

Consortium on Law and Values in Health, Environment & the Life Sciences 2016-17 Student Proposal Cover Page

Applicant Information

Applicant name(s):	Keyman Dennie Kim	Email:	Kimx3874@umn.edu
Project title:	Integrating a Fractured Healthcare System through Interorganizational Networks: a Study of Medicare Accountable Care Organizations		
Department:	Strategic Management and Entrepreneurship	College:	Carlson School of Management
Degree program:	PhD Business Administration	Faculty advisor name & email:	Aks Zaheer (aazaheer@umn.edu) <input type="checkbox"/> Russell Funk (rfunk@umn.edu) <input type="checkbox"/> NA
Dept. Head:	Shaker Zahra	Dept. Head's email:	Zahra004@umn.edu
Dean:	Sri Zaheer	Dean's email:	csdean@umn.edu
How did you hear about this funding opportunity?			
<input checked="" type="checkbox"/> Consortium e-mail <input type="checkbox"/> Graduate & Professional Student Update <input type="checkbox"/> The Brief <input type="checkbox"/> Advisor <input type="checkbox"/> Dept. email/newsletter <input type="checkbox"/> Consortium website <input type="checkbox"/> Other			

Funding

Total amount of funding requested:	\$ 4,500
Executive summary (maximum 200 words)	
<p>This research investigates the dynamics and performance of interorganizational networks. The healthcare system in America is world-leading in certain areas, but is also highly fragmented and poorly coordinated in others, providing mediocre outcomes compared to other developed nations. To improve integration among healthcare organizations, the Affordable Care Act of 2010 incentivized providers to come together and formalize partnerships through interorganizational networks called Accountable Care Organizations (ACOs). I study how these networks interact with the existing patterns of relationships between healthcare organizations. Specifically, I try to understand whether formal networks can be an integrating force among providers, thus improving the quality of care while reducing costs of government-sponsored Medicare for elderly patients. The funding will be used to acquire Cost and Utilization Data from the Medicare Current Beneficiary Survey, which, in conjunction with other data, allows comparison of costs for patients at different providers. This enables me to better understand why some networks outperform others, and to model how networks might improve performance in the future.</p>	

Approvals

Check all appropriate approvals required for your proposal. It is not necessary to have all approvals at the time of proposal submission; however, approvals must be obtained prior to receipt of funding. If you have applied for approval but have not yet received it, indicate that below.

IRB	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> NA	<input type="checkbox"/> Application pending	
Other	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	<input type="checkbox"/> Application pending	Specify: Center for Medicare and Medicaid Services Data Use Agreement

Checklist—for reviewer use

<input type="checkbox"/>	The proposal is 1000 words or less excluding budget, biographies, references and citations.
<input type="checkbox"/>	The proposal includes a work plan with a specific timeline using months or quarters to identify work to be done and completion dates.
<input type="checkbox"/>	The proposal includes a 1-2 paragraph biography of the applicant and all co-investigators.
<input type="checkbox"/>	The budget form is complete including the funds sought for this project, other pending applications for this project, and the amount/source of matching or other funds.
<input type="checkbox"/>	The applicant's faculty advisor is copied on the application email. Professional students w/o advisors check NA.
<input type="checkbox"/>	All necessary approvals are pending or received.

STATEMENT OF RESEARCH

“The U.S. health care delivery system does not provide consistent, high-quality medical care to all people ... [it] is overly complex and uncoordinated, requiring steps and patient ‘handoffs’ that slow down care ...” (Institute of Medicine, 2001) [1]

Motivation

My dissertation research reflects the intermingling of my formative experiences in healthcare and my disciplinary interest in how organizations, a fundamental unit of human activity, can address larger problems in society. The above quote served as my introduction to the ills of US healthcare in 2007; nearly ten years later, we, as a society, are not much closer to solving the critical issue they identified in 2001: costs continue to rise, jeopardizing the sustainability of our system. The Affordable Care Act of 2010 (ACA) was an important step in that it acknowledged this problem. However, it also reflected the reality that a system-wide policy solution is unfeasible for the foreseeable future. Thus, high-level change must come from the aggregation of lower-level actions.

Project Overview and Impact

In this project, we explore how organizations collaborate to achieve larger shared goals. We combine strategy and organizational theory with network analysis to study the antecedents of high performing networks. Specifically, we focus on networks of healthcare providers called Accountable Care Organizations (ACOs) that emerged as a result of provisions in the ACA. ACOs are financially incentivized, by the government, to make healthcare less expensive, while improving quality. Although the premise of the ACO model is that formalizing relationships through these networks can improve coordination in healthcare delivery and reduce costs, it remains unclear precisely how groups of organizations actually achieve their shared goals.

By treating ACOs as networks, these complex entities can be reconceptualized as bundles of relationships, or “ties,” between distinct entities connected both by formal membership in the same network but also by other “informal” interactions, such as patient referrals [2]. This, importantly, also enables us to bring the maximum available information to bear on this complex phenomenon. Starting from data that captures hundreds of millions of patient-sharing interactions between all US Medicare physicians and organizations from 2009-2015, we built a unique sample of more than two hundred ACO networks encompassing four years prior to, and three years following, the establishment of ACOs. Thus, we are able to visualize and measure the evolution of the critical relationships underlying each newly established network.

The reconstruction of patient sharing networks allows us to study important properties of each ACO, such as the strength of relationships or the level of fragmentation (see Figure 1 in Appendix), to better understand why networks perform differently. However, an important limitation is that the data does not permit more detailed analysis of the *content* of the various interorganizational interactions. In other words, when a given pair of organizations share or refer patients, what is the purpose? Understanding what work is shared is critical for understanding how different networks arrangements lead to better or worse cost-savings or quality. Moreover, more detailed information about the content of each tie enables the determination of what interactions may be most important for network effectiveness or, on the contrary, what interactions may be most deleterious [3].

Proposed Use of Funding

The proposed funding for this project will be used specifically to acquire this information, which is available through the Medicare Current Beneficiary Survey Cost and Utilization data. Combined with data identifying ACO patients and the treatment they received, this new data will reveal the financial implications of the performed work. The cost information not only affects bottom-line ACO performance, but can also be used to compare how costs vary at different positions within a network. Subsequently, this can be used to identify where, within a network, certain services can be delivered most effectively. Additional funds will be used to defray the costs associated with presenting the paper at the Academy of Management Annual Meeting, the major annual conference in our field.

Innovation in Interdisciplinary Research

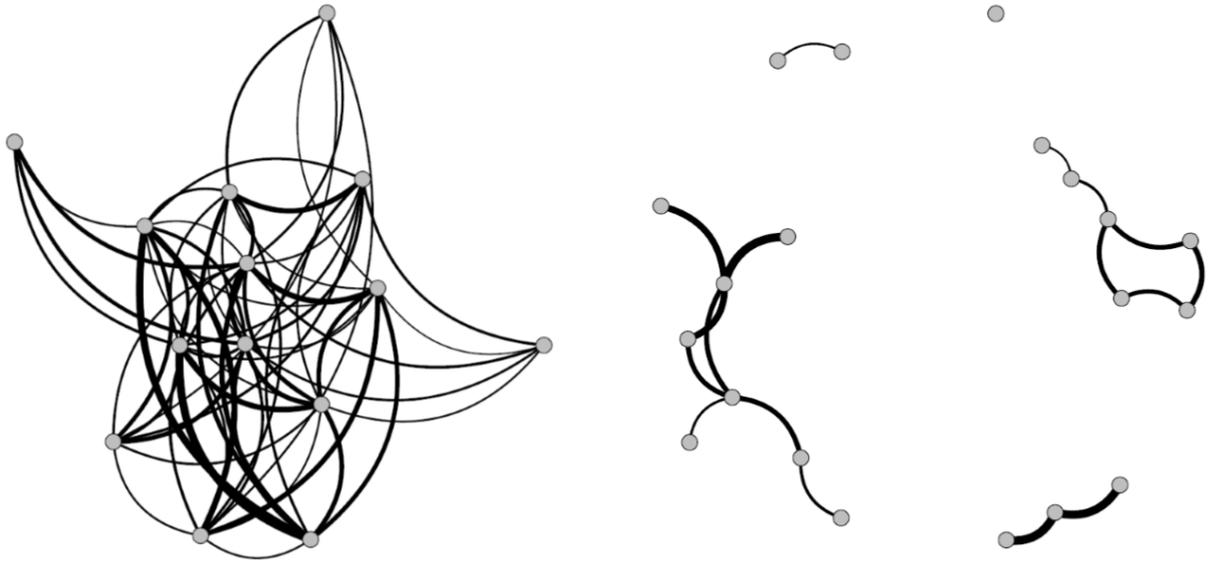
This project represents an exciting opportunity to apply strategy and organization theory to a socially important issue in health services research and health policy. Moreover, the complexity and timeliness of this context signals high potential to advance research in interorganizational networks and network outcomes. However, more than simply applying one disciplinary perspective to the turf of another, we believe that this research reflects innovative work that is at the leading edge in both disciplines. The use of network analysis to study interorganizational activity in healthcare is not new [4], but the scale – hundreds of networks, specificity of measurement, and outcome of network-level performance, are rare in both health services and management research. We believe that this research can encourage new and deeper interdisciplinary collaboration aimed at improving the healthcare system.

TIMELINE

- **Spring 2017:** Submit request for data use agreement to Center for Medicare and Medicaid Services, through ResDAC, *complete by May 1, 2017*
- **Summer/Fall 2017:** Receive **cost and utilization data (FY2013)**, Medicare claims data, Medicare ACO data, *complete by October 1, 2017*
- **Fall 2017:** Develop research paper, *complete by October 31, 2017*
- **Winter 2017-18:** Submit paper to conferences, *complete by Feb. 1, 2018*
- **Spring 2018:** Renew data use agreement and submit update for new data through ResDAC, *complete by April 1, 2018*
- **Summer 2018:** Submit **narrative and financial report to Consortium**, *complete by July 31, 2018*
- **Summer 2018:** Receive update for **cost and utilization data (FY2015)**, *complete by October 1, 2018*
- **Summer 2018/Fall 2018:** Submit research paper to journal, *complete by December 1, 2018*

APPENDIX

**FIGURE 1. TWO ACO NETWORKS DEPICTING STRENGTH OF TIES
& DIFFERENT LEVELS OF FRAGMENTATION**



Note: Circles represent organizations, lines represent relationships, or ties, between organizations. All lines denote a patient-sharing relationship; thicker lines indicate stronger relationships.

REFERENCES

1. Committee on Quality of Health Care in America and the Institute of Medicine (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. National Academies Press.
2. Rosenkopf, L. and Schleicher, T. (2008). Below the Tip of the Iceberg: The Co-evolution of Formal and Informal Interorganizational Relations in the Wireless Telecommunications Industry. *Manage. Decis. Econ.*, 29: 425-441.
3. Aral, S. and Van Alstyne, M. (2011). The Diversity-Bandwidth Tradeoff. *American Journal of Sociology*, 117(1): 90-171.
4. Provan, K. and Milward, H. (1995). A preliminary theory of interorganizational network effectiveness: A comparative study of four community mental health systems. *Administrative Science Quarterly*, 40(1): 1-33.

RESEARCH TEAM BIOGRAPHIES

Dennie Kim (PhD Candidate, Strategic Management and Entrepreneurship) Kim joined the PhD program at the Carlson School of Management after a diverse career in the healthcare industry. He conducted laboratory research in molecular and cellular biology, served as a strategy consultant in the biopharmaceutical industry, and most recently was a hospital administrator in perioperative services at Brigham and Women's Hospital, managing projects to improve operational efficiency, patient safety, and interdepartmental coordination. His current research interests reflect these experiences, focusing on system-wide issues and healthcare reform in the US. His doctoral dissertation studies the effectiveness of interorganizational networks – partnerships between multiple, independent organizations – in improving coordination between providers and community-level patient outcomes. He received in BA in biology from Harvard University.

Akbar Zaheer, PhD (Professor, Curtis L. Carlson Chair in Strategic Management, co-advisor) Professor Zaheer's current research examines the effectiveness of interorganizational networks in various industries. His other recent research has focused on the antecedents and consequences of trust in organizations and in interfirm exchange, strategic alliances, mergers and acquisitions, and the dynamics of social structure in organizations. Professor Zaheer is one of the foremost proponents of network analysis in strategic management research, publishing extensively on the topic and serving as editor for special issues in top journals, *Strategic Management Journal* and *Organization Science*. Additionally, he is an elected Fellow of the Strategic Management Society. Professor Zaheer received his PhD in strategic management from the Massachusetts Institute of Technology and his Master's in Business from the Indian Institute of Management in Ahmedabad.

Russell Funk, PhD (Assistant Professor, Strategic Management and Entrepreneurship, co-advisor) Professor Funk's research is driven by the idea that the growing availability of large administrative, government, and web data sets create novel opportunities for management research, and he has been active in applying the tools of big data to social science. He has extensive experience collaborating with health services researchers and analyzing administrative claims data from both Medicare and private health systems. Notably, in addition to publishing research in top management journals, Professor Funk has also published in leading medical and health services journals, including *Medical Care* and *Annals of Surgery* that apply network analysis to medical data to better understand health care reform. Prior to joining the Carlson School of Management, he earned his PhD in economic sociology at the University of Michigan, where he received fellowships from the National Science Foundation and the Rackham School of Graduate Studies. He earned his AB from the University of Chicago.

**Consortium on Law and Values in Health, Environment the Life Sciences
Proposed Budget**

Project Title: Integrating a Fractured Healthcare System through Interorganizational Networks, a Study of Medicare Accountable Care Organizations

Provide justification along with costs.			Requested funding		Matching/other funding <i>Provide this information is you have other funding sources for this project.</i>	
	Category & instructions	Justification	Amount	Amount	Source	
1	Your stipend <i>Maximum of \$5,000</i>		\$0			
2	Speaker honoraria (for colloquia)	___ speakers x \$ _____ honorarium	\$0			
3	Supplies & Services <i>Identify and explain use here or in the body of your proposal.</i>	<p><i>Medicare Data:</i> Medicare Current Beneficiary Survey Cost and Utilization (2013, 2015) - \$4,000 <i>Medicare Outpatient Claims Limited Data Set (LDS) (2013-15) - \$21,000</i> <i>Medicare Inpatient Claims LDS (2013-15) - \$9,000</i> <i>Medicare Accountable Care Organization (ACO) Beneficiary Research Identifiable File (2013-15) - \$7,500</i> <i>Medicare ACO Provider Research Identifiable File (2013-15) - \$2,000</i></p>	\$4,000	\$39,500	UMN Grand Challenges Award (\$37,500) Carlson School Dean's Small Grant (\$1,000) Prof. Zaheer/Prof. Funk Research Funds (\$1,000)	
4	Equipment <i>Identify and explain use. Allowable only if the equipment is necessary for this project. All equipment must be given to your dept. at the completion of your project.</i>		\$0			
5	Travel <i>Indicate the purpose of the travel, estimated dates of travel, transportation, housing and allowable per diem costs (see travel.umn.edu).</i>	Academy of Management Annual Meeting (August 2018, location TBD) to present research paper; \$110 registration fee, \$890 transportation and lodging	\$500	\$500	Carlson School Travel Grant	
Subtotal research expenses (2-5)			\$4,500	\$40,000		
TOTAL BUDGET			\$4,500	\$40,000		