and shortfalls in communication with doctors and nurses. The interesting fact that we need to pay attention to is that most of HCAHPS evaluations are concerned with the coordination of care and communication with patients, and the reason for poor communication and care coordination is not simply that there are not enough physicians.¹⁴⁾ This article says the reason is the opposite: regions with conservative use of inpatient care and more satisfied patients use less physician labor in managing chronic illnesses. This correlation of Hospital Care Intensity and the patients' ratings is presented in <Table 2–3>.

I could learn from the research literatures that the terminally ill/chronically ill patients tend to be less satisfied when they get more intense hospital care. It might slow down the progress of dying in some circumstances, but the dissatisfaction and sufferings from the intense care are significant and impactful. It cannot be overlooked or justified by the idea that we always need to provide the best we could offer for the patients. Especially it is because the patients in end-of-life care have very much different preferences than the other patients. They are at the last period of

14) Wennberg JE, Bronner K, Skinner JS, et al. (2009). Inpatient Care Intensity and Patients' Ratings of Their Hospital Experiences. *Health Affairs*. 28(1): 103–112.

<Table 2-3> Practice Patterns In Managing Chronic Illness During The Last Two Years Of Life And Patients' Ratings Of Hospital Experiences In Regions By Quintile Rank On The Hospital Care Intensity(HCI) Index¹⁵⁾

	HCI quintile			
	Lowest	Median	Highest	(RatioHL)
HCI index score	0.67	0.96	1.46	(2.17)
<hr/>				
Resource inputs during the last two years of life				
Medicare spending per decedent	\$38,296	\$45,385	\$60,798	(1.59)
<hr/>				
Physician labor inputs per 1,000 decedents				
All physicians	16.6	20.5	29.5	(1.78)
Medical specialists (MS)	5.6	7.8	13.1	(2.35)
Primary care (PC) physicians	7.4	8.6	11.5	(1.55)
Ratio PC/MS	1.34	1.10	0.88	(0.66)
Hospital bed inputs per 1,000 decedents	40.0	53.4	70.8	(1.77)
<hr/>				
Terminal care				
Percent seeing 10 or more MDs during last six months of life	20.2%	30.0%	43.7%	(2.16)
Percent of deaths with intensive care unit admission	14.3	18.9	23.2	(1.63)
Percent enrolled in hospice during last six months of life	30.1	31.7	30.2	(1.00)
<hr/>				
Patients' evaluations of hospital experiences (percent of patients who gave negative rating)				
Patients who gave a rating of 6 or lower	9.3%	10.8%	13.9%	(1.49)
Patients probably or definitely would not recommend the hospital	4.7	5.9	8.2	(1.74)
Doctors sometimes or never communicated well	4.6	5.1	6.6	(1.42)
Nurses sometimes or never communicated well	5.2	6.4	8.9	(1.72)
Pain was sometimes or never well controlled	7.0	8.3	10.4	(1.48)
<hr/>				

Patients sometimes or never received help as soon as they wanted	10.9	13.9	18.3	(1.68)
Staff sometimes or never explained medicines before giving them to patients	22.1	24.7	28.4	(1.29)
Room was sometimes or never clean	10.3	12.7	13.8	(1.34)
Sometimes or never quiet at night	15.0	15.4	19.1	(1.28)
Staff did not give patients information about what to do during recovery at home	18.5	20.9	25.0	(1.35)

their life with terminal illnesses/chronical illnesses, so their preferences might not be getting intense care for curing or extending life. Next I will review for studies on patient preference and concerns.

III. Patient Preference and Concerns

Amber E. Barnato and colleagues researched about the patient preference in end-of-life care. They conducted a survey of Medicare beneficiary and introduced the preferences pertaining to end-of-life care. As we could see from different studies, there are wide variations in health care expenditures across regions in the United States, and they wanted to know if this variation is resulted from the difference of patient preferences.

According to this study, they could not find the difference in patient preferences among the different regions. Their preferences were very similar overall: most preferred to spend their last days at home (86.0%), rather than in a hospital (9.1%) or nursing home (4.9%). Most did not want potentially life-prolonging drugs that made them feel worse all the

15) Wennberg JE, Bronner K, Skinner JS, et al. (2009). Inpatient Care Intensity and Patients' Ratings of Their Hospital Experiences. *Health Affairs*. 28 (1): 103–112

time (83.9%), although a significant minority did (16.1%). Most wanted palliative drugs, even if they might be life-shortening (71.7%); while 24.3% did not want and 4.0% did not know. Most would not want to be put on a ventilator to gain 1 week's life extension (87.4%), but even if the gain were 1 month, 77.4% would still not want the ventilator.¹⁶⁾

This study not only presents the patient preference, but also backs up the hypothesis that end-of-life care is supply-sensitive care. The utilization of treatments is not driven by demand – patient preference and disease severity. This supply-sensitive care is problematic because much of this care is unnecessary which does not have reasonable benefits or satisfaction for the patients, but still costly.

Then what do patients in end-of-life care with terminal illnesses/chronical illnesses concern about? I could find very much intriguing and meaningful datas on Oregon's Death with Dignity Act¹⁷⁾ that can answer this question.

The health department of Oregon posts annual reports about Death with Dignity Act. The data shown in <Table 3-1> presents the characteristics of patients who have died from ingesting a lethal dose of medication as of January 17, 2014. This report shows the concerns about the last moments of life of terminally ill patients who died from the injection of a lethal dose of medication, and this is basically they decided to go under this procedure. This is a very crucial data because it can represent how terminally ill

16) Barnato AE, Herndon MB, Anthony DL, et al. (2007). Are Regional Variations in End-of-Life Care Intensity Explained by Patient Preferences?: A Study of the US Medicare Population. *Med Care*. 45(5): 386–394.

17) Death with Dignity Act is physician-assisted suicide which allows adult residents terminally ill – in the state with six months or less to live – to end their lives through the voluntary self-administration of lethal medications, expressly prescribed by a physician for that purpose.

<Table 3–1> End of Life Concerns¹⁸⁾

End of Life Concerns	2013 (N=71)	1998–2012 (N=681)	Total (N=752)
Losing autonomy (%)	66 (93.0)	618 (91.3)	684 (91.4)
Less able to engage in activities making life enjoyable (%)	63 (88.7)	602 (88.9)	665 (88.9)
Loss of dignity (%)	52 (73.2)	452 (81.9)	504 (80.9)
Losing control of bodily functions (%)	26 (36.6)	350 (51.7)	376 (50.3)
Burden on family, friends/caregivers (%)	35 (49.3)	264 (39.0)	299 (40.0)
Inadequate pain control or concern about it (%)	20 (28.2)	157 (23.2)	177 (23.7)
Financial implications of treatment (%)	4 (5.6)	18 (2.7)	22 (2.9)

patients actually want from their end of life. As we can see from the <Table 3–1>, losing autonomy, being less able to engage in activities making life enjoyable, and loss of dignity were the significant and major reasons for 'shortening the dying process'.¹⁹⁾ Under their physically painful and also emotionally despairing condition, they do not feel like they are living as real human beings. They literally wished to die with dignity.

By learning these patient preferences and concerns about the end-of-life care directly from the patients, we should understand why we could not be judgmental on the idea of utilizing less treatments on the end-of-life care patients. It is about letting the end-of-life patients to live and die as respected human beings. From an ethical point of view, we need to understand they are already in a suffering state from the illnesses, and they should be able to choose how to spend the time what is left for them. Economically speaking, it is unreasonable and irrational to spend

18) Oregon's Death with Dignity Act: Annual Report 2013. Oregon Health Authority. (2014)

19) Oregon's Death with Dignity Act: Annual Report 2013. Oregon Health Authority. (2014).

billions of dollars to leave the patients in dissatisfaction and distress until they die. And of course we should not overlook the fact that these treatments are no use for improving the patients' health status.

IV. What Makes the EOL care Supply-Sensitive

1. Common Misconception

First of all, the very simple and basic reason leads to the overuse of care in end-of-life. The generally held assumption, common to both doctors and patients, that more frequent intervention constitutes better care – that whatever resources are available should be fully utilized in managing difficult illnesses – sometimes influence clinical decisions by the available supply of resources.²⁰⁾ This assumption is easily made even by the professional because there is no certain and universally fit solutions in medical treatments. Since the clinical decisions are in the "gray areas" of medicine, where evidence is lacking, any expansion of capacity will result in a subtle change in clinical judgment toward greater intensity.²¹⁾

2. Physicians' Mission for Patients

Physicians are in a very tough position. They need to save patients, while they also need to do what is best for the patients, and sometimes those two

20) Wennberg JE, Fisher ES, Goodman DC, et al.(2008) Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute for Health Policy and Clinical Practice.

21) Wennberg JE, Fisher ES, Goodman DC, et al.(2008). Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute for Health Policy and Clinical Practice.

missions can be contradictory to each other. Then what would they do for themselves?

One study in 2013 conducted a survey and 1081 young physicians who were completing training at two university-affiliated medical centers. The survey was to ask choices they would make for themselves if they were terminally ill. 88.3 percent would choose a do-not-resuscitate or "no code" status: they predominantly wish to forego high-intensity treatments for themselves at the end-of-life.²²⁾

This is what actually happens among physicians: from the viral weblog article "How Doctors Die", Kevin Murray, MD and the professor at University of Southern California, he confesses how doctors actually die unlike their patients. "They know enough about modern medicine to know its limits. And they know enough about death to know what all people fear most: dying in pain, and dying alone. They want to be sure, when the time comes, that no heroic measures will happen – that they will never experience, during their last moments on earth, someone breaking their ribs in an attempt to resuscitate with CPR, which happens if CPR is done right."²³⁾ What they would do to themselves is quite the opposite from what they are doing for their patients.

In the article of Diane Meier, who won a MacArthur "genius grant", she mentions about the situation where a 73 year old man with cancer did not want to get the invasive testing and treatment. Doctors claimed that he is engaging in denial, and pressured him and his family to get further testing

22) Periyakoil VS, Neri E, Fong A, et al.(2014). Do Unto Others: Doctors' Personal End-of-Life Resuscitation Preferences and Their Attitudes toward Advance Directives. PLoS ONE 9(5):e98246. doi:10.1373/journal.pone.0098246.

23) <http://www.zocalopublicsquare.org/2011/11/30/how-doctors-die/ideas/nexus/>(Zocalo Public Square :: How Doctors Die) (5/22/2014).

and treatment only to subject him to 47 days of painful and invasive treatment before dying.²⁴⁾ From Meier's point of view, usually it is not the patients who are "in denial" about their illnesses, but it is the doctors.²⁵⁾

Why would this happen? It is because it is believed that physicians are called to save patients' lives. Meier told the BMJ, "Physicians are trained to believe that delaying death, even for days, is their principal mission. Medical students are taught to do things, not how to know what not to do. Medicine is a very action based profession, and that's how physicians in the US are paid, perhaps not coincidentally."²⁶⁾

Physicians are treating patients not in the way they would want for themselves. It does not mean they are being negligent, but they are being too much on the patients because they are misinterpreting their professional mission. They have a calling to provide what is best for their patients, and it cannot always be prolonging the end of life. They would have to understand the fact many times they are doing it not right for their patients.

3. Lack of End-of-Life Care Decision

This reason is what I will emphasize on. Since it is a legal and policy issue, it will make actual differences in the effectless supply-sensitive care in end-of-life period. First we need to understand that patients have the right to decide about their health care, and specifically they have the

24) Morrison RS, Meier DE, Cassel CK. (1996). When Too Much is Too Little. *N Engl J Med.* 335:1755–1759.

25) Lenzer J. (2012). Unnecessary Care: Are Doctors in Denial and is Profit Driven Healthcare to Blame?. *BMJ.* 345:e6230.

26) Lenzer J. (2012). Unnecessary Care: Are Doctors in Denial and is Profit Driven Healthcare to Blame?. *BMJ.* 345:e6230.

right to refuse medical treatment. The right has been enhanced by statutes by many states, historically started from California's Natural Death Act which was the first of its kind in the US.²⁷⁾ This legal system is called advance healthcare directive which is for people to plan end of life care ahead and communicate treatment preferences early on. There are two types: one is Living Will, and the other is Power of Attorney. The basic principle of living will is that any adult with capacity or emancipated minor may give an oral or written instruction to a health-care provider, which remains in force even after the individual loses capacity. The written power of attorney for health care lets the adult or emancipated minor authorize an agent to make any health-care decision that the principal could make while having capacity.²⁸⁾

As of 2013, all the fifty states and Washington D.C. have been enacted Power of Healthcare Attorney or Health Care Proxy. And Washington D.C. and all the states except for Massachusetts, Michigan, and New York, have Living Will statutes that make a living will properly executed and legally binding.²⁹⁾ However, even in states where living will is not recognized as legally binding, in Michigan for instance, a living will is sometimes combined with a valid Durable Power of Attorney for Health Care to help the advocate to understand the patient's treatment choices.³⁰⁾

27) Towers B. (1978). Report from America. *Journal of Medical Ethics*. 1978; 4: 96-98.

28) <http://www.uniformlaws.org/ActSummary.aspx?title=Health-Care%20Decisions%20Act> (Health-Care Decisions Act Summary) (visited 5/20/2014).

29) 석희태, “말기의료에 관한 미국법제의 연구-말기의료 결정 제도를 중심으로”, 『의료법학』, 제14권 제1호, 2013, 제360~361면. (Suk H. (2013). Legislative Approaches to Terminal Care Issue in the U.S.A.: Acts on Terminal Health-Care Decision. edited by The Korean Society of Law and Medicine, *Law and Medicine*. 14(1):360-361).

30) Advance Directives: Durable Power of Attorney for Health Care.(2011). University of Michigan Health System.

Even though there are well-built legally binding advance directives, most Americans still do not make their end-of-life care decision. The study from U.S. Agency for Healthcare Research and Quality has shown these three factors about decision makings among the terminally ill/chronically ill patients. First, less than 50 percent of the chronically or terminally ill patients had an advance directive in their medical record. Second, only 12 percent of patients with an advance directive had received input from their physician in its development. And between 65 and 76 percent of physicians whose patients had an advance directive were not aware that it existed.³¹⁾

How can this happen even when there is a well-built legal system? This is an important problem to consider since it leads to the more unnecessary EOL care, with low benefits for the patients. There are several reasons that might influence these results.

First, from patients' side, lack of information or the negative ideas would be the biggest problem. Many people are not familiar enough to the advance directive. Even when they are aware of the legal system, lack of planning itself might occur unless they are well helped and guided by professionals. They also have religious and personal values that are opposing the idea of deciding their own health care. And oftentimes families are opposed to the patients' will even when they are aware of it. They love their family members, and they might want to prolong their life as long as possible. And most of the time, they do not even know the exact wish of the patients.

Secondly, from physicians' point, the physicians might have moral issues about suggesting or even informing their patients in the first place,

31) The U.S. Agency for Healthcare Research and Quality. (2003). Advance Care Planning: Preferences for Care at the End of Life.

resulting in the patients' lack of information. The physicians make oaths that the patients' well-being comes before anything. This makes them ethically and professionally confused sometimes. Even when the patients already have their advance directive, the relative physicians might not put it in development because of their moral values as medical professions. One study showed how doctors and nurses in the Adult Intensive Care Unit suffer from moral distress, in EOL care decision-making. "Many deaths in intensive care involve decisions about withholding and withdrawing therapy, potentially triggering moral distress."³²⁾ We have to understand doctors are not always sure about what to do in certain situations. They have to decide whether to follow or to compromise with their own personal or professional values every moment, especially in end-of-life care.

4. Legal Issues

The legal system mentioned above helps reducing supply-sensitive care, on the other hand there are legal restrictions leading more treatment. For example, by law, Medicare cannot reject any treatment based upon cost: it will pay \$55,000 for patients with advanced breast cancer to receive the chemotherapy drug Avastin, even though it extends life only an average of a month and a half.³³⁾ Basically, the aggressive care is protected by legal policy, even when it is clear that the treatment is almost effectless but extremely costly.

Physicians or the hospitals' concern about the legal responsibilities could

32) Ledger U, Begley A, Reid J, et al.(2012). Moral Distress in End-of-Life Care in the Intensive Care Unit. *Journal of Advanced Nursing*. 69(8):1869-1880.

33) <http://www.kevinmd.com/blog/2010/12/cost-keeping-terminally-ill-alive.html> (The Cost of Keeping the Terminally Ill Alive) (visited 5/17/2014).

also cause the unnecessary use of medical resources. Physicians risk civil, criminal, and administrative liability for the end-of-life care, and only few of them know about law, causing their fears of the liability, and the fears of liability ends up with inappropriate defensive medicine or unnecessary intense treatment.³⁴⁾

5. Management Strategy

Managing hospitals is also business, either public or private. The hospitals would want financial return by utilizing infrastructure and physicians, rather than wasting their resources by idling them. If they already have enough beds in their ICU, they should fill patients in and give them more treatments in order to get more profits. There seems to be no reason not to utilize the medical resources they already have, since it is for treating or saving the patients. To maintain the hospital, they need to run the hospital and especially the end-of-life care since there are many inpatient treatments and aggressive treatments.

V. Suggestions

High-intensity end-of-life care is associated with poor quality of life and of death, as well as higher costs, and, in some cases, reduced survival.³⁵⁾ The more treatment does not always mean the better utility for

34) Selkin S.(2004). End-of-Life Liability Issues. *Ethics, Laws, and Aging Review*. 10: 93–107.

35) Wright AA, Zhang B, Ray A, et al.(2008). Association between End-of-Life Discussions, Patient Mental Health, Medical Care Near Death, and Caregiver Bereavement Adjustment. *JAMA*. 300(14):1665–1673.

patients. This is never cost-effective. This supply-sensitive care causes unnecessary care when patients actually prefer palliative care than aggressive care. Advance directive is crucial for cutting down costs from over-treatment and also for improving patient satisfaction. There is a study shows the correlation of health care costs in the last week of cancer patients' life with end-of-life conversation. And it says that advanced cancer patients who reported EOL conversations with physicians had lower medical costs in their final week of life compared to those who did not, which is largely a function of their more limited use of intensive interventions.³⁶⁾ On the other hand, there should be alternative strategies for medical management. Hospitals try to make more profits from EOL care by utilizing their resources as much as possible and it leads to overtreating the patients. As long as their goal is to make profits from supplying more medical services, supply-sensitiveness in EOL care cannot easily be resolved. Thus, the full implementation of the advance directive would be vital for solving the problems of supply-sensitive care in end-of-life. And also, the medical managements should find alternative strategies for making more profits rather than overtreating EOL patients.

1. Full Implementation of Advance Directive

In order to implement the advance directive properly.

(1) Ethics Education for Physicians

First of all, physicians need to understand that conventional "do

36) Zhang B, Wright AA, Huskamp HA, et al. (2009). Health Care Costs in the Last Week of Life: Associations with End of Life Conversations. *Arch Intern Med.* 169(5): 480-488.

everything" idea is not always beneficial for their patients at the end-of-life, and they also have to be willing to take actions as what they already know. Many physicians would rather give up on treatments and die with family at home while they would do every possible treatments unto the patients.³⁷⁾ They need to think differently than the common thoughts, but it is never easy to change the attitude for them who have strong calling to save patients. Thus, ethics educations should be held more actively for physicians who have moral and professional confusion towards less intense End-of-Life care. It can be from medical schools or academic societies for medical ethics. As what physicians learn – "First, do no harm" – they will carefully think about what will harm and benefit their patients at the end-of-life.

(2) More Conversations between Physicians and Patients

Physicians have to provide more detailed information for the patients, families, and professional caregivers about the natural courses of terminal illness/chronically illnesses in end-of-life: dying, symptoms, and principles of appropriate end-of-life care. Conversations are the core key to the better end-of-life treatment. There is an article shows that patients who have EOL care conversations with their physicians have a greater chance of receiving the type of care they prefer.³⁸⁾ ³⁹⁾ These

37) <http://www.zocalopublicsquare.org/2011/11/30/how-doctors-die/ideas/nexus/> (Zocalo Public Square :: How Doctors Die) (visited 5/22/2014).

38) Mack JW, Weeks JC, Wright AA, et al.(2010). End-of-Life Discussions, Goal attainment, and Distress at the End of Life: Predictors and Outcomes of Receipt of Care Consistent with Preferences. *J Clin Oncol.* 28(7): 1203–1208.

39) Wright AA, Mack JW, Kritek PA, et al.(2010). Influence of Patients' Preferences and Treatment Site on Cancer Patients' End-of-Life Care. *116(19): 4656–4663.*

discussions, especially when occurring relatively early in the course of illness, are associated with greater use of palliative care and hospice and with less aggressive end-of-life care,⁴⁰⁾ opposing a general trend about more aggressive care in the last months of life.⁴¹⁾

(3) Incentives to the Physicians for Conversations

For the physicians who have conversations about advance care plan and suggest more conservative care than aggressive care should be getting incentives. It might sound immoral, but considering the poor and even cruel utility outcomes for the patients with intense care, and the fact they cannot get the treatments that they actually prefer, it would not contradict the physicians' professional ethics. It is highly effective method to encourage physicians to suggest the "right" care for individual patient, by compensating their efforts. This has high risk of being criticized as if the government is promoting to people at the end of life to end their life as early as possible. Obamacare became very much controversial since it includes a section benefiting doctors who consults with the patients about advance directive. It was politically criticized as "death panels", which made it sound like the new rule will forcefully opt out beneficiaries from the care in order to reduce the health care costs. However, the actual bill requires the Medicare program to reimburse doctors if a Medicare beneficiary asks them for consultation on advanced care, end-of-life planning considerations like how to make a living will, assign people to

40) Mack JW, Cronin A, Taback N, et al.(2012). End-of-Life Care Discussions Among Patients with Advanced Cancer: A Cohort Study. *Ann Intern Med.* 156(3): 204-210.

41) Earle CC, Neville BA, Landrum MB, et al.(2004). Trends in the Aggressiveness of Cancer Care Near the End of Life. *J Clin Oncol.* 22(2): 315-321.

make health care decisions for them (durable power of attorney), and hospice care.⁴²⁾ This bill is not active enough since it only includes "voluntary" advance care planning, unless patients are already well familiar and informed with the advance directive. Thus, there should be more aggressive policies towards advanced care planning.

(4) Education for People in General

There should be more active education in order to correct common misconceptions about the effectiveness of aggressive medical interventions. This is the education for general, who are not related to the terminally ill, yet having healthy life who do not have to think about this matter at the moment. The advance directive is for planning "in advance", so actually that is when people need to consider the matter of end-of-life care. There are several non-profit organizations and campaigns who promote health care decisions. There is an annual promoting day which is called National Healthcare Decision Day (April 16). "It is a collaborative effort of national, state and community organizations committed to ensuring that all adults with decision-making capacity in the United States have the information."⁴³⁾ These organizations are trying to reach out to people in general so they can get information and wisely decide about their end-of-life care. However, it is not being well supported or advertised among people. Only people with great interest might learn about the campaigns. In order to have more effects, official and governmental actions

42) <http://usgovinfo.about.com/od/healthcare/a/deathpanels.htm> (Obamacare Death Panels: The Fact) (visited 5/20/2014).

43) <http://www.nhdd.org/case/> (National Healthcare Decision Day Case Statement 2013) (visited 5/16/2014).

have to be taken.

(5) Easy and Official Registry System

The official system for easy access to the personal advance care plan has to be built. For example, online registry system can be accessed very easily with less costs for people who want to present their end-of-life care. It has to be easy to access, to decide the plan at first and also easy to update afterwards. Even people with information on the advance care often do not take in action because they are usually not familiar with how to make documents needed such as living will, and even when they do, it is easily to get lost or forgotten. Thus, it is better to build a system that anyone can access from anywhere at anytime, and that presents patients' plans for their end-of-life care to the medical institutes when it is actually needed. In order to make it easy to access and present to the medical care providers efficiently, the system would be better to be online registry. There are online registry system for only several states. In 2002, North Carolina was the first state to establish an online advance health directive registry, followed by Arizona, Montana, Vermont, Washington, according to the Democratic Leadership Council.⁴⁴⁾ However, it is not all very active, and Washington state even has shut down the system after four years because of budget shortage.⁴⁵⁾ There should be more supports on this system, more states offering the system, and national registries in the long run.

44) <http://www.dlc.org/print0a56.html?contentid=253947> (Online Access to Living Wills) (visited 5/18/2014).

45) http://seattletimes.com/html/localnews/2015478485_apwalivingwillregistry.html (Washington State Ends Living Will Registry) (visited 5/28/2014).

2. Alternative Strategies in Management

Hospitals with more resources would want to utilize all their resources rather than idling them. The managements at hospitals would always try to minimize those surplus ICU beds, equipments, and other resources they already own, in order to make more profits. However, thinking of the characteristics of the medical provider, they should not simply make more profits from providing more and intense treatments to the patients. They must think about the consequences – which is quite negative – and exhaust other methods for the profits. One of the methods the management should exploit could be cutting unnecessary costs, since this will be helpful even in the long run. For example, supply-chain spending of medical providers is one of important issues for high costs of health care in the US. Supply chain management can often consume up to 35 percent of a hospital's operating budget, second to the labor.⁴⁶⁾ Although there have been debates on whether low supply-chain spending causes low quality of medical services, it is actually an important target area for cost reduction.⁴⁷⁾

Maybe there would not be the possible alternative that is as profitable as fully utilizing the resources for more treatments, but they need to notice that there has been a debate on 'what is a greatest responsibility for corporations in general: to make a profit or to make a difference for the world'.⁴⁸⁾ Needless to say, healthcare business should be more careful about this issue than any other corporations. According to Eric Silfen, MD,

46) <http://www.healthcarefinancenews.com/directory/supply-chain> (Supply Chain - Healthcare Finance News) (visited 5/30/2014).

47) Kamani P.(2004). Hospital Supply Chain Savings. ASCET. Vol. 6.

48) <http://www.theatlantic.com/health/archive/2014/03/making-profits-and-differences-at-hospitals/359626/> (Making Profits and Differences at Hospitals - The Atlantic) (visited 5/30/2014).

chief medical officer of Phillips Healthcare, says, "Instead of being purely profit driven, healthcare managements need a medical consciousness, turning what might otherwise seem mere jobs into vocations, true calling. Not only physicians and nurses, but also the people in research and development, marketing, and sales need to feel that they are making a difference in the world."⁴⁹⁾ Social responsibility is more highly required in the field of healthcare. Thus, they need to choose what the most beneficial for patients even if it is not the best option for more profits is.

VI. Conclusion

A number of studies demonstrate that the high-cost, and intense end-of-life care does nothing for improving the outcomes for terminally ill/ chronically ill patients at their last moments of life. The EOL care is supply-sensitive which overlooks what patients need or prefer but driven by the resources the hospital has.⁵⁰⁾ The more the resources, the more intense treatments for the patients - no matter what the outcome is. It significantly causes higher costs in health care, but without much positive outcomes: it is not cost-effective.

The outcome is very poor. It has been proved that the objective factor, mortality is not reduced from the more intense care, but it was actually

49) <http://www.theatlantic.com/health/archive/2014/03/making-profits-and-differences-at-hospitals/359626/> (Making Profits and Differences at Hospitals - The Atlantic) (visited 5/30/2014).

50) Wennberg JE, Fisher ES, Goodman DC, et al.(2008). Tracking the care of patients with severe chronic illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute for Health Policy and Clinical Practice.

increased in small rate.⁵¹⁾ The subjective outcome, patient preference was also negative on intense and aggressive treatment: the more intense the treatments was, the more dissatisfied the patients felt.⁵²⁾

Actually what patients prefer was quite the opposite of the reality. According to the survey held by Barnato, the majority of them preferred to stay at home than hospitals, and conservative treatment than aggressive care even when the treatments can lengthen their life for one month.⁵³⁾ Moreover, the patients at the end-of-life care with terminal illnesses were worried about their dignity as a human being. Some patients even wanted assisted suicide because of this reason, although it is a small number.⁵⁴⁾

The reasons I could find for the supply-sensitive EOL care were, first, the common misconception that the more medical intervention leads to the better quality for patients.⁵⁵⁾ Second, it was physicians' professional mission that they have to do everything for saving patients' lives. Thirdly, it was because of the lack of utilizing the legal system for end-of-life care planning.⁵⁶⁾ Also, it was caused by physicians' fears of legal liabilities, since physicians are oftentimes sued in end-of-life care.⁵⁷⁾ The fifth

51) Fisher ES, Wennberg DE, Stukel TA, et al. (2003). The Implications of Regional Variations in Medicare Spending. Part 2: Health Outcomes and Satisfaction with Care. *Annals of Internal Medicine*. 138 (4): 288–322.

52) Wennberg JE, Bronner K, Skinner JS, et al. (2009). Inpatient Care Intensity and Patients' Ratings of Their Hospital Experiences. *Health Affairs*. 28 (1): 103–112.

53) Barnato AE, Herndon MB, Anthony DL, et al. (2007). Are Regional Variations in End-of-Life Care Intensity Explained by Patient Preferences?: A Study of the US Medicare Population. *Med Care*. 45(5): 386–394.

54) Oregon's Death with Dignity Act: Annual Report 2013. Oregon Health Authority. (2014).

55) Wennberg JE, Fisher ES, Goodman DC, et al.(2008) Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. The Dartmouth Institute for Health Policy and Clinical Practice.

56) Advance Care Planning: Preference for Care at the End of Life.(2003). The U.S. Agency for Healthcare Research and Quality.

possible reason is, that the hospitals also want to make financial benefits, and there is no reason for them to idle the resources.

In order to reduce supply-sensitive care in EOL service, the treatment should be more conservative rather than aggressive. That means, more palliative care than intense care is needed. This can be done by properly considering the patients preference. Fully implementing advance directive could be the one of solutions, and the other would be alternative strategies in medical management. In order to promote patients' advance healthcare planning, ethics education for physicians about end-of-life care has to be held more actively. And more conversations between physicians and patients will be helpful for the least use of aggressive EOL care.⁵⁸⁾ The education emphasizing the importance of advance directive towards the general public is also crucial. To motivate physicians to have conversations with patients, there should be some official incentives for their efforts. And for the better implementation of advance directive, there should be easy access system of submitting and presenting the advance directive. Along with the proper utilization of legal system, there should be the proper management strategy. The managements should exhaust other methods other than overtreating end-of-life patients for their profits.

The supply-sensitive end-of-life care for the terminally ill/chronically ill causes unnecessary spending with poor utility of patients. This problem has been discussed for a long time in the US, and many economists, lawyers, doctors, managements, and politicians tried to resolve this issue. However, since it is the matter of life and death, a number of politically or

57) Selkin S.(2004). End-of-Life Liability Issues. *Ethics, Laws, and Aging Review*. 10: 93-107.

58) Earle CC, Neville BA, Landrum MB, et al.(2004). Trends in the Aggressiveness of Cancer Care Near the End of Life. *J. Clin. Oncol.* 22(2): 315-321.

philosophically conservative people still cannot change their negative ideas on less aggressive care at the end-of-life. Those people make it challenging to enact and implement policies for advance directive. Thus, there should be more active campaigns and educations in order to make the policy favorable to the public.

Also, the medical management strategy should be more developed further, so the hospitals would not have to depend on utilizing their resources and giving unnecessarily more services. As analyzed from AHA (American Hospital Association), one of must-do strategies for hospitals to succeed in the future is to improve efficiency through productivity and financial management.⁵⁹⁾ Providing unnecessary services and utilizing resources can make profits, but it cannot be considered as efficient or productive. There should be further studies on strategies how to provide better services with less resources.

Medicare policy might need to be constantly refined as well, for example, it might need to be more strongly eliminating dichotomy between curative and palliative care, so patients do not have to make a drastic choice, but can instead ease into acceptance of hospice services⁶⁰⁾. Also the improvement of policy for detecting abuse of end-of-life care might be needed. Unnecessary treatments that is profit driven or careless should not be overlooked. There should be further works to develop Medicare's efficient methods to evaluate the treatments at the end-of-life whether being abused.

59) American Hospital Association.(2011). Hospitals and Care Systems of the Future. Chicago: American Hospital Association. Sep 2011.

60) http://www.aslme.org/print_article.php?aid=460404&bt=ss#_ftn1 (Health Care Reform at the End of Life: Giving with One Hand but Taking with the Other, American Society of Law, Medicine & Ethics) (visited 6/1/2014).

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<http://www.medicarenewsgroup.com/context/understanding-medicare-blog/understanding-medicare-blog/2013/06/03/end-of-life-care-constitutes-third-rail-of-u.s.-health-care-policy-debate> (End-of-Life Care Constitutes Third Rail of U.S. Health Care Policy Debate).

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<http://www.theatlantic.com/health/archive/2014/03/making-profits-and-differences-at-hospitals/359626/> (Making Profits and Differences at Hospitals - The Atlantic) (visited 5/30/2014).

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말기의료의 경제적 요소에 관한 논의: 미국 메디케어 상황을 중심으로

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=국문초록=

한 자료에 의하면 2011년 미국의 의료비 지출 총액은 국내총생산의 약 18 퍼센트에 달하였으며, 그 비율은 다른 대다수 선진국의 두 배에 해당하는 것이었다. 그중 메디케어 비용은 전체 의료비의 21 퍼센트인 5540억 달러 였는데, 환자의 최후 6 개월에 들어간 의료비는 그 5540억 달러의 28 퍼센트 (전체 의료비의 5.9 퍼센트)인 1700억 달러에 달하였다.

이러한 말기의료의 고비용성은 어떤 사유에 기인하며, 그 해소 방안은 무엇인가. 지난 수십 년 간의 의료경제학적 연구는 말기의료의 일반적으로 공급민감성을 지니며 비용대비 효율성이 매우 낮다는 결론에 도달하였다. 의료서비스 공급의 양은 질병의 정도나 환자의 선호도와는 무관하고, 그보다는 의료서비스 공급자원에 민감하게 반응한다는 것이다. 이는 말기의료에서는 의료자원이 과용된다는 것을 의미한다.

한편 "더 많은 의료처치에 더 나은 효용"이라는 일반적인 추론과는 반대로, 많은 의료처치의 결과는 오히려 매우 부정적인 것이었다. 실제 환자들의 선호와 관심사는 격렬한 말기의료의 기도를 하는 것과는 아주 달랐던 것이다.

이 논문은 먼저 말기의료에서의 공급민감성의 원인을 분석한다. 그 원인으로서는 격렬한 치료와 그 효용성에 대한 일반적인 오해, 의사들의 환자에 대한 직업적인 사명 의식, 환자 자신의 말기의료 의향결정의 부재, 의사들의 법적 책임에 대한 우려, 의료기관의 경영차원에서의 관리전략 등을 들 수 있다.

다음으로, 논문에서는 말기의료의 공급민감성에서 연유하는 과잉진료에 대한 현실적 해결책을 제시한다. 그 해결책은 두 가지 측면으로 나누어서 들 수

있는데, 하나는 사전의료의향서 제도의 활성화 방안이고, 다른 하나는 의료기관 경영관리전략적 관점에서의 방안이다.

우선 사전의료의향서의 활용도를 제고하기 위해서 다음과 같은 구체적인 노력이 필요하다. 즉 의사들의 말기의료에 대한 태도를 바꾸도록 하는 새로운 의료윤리 교육 실시, 의사와 환자 간 말기의료에 대한 소통 기회의 강화, 환자와 말기의료에 대한 대화를 적극적으로 실천하는 의사에 대한 보상제도 도입, 일반 공공에 대한 관련 교육 확대, 온라인 등록시스템과 같은 용이하고도 공식적인 사전의료의향서 등록체제의 구축 확대 등이 필요하다.

경영관리적 측면에서는 대체 전략이 필요하다. 예컨대 불필요한 비용을 절감하고 의료공급자로서의 가치를 재정립하는 등의 새로운 재무전략과 경영교육계획 등이 고려되어야 할 것이다.

효과적으로 말기의료의 경제적 문제점을 해소하고 환자에게 더 나은 의료 경험을 제공하기 위해서는 의료·환자·국가 등 모든 부문에서 관행과 오해에서 비롯된 신조가 시급히 수정되어야 하고, 그 기초 위에서 제도와 문화가 개선되어야 하는 것이다.

주제어: 의료경제, 말기의료, 연명의료, 의료의 공급민감성, 비용효율성, 사전의료의향서, 의료관리전략

Health Economic Approach to End-of-Life Care in the U.S. : Based on Medicare

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=Abstract=

According to one Medicare report, in the US, total federal spending on health care expends almost 18 percent of the nation's GDP, about double what most industrialized nations spend on health care. And in 2011, Medicare spending reached close to \$554 billion, which amounted to 21 percent of the total spent on U.S. health care in that year. Of that \$554 billion, Medicare spent 28 percent, or about \$170 billion, on patients' last six months of life.

So what are the reasons of this high cost in EOL care and its possible solutions?

Much spendings of Medicare on End-of-Life care for the terminally ill/chronically ill in the US has led health economics experts to assess the characteristics of the care. Decades of study shows that EOL care is usually supply-sensitive and poor in cost-effectiveness. The volume of care is sensitively depending on the supply of resources, rather than the severity of illness or preferences of patients. This means at the End-of-Life care, the medical resources are being overused. On the other hand, opposed to the common assumption, "The more care the better utility", the study shows that the outcome is very poor. Actually the patient preference and concerns are quite the opposite from what intense EOL care would bring about. This study analyzes the reasons for the supply-sensitiveness of EOL care. It can be resulted from the common misconception about the intense care and the outcome, physicians' mission for patients, lack of End-of-Life Care Decision which helps the patients choose their own preferred treatment intensity. It also could be resulted

from physicians' fear of legal liabilities, and the management strategy since the hospitals are also seeking for financial benefits. This study suggests the possible solutions for over-treatment at the End-of-Life resulting from supply-sensitiveness. Solutions can be sought in two aspects, legal implementation and management strategy. In order to implement advance directive properly, active ethics education for physicians to change their attitude toward EOL care and more conversations about end-of-life care between physicians and patients is crucial, and incentive system for the physicians who actively have the conversations with patients will also help. Also, the general education towards the public is also important in the long run, and easy and official advance directive registry system - such as online registry - has to be built and utilized more widely. Alternative strategies in management are also needed. For example, the new strategic cost management and management education, such as cutting unnecessary costs and resetting values as medical providers have to be considered. In order to effectively resolve the problem in EOL care for the terminally ill/chronically ill and provide better experience to the patients, first of all, the misconception and the wrong conventional wisdom among doctors, patients, and the government have to be overcome. And then there should be improvements in systems and cultures of the EOL care.

Keywords : Health Economics, End-of-Life Care, Life-Sustaining Care, Supply-Sensitive Care, Supply-Sensitiveness, Cost-Effectiveness, Advance Directive, Medical Management Strategy