Cooperative Engagement Theory:
Stakeholder Engagement as an Explanation of Hospital Medicare Charges

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Cooperative engagement theory predicts that organizations will act more responsibly the more they engage with NGO stakeholders who themselves act as agents for societal interests. This study empirically tested, and strongly confirmed, cooperative engagement theory in the hospital industry for COPD, heart failure, and mental illness. Using hierarchical linear regression, we found that the more NGOs, and NGO-posing GOs, were included on the hospital's website (our proxy for NGO engagement), the lower the hospital's Medicare and non-Medicare charges. We present and discuss finer-grained results, and discuss implications of our results for the hospital industry and cooperative engagement theory in general.

INTRODUCTION

Why do corporations exist? A number of 'theories of the firm' have been developed over the past 100 years or so to answer this question. Corporations invariably exist for the sole purpose of making a profit for stockholders/owners (profit maximization), to minimize the effects of greed in society (agency theory), because they are more profitable than failing ones (evolutionary theory), because they have made superior strategic choices (the Resource-Based View), because they are regarded and respected as institutions in society (institutional theory), because society allows them to exist, for the purpose of serving society's needs (corporate social responsibility), and/or to meet the needs of all of the individuals and groups who hold a 'stake' in the corporation's success (stakeholder theory). (For reviews on these various perspectives, see Lozano, Carpenter & Huisingh, 2015; Kulik & Baker, 2008; and Perrow, 1986.) Efforts have been made to integrate these differing, sometimes contradicting, perspectives, with limited success. For example, Kulik & Baker (2008) and Perrow (1986) recognized the coexistence of multiple perspectives as a complex representation of real life; Porter and Kramer (2006) took a win-win approach toward stakeholder engagement, proposing the reconciliation of profit-maximization and obligations to stakeholders through cooperative shared value; and Lozano, Carpenter & Huisingh (2015) integrated the perspectives into a single holistic 'sustainability' perspective:

"The firm is a profit-generating entity in a state of constant evolution. This entity is a system comprised of resources and networks of relationships with stakeholders. The firm's employees are responsible to represent the firm, manage its resources, and empower its stakeholders so that the firm complies with laws, maintains its 'license-to-operate', increases its competitive advantage, and better contributes to foster the evolution of more sustainable societies by holistically addressing the economic, environmental, social, and time dimensions" (p. 430).

In this paper, we investigate and empirically test the idea that the firm is "a system comprised of resources and networks of relationships with stakeholders" with hospitals' medicare charges from data supplied by the U.S. government in 2013. In other words, we test Stakeholder Theory with the proposition that the more hospitals engage with stakeholders, the more those hospitals will behave socially responsibly. More specifically, we test the hypothesis that hospital-NGO (non-government organization) engagements have a positive effect on hospital performance in the form of more reasonable (i.e., lower) Medicare charges to the federal government and residual charges to the individual patient. We chose to study the hospital industry because of the clear responsibility that hospitals have in meeting the health needs of society, regardless of the for-profit or non-profit legal structure of any particular hospital. In addition, there exists a large and growing number of NGOs that advocate society's needs in every area of any hospital's services and treatments. If the stakeholder-CSR perspective is valid anywhere in society, then surely must exist among NGO-hospital engagements in the health care industry. Furthermore, we expand on earlier theory and preliminary findings (Kulik & Giacomelli, 2015) with richer theoretical development and more sophisticated and extensive testing of a richer and expanded dataset.

THEORY

A generally-accepted 'classical' definition of a 'stakeholder' is " any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman, 1984, p. 46). From here, much work has been done by researchers to 'fill the paradigm' of the three approaches to stakeholders that Donaldson & Preston (1995) identified, namely the instrumental, normative, and descriptive approaches to the theory, generally from the perspective of how and why the firm stands to benefit. Subsequent studies have confirmed benefits to the firm with enhanced profitability and competitive advantage (Choi, & Wang, 2009), by identifying, and mapping stakeholders based on type and priority (e.g. Mitchell, Agle & Wood, 1997), by engaging stakeholders meaningfully (e.g. Gilbert & Rasche, 2007; Hendry, 2005), by arriving at a deeper understanding of a stakeholder's needs (Henisz, Dorobantu, & Nartey, 2014; Harrison, Bosse & Phillips, 2010), and by following positive examples as demonstrated in case studies (e.g. Kourula, 2010; Dobele et al., 2014), among other approaches. As stakeholder management is essentially a negotiation, Porter & Kramer (2006) proposed a win-win solution to create 'shared value' between the corporation and stakeholders by discovering and implementing projects and programs that benefit both the corporation and stakeholders simultaneously – for example, if a company were to switch its lighting systems to those containing LEDs, the company stands to benefit with lower electricity and maintenance costs, while stakeholders that would stand to benefit would be the company's shareholders and investors (due to a higher rate of return), the environment (because of less pollution generated from electricity production), suppliers (of LED lighting systems), and NGOs such as Green America. However, an even more responsible approach would for the company's CEO to contact Alisa Gravitz, the current CEO of Green America, and ask for someone to work with the company on all the ways that Green America can find for the company to save on expenses and become 'greener' at the same time. This further step of CEO engagement is an example of cooperative engagement, the subject of a growing body of literature on how companies and stakeholder group can improve their engagement efficiency and effectiveness (e.g. Olsen, 2017; Skilton & Purdy, 2017; Masso, Liberatore & Mazzi, 2017; and Schnackenberg & Tomlinson, 2014). Kulik & Giacomelli (2015) addressed the stakeholder-firm engagement & efficiency issue with their Cooperative Engagement

Theory, positing that, rather than engage directly with individual members in the local and global population, it would be far more efficient and effective if firms engaged with appropriate NGOs who represent societal interests, such as Green America mentioned above. This abstraction allows a firm's stakeholder management activities to be less complex, enabling the firm's executives and agents to engage with a smaller group of stakeholders which nevertheless represent the interests of significant segments of the population. Therefore, Kulik & Giacomelli (2015) hypothesized that hospitals would charge Medicaid less the more NGOs it engaged in, we restate here more generally:

> *Hypothesis 1: Engagement with NGOs related to an illness will cause hospitals to behave more responsibly with lower Medicare charges.*

However, it is also common practice for hospitals to also charge others, including the patient, over and above the Medicare charge. While some of the variation in non-Medicare charge depends on how a hospital structures its costs, at least some of these parties (i.e., the patient) are also obviously stakeholders who have an interest in the hospital lowering these charges as well. Therefore:

> *Hypothesis 2: Engagement with NGOs related to an illness will cause a hospital to behave more responsibly with a lower non-Medicare charge, whenever a hospital charges Medicare for treating an illness.*

It therefore stands to reason that, if a hospital is to be fully responsible, then H1 and H2 would both be true simultaneously:

> *Hypothesis 3: Engagement with NGOs related to an illness will cause a hospital to behave more responsibly with lower Medicare charges **and** lower non-Medicare charges, whenever a hospital charges Medicare for treating an illness.*

METHOD

Dataset

We used the same 2013 Medicare charges dataset as in Kulik & Giacomelli (2015), available from the Centers for Medicare and Medicare Services at Medicare.gov, and we sampled hospitals for inclusion in our database based on illness and availability of data (a few hospitals in our random sample no longer existed in 2016 when we collected engagement data). From our dataset of 163,072 Medicare charges per hospital and per diagnosis related group (DRG), we randomly selected a sample of 366 hospitals across three DRGs: COPD with major complication or comorbidity (DRG 190, n = 150), heart failure (DRG 293, n = 150) and mental illness (DRG 885, n = 66). As Kulik & Giacomelli's (2015) results were marginally significant for the NGO engagements variable at n = 100, we increased the sample size for DRGs 190 and 293 to 150 to see if the marginal significance was due to a small sample size or the nature of the variable itself. We chose mental illness because this is a very sort of illness compared to COPD and there is no death rate measurement for this illness; rather, we used the US News and World Report's 2012-2013 quantitative score on the hospital's psychological care performance. Unfortunately, only 69 hospitals were included in both in the US News scoring list and the Medicare charge list, so we were limited to a sample size of 66 hospitals (the University of Pennsylvania was removed because it was a dominant outlier, while two others were removed from lack of data) for DRG 885.

Control Variables

We used the same control variables as in Kulik & Giacomelli (2015): distinctions, 30-day mortality, number of licensed beds, and business structure (simplified as profit and not-for-profit, dummy-coded as 0 and 1, respectively). We obtained data on the control variables from hospitalcaredata.com and the American Hospital Directory (ahd.com), using the hospital's unique Provider ID number supplied by the

Medicare database. As discussed above, we substituted hospital mortality with US News & World Report mental health treatment performance score. For our combined dataset of all three DRGs, as mortality is really a measure of hospital 'performance' with respect to a particular DRG, we 'normalized' this rate by converting mortality (DRGs 190 and 293), and US News scores (DRG 885) to a common scale of 0 to 1, based on the highest and lowest numbers in the sample for each respective DRG.

Dependent Variable: NGO Engagements

As with Kulik & Giacomelli's (2015), for our NGO engagement variable, we saw this predictor as generally the attitude of hospital employees to reach out to patients with advice, services, and information/education that they are interested in with respect to each of our chosen DRGs. As such, if a hospital provides its patients and potential patients with and external link to the American Heart Association (DRG 293) or searched through each hospital website and counted up evidence of NGO engagement. We added one to the count if the hospital also had teaching activities, or if it included a health encyclopedia (e.g. EBSCO or ADAM), because these reflect a stakeholder-oriented mental logic that the hospital can help its patients by appealing to external sources. Support groups such as the American Heart Association's Mended Hearts (DRG 293) and Alcoholics Anonymous (DRG 885) were also counted, along with government organizations (GOs) if the GO acted like an NGO in that it advocated for the interests of patients nationwide, such as the National Institute of Mental Health (DRG 885) and the National Heart, Lung, and Blood Institute (DRG 190 and 293). We also added distinctions (awards and accreditations) as engagements if the award was relevant to the DRG, because engagement would be required in order to obtain either an accreditation or an award.

Independent Variables

We used the government-reported Medicare charges (entitled "Average Covered Charges" in the government database) and non-Medicare charges (entitled "Average Total Payments"). In order to test Hypothesis 3, we multiplied the Medicare charges by the non-Medicare charges.

Statistical Analysis

We used SPSS to conduct a hierarchical linear regression analysis on the combined dataset in two steps: (1) control variables, and (2) NGO engagement counts. Because these results indicated significance for DRG type (coded as a dummy variable), we also conducted hierarchical regressions for each DRG separately. Note that we also ran hierarchical regression runs for each of our three dependent variables. This resulted in a total of (4 datasets) x (3 dependent variable runs) = 12 hierarchical regressions.

RESULTS

Combined Dataset

Table 1 shows correlations and hierarchical regression results for the combined dataset:

TABLE 1
COMBINED DATASET RESULTS

a. Correlations Table

Variable	Mean	Standard Deviation	1	2	3	4	5	6	7	8
1. Avg Medicare Charge	18688.55	11541.66								
2. Avg NonMed Ch	6864.18	2908.24	0.33							
3. Med*NonMed	-139284069	137198720	0.84	0.72						
4. NormPerf	0.41	0.26	-0.12	-0.07	-0.09					
5. Beds	337.51	376.75	0.19	0.33	0.28	-0.22				
6. Hosp Distinct	9.60	10.63	0.09	0.09	0.09	-0.06	0.23			
7. Nonprof	0.82	0.39	-0.08	0.12	0.03	-0.06	0.16	0.07		
8. Illness	2.23	0.73	-0.18	-0.60	-0.39	0.43	-0.38	0.00	-0.09	
9. NGOEng	3.33	4.78	-0.07	0.15	0.04	-0.33	0.20	0.14	0.14	-0.40

If $r \geq \pm0.09$ then $p < 0.10$; if $r \geq \pm0.12$ then $p < 0.05$; if $r \geq \pm0.16$ then $p < 0.01$

b. Hierarchical Regression Results

Variables	Control Variables Only Y = Average Medicare Charges	With NGO Engagements	Control Variables Only Y = Average Non-Medicare Charges	With NGO Engagements	Control Variables Only Y = Medicare Charges * NonMed Charges	With NGO Engagements
Intercept	24255.37**	27770.08**	10809.30**	11249.64**	256531340.56**	288404794.19**
	(2622.10)	(2799.93)	(518.77)	(558.92)	(29156346.69)	(31289865.21)
NGOEng		-450.00**		-56.38**		-4080810.03**
		(137.06)		(27.36)		(1531695.60)
NormPerf	-3316.81*	-3316.81	2656.86**	2465.41**	55530881.41*	41672368.61
	(2481.27)	(2481.27)	(488.70)	(495.31)	(27466263.52)	(27728808.61)
Beds	4.54**	4.53**	0.82*	0.82*	56358.48**	56285.53**
	(1.76)	(1.734)	(0.348)	(0.35)	(19541.37)	(19377.95)
Hosp Distinct	63.30	88.51	18.83†	21.99†	762144.97	990746.51
	(57.11)	(56.87)	(11.30)	(11.35)	(635040.65)	(635548.10)
Nonprof	-3697.15*	-3180.38*	394.41	459.16	-11245300.77	-6558874.15
	(1538.96)	(1526.61)	(304.48)	(304.74)	(17112410.73)	(17060213.63)
Illness	-1774.74†	-2697.57**	-2604.79**	-2720.40**	-70427192.49**	-78795954.39**
	(940.90)	(970.00)	(186.15)	(193.63)	(10462342.36)	(10839928.71)
F	5.30**	6.33**	53.379**	45.591**	16.34**	15.03**
Incremental F		10.78**		4.246*		7.10**
Adjusted R^2	0.06	0.08	0.418	0.423	0.17	0.19

N = 366; † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; using one-tailed tests

Table 1a shows the correlations table for the combined dataset, and suggests that all variables are largely independent. "Illness", the DRG dummy variable (1 = mental illness, DRG 885; 2 = COPD, DRG 190; 3 = heart failure, DRG 293) showed significant correlations with the non-Medicare charge dependent variable, suggesting potential differences between illnesses, as also indicated by the regression results, shown in Table 1b. For each of the three full regressions, the NGO engagements were found to be highly significant, with p-values less than 0.01 every case. Furthermore, the incremental F was also significant with the p-value at less than 0.01 for Medicare and Medicare*non-Medicare dependent variables, and less than 0.05 for the non-Medicare dependent variable. Interestingly, the incremental adjusted R^2 varied significantly with dependent variable. Approximately consistent with Kulik & Giacomelli's (2015) results, the model with NGO engagements added increased the incremental adjusted R^2 from 6% to 8%; however, the full model explained about 42% of the variation in the non-Medicare charges, with most of this R^2 attributable to the control variables, and only 0.5% attributable to the NGO engagement variable.

Psychoses (DRG 885) Dataset
Table 2 shows correlations and hierarchical regression results for the Psychoses dataset:

TABLE 2
PSYCHOSES (DRG885) DATASET RESULTS

a. Correlations Table

Variable	Mean	Standard Deviation	1	2	3	4	5	6	7
1. Avg Medicare Charge	23060.04	12488.50							
2. Avg NonMed Ch	8893.21	4027.518	0.42						
3. Med*NonMed	225949265	210048325	0.83	0.82					
4. Perf (US News Score)	3.12	5.114	0.15	0.55	0.41				
5. Beds	700.26	640.00	0.06	0.16	0.11	0.38			
6. Hosp Distinct	10.85	8.77	0.18	0.17	0.20	0.39	0.29		
7. Nonprof	0.92	0.27	-0.02	0.18	0.09	0.08	0.12	0.07	
8. NGOEng	9.02	7.58	-0.37	0.05	-0.18	0.00	-0.15	0.08	0.21

If $r \geq \pm0.20$ then $p < 0.10$; if $r \geq \pm0.28$ then $p < 0.05$; if $r \geq \pm0.37$ then $p < 0.01$

b. Hierarchical Regression Results

Variables	Control Variables Only Y = Average Medicare Charges	With NGO Engagements	Control Variables Only Y = Average Non-Medicare Charges	With NGO Engagements	Control Variables Only Y = Medicare Charges * NonMed Charges	With NGO Engagements
Intercept	21702.56**	24294.86**	5970.10**	5955.22**	131178914.75	155915233.03†
	(5890.32)	(5486.65)	(1586.20)	(1614.81)	(91639133.22)	(90391831.21)
NGOEng		-681.93**		3.91		-6507151.32†
		(199.57)		(58.74)		(3287839.38)
Perf	241.44	267.85	461.99**	461.83**	16982325.59**	17234335.97**
	(348.74)	(321.82)	(93.91)	(94.72)	(5425614.79)	(5301890.45)
Beds	-0.41	-2.21†	-0.44	-0.43	-24837.79	-41985.48
	(2.695)	(2.54)	(0.73)	(0.75)	(41921.64)	(41860.31)
Hosp Distinct	217.70	285.16	-21.36	-21.74	1441581.38	2085380.12
	(196.75)	(182.58)	(52.98)	(53.74)	(3060962.58)	(3007939.12)
Nonprof	-1590.52	2736.74	2184.84	2160.01	47085903.87	88377686.402
	(5922.53)	(5608.51)	(1594.87)	(1650.68)	(92140352.86)	(92399463.20)
F	3.38*	2.70*	7.58**	5.97**	3.35*	3.60**
Incremental F		11.68**		0.00		3.92*
Adjusted R^2	-0.02	0.20	.29	.28	0.13	0.17

$N = 66$; † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; using one-tailed tests

The correlation table of variables for this dataset is shown in Table 2a. Interestingly, the (number of) Beds variable was highest for this dataset, suggesting that only large hospitals were able to run a psych department. Beds correlated somewhat (0.38) with the US News score, which suggests that hospital size had some effect on psychosis treatment performance, perhaps because a diverse set of psychoses requires different teams of doctors and nurses with different specializations. High-quality treatments are likely to also be expensive, with treatments such as individual counselling and individually-designed programs, which might quickly overrun Medicare charge structures. This description would describe the somewhat high correlation (0.55) between the US News score and the non-Medicare charge dependent variable.

Hierarchical regression results are shown in Table 2b. Despite the relatively small sample size, all regression models were significant, with p-values of the *F* statistic less than 0.05 or 0.01. NGO engagements and the incremental *F* statistic, however, were significant only for the Medicare charge dependent variable, although in this model, the adjusted R^2 increased by 22% over the control-variables-only model.

COPD (DRG 190) Dataset

The COPD (DRG 190) Dataset results are shown in Table 3 below:

TABLE 3
COPD (DRG 190) DATASET RESULTS

a. Correlations Table

Variable	Mean	Standard Deviation	1	2	3	4	5	6	7
1. Avg Medicare Charge	30410.56	22085.27							
2. Avg NonMed Ch	8200.44	1959.44	0.32						
3. Med*NonMed	263031431	237906418	0.95	0.54					
4. Perf (30-day mortality)	0.06	0.02	0.09	0.07	0.09				
5. Beds	275.96	230.40	0.23	0.32	0.27	0.07			
6. Hosp Distinct	8.56	7.30	0.02	0.16	0.04	0.05	0.25		
7. Nonprof	0.79	0.41	-0.12	0.16	-0.04	0.04	0.17	0.14	
8. NGOEng	1.76	2.89	-0.01	-0.07	-0.04	0.04	0.15	0.35	0.12

If $r \geq \pm 0.14$ then $p < 0.10$; if $r \geq \pm 0.16$ then $p < 0.05$; if $r \geq \pm 0.25$ then $p < 0.01$

b. Hierarchical Regression Results

Variables	Control Variables Only Y = Average Medicare Charges	With NGO Engagements	Control Variables Only Y = Average Non-Medicare Charges	With NGO Engagements	Control Variables Only Y = Medicare Charges * NonMed Charges	With NGO Engagements
Intercept	26946.86**	26941.19**	6751.11**	6747.42**	181840921.76**	181648521.61**
	(6057.19)	(6077.00)	(526.22)	(520.27)	(65302160.39)	(65359279.00)
NGOEng		-156.87		-116.38*		-6070719.36
		(652.48)		(55.86)		(7017582.77)
Perf	790.49	794.36	43.26	46.13	8243503.33	8393386.72
	(813.94)	(816.76)	(70.71)	(69.93)	(8775046.79)	(8784380.16)
Beds	24.67**	24.79**	2.43**	2.51**	289454.90**	293876.95**
	(7.95)	(7.99)	(0.69)	(0.68)	(85716.36)	(85943.00)
Hosp Distinct	-83.11	-63.17	19.07	33.86	-604419.61	166898.56
	(249.43)	(263.62)	(21.67)	(22.57)	(2689052.24)	(2835236.09)
Nonprof	-8959.24*	-8886.41*	477.13	531.16	-50280698	-47462519.88
	(4354.43)	(4379.14)	(378.30)	(374.91)	(46944861.19)	(47098452.66)
F	3.38*	2.70*	5.081**	5.027**	3.315*	2.797*
Incremental F		0.058		4.340*		0.75
Adjusted R^2	0.06	0.05	0.10	0.12	0.06	0.06

N = 150; † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; using one-tailed tests

The correlation table for these variables is shown in Table 3a. All variables exhibited reasonable independence, except for an unusually high correlation (0.95) between dependent variables Medicare charges and Medicare*non-Medicare charges. This suggests that the regression models associated with these dependent variables will produce similar results, as we see confirmed in the hierarchical regression results, Table 3b, in that each model's F statistic is nearly the same value. Here, NGO engagements were significant only for the non-Medicare charges, with a p-value less than 0.05, and only this model's incremental F statistic was significant (p-value < 0.05). Adjusted R^2 change indicates a 2% additional explanation of the variation in the non-Medicare charge dependent variable, somewhat in line with the combined dataset results. These results are not what we had expected, given Kulik and Giacomelli's (2015) promising results for DRG 190; it is possible that the model significance was due only to the control variables, as these authors did not apply a hierarchical approach. However, it is notable that our study found significant results for a dependent variable not used in Kulik & Giacomelli (2015).

Heart Failure (DRG 293) Dataset

The Heart Failure (DRG 293) Dataset results are shown in Table 4 below:

TABLE 4
HEART FAILURE (DRG 293) DATASET RESULTS

a. Correlations Table

Variable	Mean	Standard Deviation	1	2	3	4	5	6	7
1. Avg Medicare Charge	16990.93	10151.03							
2. Avg NonMed Ch	4635.14	1086.37	0.33						
3. Med*NonMed	82334479	61798967	0.95	0.58					
4. Perf (30-day mortality)	0.12	0.07	0.04	-0.06	-0.00				
5. Beds	239.46	210.14	0.21	0.43	0.32	-0.03			
6. Hosp Distinct	10.09	13.70	0.13	0.20	0.16	-0.08	0.31		
7. Nonprof	0.80	0.40	-0.09	0.06	0.02	-0.17	0.15	0.03	
8. NGOEng	2.39	2.23	-0.25	-0.08	-0.22	-0.02	0.04	0.13	-0.02

If $r \geq \pm 0.14$ then $p < 0.10$; if $r \geq \pm 0.16$ then $p < 0.05$; if $r \geq \pm 0.21$ then $p < 0.01$

b. Hierarchical Regression Results

Variables	Control Variables Only Y = Average Medicare Charges	With NGO Engagements	Control Variables Only Y = Average Non-Medicare Charges	With NGO Engagements	Control Variables Only Y = Medicare Charges * NonMed Charges	With NGO Engagements
Intercept	16115.44**	19016.34**	4175.19**	4293.03**	66916102.14**	82607049.36**
	(2691.76)	(2721.02)	(267.76)	(280.15)	(15989681.17)	(16281229.51)
NGOEng		-1246.41**		-50.63		-6741809.87**
		(355.11)		(36.56)		(2124794.67)
Perf	3824.21	3343.15	-737.11	-756.65	-28956052.48	-5497681.07
	(12723.04)	(12254.50)	(1265.60)	(1261.69)	(75577941.86)	(73324784.02)
Beds	9.99*	9.99*	2.11**	2.11**	89433.11**	89438.66**
	(4.13)	(3.98)	(0.41)	(0.41)	(24552.90)	(23819.43)
Hosp Distinct	48.84	74.51	5.25	6.29	308556.84	447406.55
	(62.87)	(60.99)	(6.25)	(6.28)	(373431.16)	(364909.10)
Nonprof	-3084.24	-3244.08	-13.66	-20.15	-10956052.48	-11820604.06
	(2083.95)	(2007.60)	(207.30)	(206.70)	(12379159.71)	(12012447.11)
F	2.47*	4.59**	8.57**	7.28**	4.42**	5.77**
Incremental F		12.32**		1.92		10.07**
Adjusted R^2	0.04	0.11	0.17	0.17	0.08	0.14

N = 150; † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; using one-tailed tests

The correlations table for the DRG variables, Table 4a, shows a similar issue with Medicare and Medicare*non-Medicare dependent variables, with a 0.95 correlation. In contrast with the COPD (DRG 190) results, however, the heart failure regression results, Table 4b, show a high level of significance for all regression models, and a highly-significant NGO engagements variable for the Medicare and Medicare*non-Medicare dependent variable models. Adjusted R^2 increases when NGO engagements were added to the model were at about 6-7% for both Medicare and Medicare*non-Medicare dependent variable models.

DISCUSSION

This study has produced three major findings. First, our approach was reasonably effective with NGO engagement counts acting as a proxy for actual NGO engagement. While there may obviously exist some degree of noise in the measure which may warrant a complementary approach (discussed below), if website counts were meaningless, then it would be more likely that no significant results would havbe been found at all through this approach. In short, one can conclude that, generally, a hospital's website says something significant about its sense of social responsibility. It may reflect, at least in part, the hospital's shared mental model, or dominant logic (Prahalad & Bettis, 1986; discussed below) toward how problems are solved in the hospital – in this case, how hospitals solve the 'problem' of how to provide patients with resources for further information and support on their illnesses and treatments.

Second, we generally observed strong support for all three of our hypotheses, suggesting strong support for cooperative engagement theory in the hospital industry. Generally, based on the combined dataset results, a single NGO engagement results in a $450 decrease in Medicare charge, on average, and a $56 decrease in non-Medicare charges. The results indicate the importance of NGO engagement in hospitals at least, but at present, hospitals appear to be more focused on engaging directly with patients instead. For example, Concannon et al. (2014) found patients to be the most-often referred to stakeholder group, but these authors did not address the possibility that NGOs acting both as patient interest groups on behalf of patients, and patient-support entities that often engage directly with patients and non-patients in a prevention context, also have interests that are of intrinsic value to hospital administrators, nurses, and doctors. Patients may be more concerned with their immediate welfare and treatment, and not cognizant of the big picture issues, such as equity in medicare charging procedures. A precursor, or first step, to engaging with NGOs is perhaps acknowledging that such intrinsic value exists and can be discovered by engaging with patient-oriented NGOs. Such a recognition might require a shift in 'dominant logic' which, according to Prahalad & Bettis (1986) is:

> "a mind set or a world view or conceptualization of the business and the administrative tools to accomplish goals and make decisions in that business. It is stored as a shared cognitive map (or set of schemas) among the dominant coalition. It is expressed as a learned, problem-solving behavior" (Prahalad & Bettis, 1986, p. 491).

In other words, patient-centered NGO engagement may need to be on the cognitive maps of hospital administrators before effective NGO engagement can reach a meaningful level of effectiveness. This may come as a bit of a relief to hospital employees, especially administrative leaders, because NGO engagements are easier, in terms of time, effort, and singularity of perspective, than to engage each individual patient and potential patient, although of course, individual patient needs must, at the same time, never be ignored.

Third, it should be noted that not all DRGs that we tested supported all three hypotheses: Psychoses (DRG 885) supported Hypothesis 1, COPD (DRG 190) supported Hypothesis 2, and heart failure (DRG 293) supported Hypotheses 1 and 3. Perhaps the inconsistent support across all three DRGs in the study suggests different levels of importance, or salience (Mitchell, Agle & Wood, 1997) across different NGO stakeholders, or different types of stakeholders (Parent & Deephouse, 2007), or perhaps the results reflect an inconsistent quality of engagement with different stakeholders (Harrison, Bosse & Phillips, 2010), which could have confounded our results somewhat. It could be interesting to conduct a follow-up study using self-reported levels of engagements with a survey rather than depend on evidence presented though the medium of the hospital's website, to investigate these issues.

Further Investigation

An assumption we have made is that an incremental increase in NGO engagement would lead to an incremental benefit to the NGO's stakeholders; at some point there are likely diminishing returns to this approach, as Mitchell, Agle & Wood's (1997) point was that stakeholders should be managed by identify

high-priority ("salient") stakeholders, and then engaging with only those. While we demonstrate that stakeholder engagement is beneficial, what is yet to be explored is the limits to this benefit.

Of course, our study begs the question as to whether Cooperative Engagement Theory (CET) is generally applicable outside the hospitals addressed in this study. If CET is not generally applicable, then in which industries/environments does CET function and why? For example, NGO importance and influence may be affected by the role that government organizations play in the industry. For hospitals, several prominent GOs posed as important resources, much like NGO roles, but in other industries, GOs only take the role of regulatory institutions. Of course, we have not addressed or attempted to answer questions of instrumentality in this study – CSR performance is not necessarily the same as profitability, and in the industry in our study, non-profit organizations dominate. Although profit/non-profit hospitals were not found to behave differently in our study, perhaps CET may function differently in industries in which the for-profit organizational structure dominates.

CONCLUSION

In the course of our data collection, we have observed at least two types of dominant logic: (1) the hospital that uses resources wherever possible and opens its doors to the engagement and participation of patient-welfare-oriented stakeholders, and (2) the hospital that poses as a 'one stop shop' for all of the patient's needs, with its own doctors and nurses providing online information and managing its own administration-organized support groups. Our research shows that the hospital with a dominant logic of the first type is generally more socially responsible than the dominant logic of the second type, and that a hospital's website reflects the difference. Apart from contributions to the hospital industry itself, for example, as a partial explanation of hospital Medicare charges, we hope that this study will provide researchers with a CET-oriented research agenda that investigates the role that NGOs can and should play, in how they influence organizations and help shape our society.

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