UNIVERSITY OF CALIFORNIA, SAN DIEGO
SAN DIEGO STATE UNIVERSITY

Cross Border Health Collaborative Leadership

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy

in

Public Health (Global Health)

by

Charles E. Matthews III

Committee in Charge:

University of California, San Diego

Professor Victoria Ojeda, Chair
Professor Jose Luis Burgos
Professor Alan Daly

San Diego State University

Professor Gregory Talavera
Professor Wilma Wooten

2017

The Dissertation of Charles E. Matthews III is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

_____

_____

_____

_____

_____

Chair

University of California, San Diego

San Diego State University

2017

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

ACKNOWLEDGMENTS

This dissertation would not have been possible without the invaluable support of many people. I would first like to acknowledge my dissertation committee members whose mentorship and guidance throughout this whole process is reflected in every aspect of this work. I would like to thank my committee chair Dr. Victoria D. Ojeda for her expertise and guidance during my doctoral training that has been instrumental to my professional development and growth as a researcher. I sincerely thank Dr. Jose Luis Burgos and Dr. Greg Talavera who took an invested interest in my work and whose expertise provided critical guidance that shaped this dissertation; to Dr. Alan Daly who facilitated my growth in mentoring me to develop a vision and pathway that bridged both worlds of academia and operations and finally, Dr Wilma Wooten who has encouraged my development and growth from the beginning of this journey.

I would also like to thank Dr. Gudelia Rangel and Dr. Cecilia Rosales whose leadership and encouragement has propelled me along this journey by training me to perform the rewarding work along the U.S./Mexico Border as well as Dr. Thomas Novotny and Dr. Carleen Stoskoph for their leadership and support during the first part of this program. Finally, I thank my family, Deanne, Chase and Jema for their constant, unconditional support and encouragement, for without this I would not have been successful.

Chapter 3, in full is a reprint of material as it appears in the *Journal for Cross Border Studies Ireland*: Matthews III, C., Rangel, G., Jimenez, B., Talavera, G., Wooten, W. and Daly, A. Leading Cross-Border Collaboration on the

Frontlines in the US-Mexico Border Region: What is Important? Charles Matthews was the primary investigator and author of this paper.

VITA

2017 Doctor of Philosophy in Public Health (Global Health)
University of California, San Diego and San Diego State University (San Diego, CA)

2005 Master of Business Administration
San Diego State University

1997 Master of Science in Marriage, Family & Child Counseling
San Diego State University

1991 Bachelor of Science in Psychology
Northern Illinois University

PUBLICATIONS

1. Matthews, C. E., Wooten, W., Gomez, M. G. R., Kozo, J., Fernandez, A., & Ojeda, V. D. (2015). The California Border Health Collaborative: A Strategy for Leading the Border to Better Health. *Frontiers in Public Health*, *3*, 141. http://doi.org/10.3389/fpubh.2015.00141

2. Matthews, C. E., Wooten, W., Gomez, M.G.R., Daly, A., Jimenez, B., & Talavera, G. (2016). Leading Cross-Border Collaboration on the Front-lines in the US-Mexico Border Region: What is Important? *The Journal of Cross Border Studies in Ireland, 11,* 57. http://crossborder.ie/site2015/wp-content/uploads/2015/11/CCBS-JOURNAL-2016.pdf

ABSTRACT OF THE DISSERTATION

Cross Border Health Collaborative Leadership

by

Charles E. Matthews III

Doctor of Philosophy in Public Health (Global Health)

University of California, San Diego, 2017

San Diego State University, 2017

Professor Victoria Ojeda, Chair

Background: There are many health and economic disparities present in border regions of countries. Addressing those disparities in a collaborative manner in the border region is paramount. Leading such border collaborative organizations successfully requires a certain leadership approach.

Objective: This research sought to explore what cross border health collaborative leadership approaches were deemed important by current cross border leaders and actors performing cross border work in the US-Mexico and Ireland-Northern Ireland border regions.

Methods: A forty statement (8 categories), Likert type quantitative survey was developed with the goal of exploring the importance of leadership themes and or actions in developing and coordinating cross border health collaboratives. The cross border setting (n=159) included the border regions of the Republic of Ireland (IRE), Northern Ireland (NIRE), Mexico (MX) and the United States (U.S.). An exploratory factor analysis was utilized in this endeavor.

Results: Upon completion of the exploratory factor analysis the survey instrument was reduced to five categories and 20 statements. The five leadership themes/categories (with Cronbach Alpha measure) that were identified were *Communicate to Engage the Collaborative (.77)*, *Steer the Collaborative (.74), Understand the Members of the Collaborative (.69), Manage the Collaborative (.71) and Strategic Relationship Building for the Collaborative .59).* The respondents from both border regions agreed on important leadership approaches needed to lead and develop a border health collaborative.

Conclusions: An initial/preliminary 20 statement survey instrument was developed with adequate construct validity as well as internal reliability to assist in the exploration of what leadership approaches are important in developing cross border health collaboratives. The findings from this study align with recently published cross-border toolkits from Europe and the US-Mexico border region that describe the manner in which cross-border leaders and actors should proceed in developing and coordinating projects and cross-border collaboratives.

CHAPTER 1: INTRODUCTION
OVERVIEW

The border regions that are shared among countries are often areas of disparity as it relates to their parent states.[1-3] They can be economically weak, have underdeveloped infrastructure, higher unemployment and health disparities are ever present.[4-6] There is a strong practice of addressing the health issues in a border region in a collaborative manner and it is accepted that the leadership needed to facilitate cross border collaborative groups and organizations is key to the success of any impact effort.[7-14] While there is a body of work that identifies and describes effective collaborative leadership there are limited empirical studies that identifies and describe those leadership approaches specific for effective cross border health work. This dissertation will explore the leadership styles/themes deemed important to develop cross-border health collaborative organizations and relationships within the collaborative leadership context through the following aims:

1. To develop an initial quantitative survey instrument designed to explore what leadership approaches are deemed important by current cross border leaders and actors performing cross border work (Chapter 2);
2. To explore and identify the leadership approaches/themes deemed important in the United States-Mexico border region to develop cross-border health collaborative organizations and relationships (Chapter 3); and
3. To explore and identify the leadership approaches/themes deemed important in the Norther Ireland-Republic of Ireland border region to develop

cross-border health collaborative organizations and relationships (Chapter 4).

BACKGROUND & SIGNIFICANCE

Border Regions

Although over recent years there has been increased trade and economic development between the U.S. and Mexico, working and living conditions for Mexicans in northern Border States have worsened over the years. Over 30% of the homes in northern Mexican border cities do not have water.[15, 16] In addition, U.S. counties in the border region are among the most impoverished in the country. Four of the seven poorest cities in the U.S. are on the Texas-Mexico border and five of the 14 poorest U.S. counties are in the Texas borderlands.[17, 18] The sub-optimal conditions of the border region contribute to serious health problems for their resident's.[15, 17, 19] These can include higher incidents of HIV, TB and other communicable diseases, higher rates of chronic disease as well as other public health threats that have no border. [20-22] Additionally, in addressing the health needs in the border region, the high mobility and frequent border crossings of people living in the border region adds another challenging health management dimension.[16, 20]

Similar border conditions and issues are prevalent in the European Union (EU).[23-25] The EU is made up of 28 Member States that covers 1,707,642 square miles, of that land mass, border areas constitute approximately 40%, which is home to approximately to one third of its 500 million citizens.[26] Their border regions differ from one another in terms of population density, soci-

oeconomic development as well as economic characteristics. Irrespective of these features, their border regions face similar challenges regarding health and wellbeing as their U.S.-Mexico counterpart's. [2, 4, 15, 23]

On both continents there has been a history of approaching border issues in a collaborative manner and there are multiple collaborative organizations, working toward improving the lives and overall well-being of the inhabitants of their respective border regions.[27-30] In the U.S – Mexico region, the United States – Mexico Border Health Commission plays a vital role in facilitating and supporting collaborative efforts in the border region and sponsors cross-border training for leaders from all types of organizations (government, NGO, academia…). [31, 32] The same is true in the EU. The EU for the past 20 years has been facilitating and funding efforts through grants for local, federal and regional cross border efforts to include training. Through ERUGIO and INTERREG hundreds of millions of Euros have been spent in this effort. [26] The Centre for Cross Border Studies (CCBS) is a major "Think Tank" in Europe whose main goal is to enhance and further develop cross border networks, relationships and collaboration with key partners at local, regional, national, EU and international levels. CCBS has successfully developed tools and training regarding cross border leadership, project evaluation, border impact assessments as well as budget evaluation. [33-35]

Collaboration and Leadership

The best approach to impact health disparities and address the complex needs of a border region is for the countries that share the border to work together collaboratively.[31, 7-9] Developing effective collaboration among border

partners in order to impact the health of the border region can be achieved by forming a collaborative that seeks to harness the expertise of various levels of government, academia, and NGOs in local border regions. In order to be successful, transparency, trust and collaborative leadership are essential.[1, 14, 19, 20]

While there is not an abundance of literature that addresses cross border health collaboration and leadership in this context, Catalina Denman's "Working beyond Borders: A handbook for transborder projects in health" describes successful process ingredients for border health collaboration.[36] Denman applied and adapted Arthur Himmelman's stages of collaboration (*networking, cooperating, coordination and collaboration*) to cross border health collaboration, not as sequential stages but in terms of "degrees".[36, 37] So, depending on the cross border issue, project or goal being addressed by the cross border coalition/collaboration, the group members should be using the appropriate corresponding degree of *networking, cooperating, coordination or collaboration*. As an example, in order for two countries to successfully address an infectious disease that knows no border, a cross border collaborative group would be *coordinating* and *collaborating* to make a real impact. If there was no acute infectious disease issue to be addressed, the cross border group may be in a *networking* or *cooperating* state. Denman also found and described that successful cross border health collaborative organizations include trust building, commitment, shared understanding, and face to face dialogue.

For additional background to support exploration of cross border health leadership and collaboration we also looked at leadership in cross-sector and in-

tra-sector collaboration settings. We define cross-sector collaboration as *the linking or sharing of information, resources, activities, and capabilities by organizations in two or more sectors to achieve jointly an outcome that could not be achieved by organizations in one sector separately.*[38] An example of a cross-sector collaborative would be an AIDS treatment collaborative that may include medical, government, community, academic, advocacy and other organizations brought together to address goals related to treatment and quality of life of persons with AIDS.

The type of leadership in these contexts crosses many boundaries and is fundamentally different from position-based leadership authority or tactical-level leadership exercised within organizations [39-44]. Research by Chrislip & Larson on collaborative leadership had found that collaborative leadership is unique in that leaders of such collaboratives usually have no formal power or authority and tend to exercise leadership in what may be the one of the most difficult context, when all parties involved are peers.

> *Collaborative leaders have a different focus [from other kinds of leadership] – promoting and safeguarding the collaborative process. Collaborative process leadership activities include "keeping stakeholders at the table through periods of frustration and skepticism, acknowledging small successes along the way, helping stakeholders negotiate difficult points, and enforcing group norms and ground rules.*[41]

Additionally, Mattessich and Monsey had completed an exhaustive literature review regarding the factors that were found to influence successful collaboration. They found that the most important characteristics or approaches that

leaders of cross-sector collaboratives should strive for within the collaborative context are *understanding and trust, mutual respect*, *having an appropriate cross-section of members* and *open and frequent communication*, [42]

Finally, according to W. Roger Miller and Jeffrey P. Miller many cross sector collaborations are created in partnership with a diverse groups of players including government agencies, academia, non-profit and for profit entities. Sometimes collaborations with this cross section of partners is often difficult to build and in order to develop these cross-sector and cross border collaborations there must be a set of leadership styles or approaches that promote success in collaborations. [43, 44, 14] Leadership plays a key role in the development of collaborative partnerships and their inception. Miller & Miller sought to answer the question, if leaders can utilize specific leadership styles to advance their organizations' missions through collaboration, which styles and leadership actions are the most important? Their study asked leaders of successful collaborative organizations which of the leadership styles were most important and worked best. To do this, they developed a qualitative study and performed key informant interviews with executive level leaders who developed and coordinated cross sector collaborative organizations.[43]

Study Setting

The dissertation research was conducted in the border region of United States and Mexico as well as the border region of Northern Ireland and the Republic of Ireland. Cross border collaborative leaders and actors working as part of a binational cross border collaborative groups in these regions were engaged.

According to the La Paz agreement, the United States-México border region is defined as the area of land being 100 kilometers (62.5 miles) north and south of the international boundary. The border is approximately 2000 miles from the southern tip of Texas to California. The border region population is estimated to be approximately 12 million. The border population is expected is expected to double by the year 2025. There are hundreds of cross border actors and leaders developing and performing cross border work in this region.[44]

The Northern Ireland (United Kingdom) and Republic of Ireland border is referred to as the Irish border or, on either side of it, simply as *the border*. The border runs for a total of 310 mi (499 km) from Lough Foyle in the north of Ireland to Carlingford Lough in the northeast (on the Irish Sea), separating the Republic from Northern Ireland. [45] There is a long history of border collaboration in this region that overcomes differences in currency (British Pound and the Euro), health care systems as well as religious differences (Catholic and Protestant) to name a few. Both countries speak English but the Gaelic language is on the rise in the Republic of Ireland with 35% of the population now speaking their first official language.[46]

Conceptual Framework

The research reported in Chapters 2, 3 and 4 was conceptualized from the work developed by Denman et al., Miller & Miller and CCBS.[36, 43, 35]

The Denman et al.[36] model reflects that the collaborative characteristics of *trust & respect*, *motivation* and *cultural issues* have an effect on the development of cross border health collaboration. Their findings indicate that a focus that in-

cludes these themes when working with border actors and leaders trying to engage in cross border health collaboration is the best course. In their handbook, they have developed 29 open ended questions that sought to explore border actor's beliefs and expectations related to these themes and recommend border leaders and actors use these questions for discussion when seeking to form cross border health collaborative partnerships and organizations.

In the research and model developed by Miller & Miller[43] in the context of cross sector collaboration, they sought to answer the question, if leaders can utilize specific leadership styles to advance their organizations' missions through collaboration, which styles and leadership actions are the most important? Their study asked leaders of successful collaborative organizations which of the leadership styles were most important and worked best. From their qualitative work, they were able to identify eight leadership styles that were found to be key to leading and developing collaboratives: authentic self-awareness, passion/personal vision, communication for understanding, facilitator, relationship building, consultative decision-making, forging group vision and managing for action. While this research is not a how-to manual, it does identify leadership styles and provides some key ideas on how to lead collaborations in a cross sector context. This research model provided leadership context into the nature and development of cross sector collaborative relationships that informed the survey development described in chapter 2. The themes of this study of *trust, motivation for involvement, transparent communication, and relationship building* were found to be key in informing our research.

Lastly, we drew on the cross border work of CCBS, in the form of their many cross border toolkits to include the PAT-TIEN Toolkit for Inter-Cultural/Cross-Border Project Management.[35] The authors not only discuss approaches for leading collaborative work, but become efficiently prescriptive in module 6 of their toolkit and layed out the key competencies of leading cross border collaboratives. The approaches and goals identified that informed our research included leadership that fostered *trust building, transparent and open communication, fostering respect, cultural understanding*, as well as other specific interventions such as *face to face communication* and *holding binational meetings in neutral locations*.

REFERENCES

1. World Bank Health Financing Country Profile-Mexico http://documents.worldbank.org/curated/en/2014/01/19783231/mexico-health-financing-profile Date accessed March 28, 2015

2. OECD (2013), *Regions and Innovation: Collaborating across Borders,* OECD Reviews of Regional Innovation, OECD Publishing. *http://dx.doi.org/10.1787/9789264205307-en*

3. Association of European Border Regions (AEBR) (2010), *Cross-Border Cooperation in America: Contribution to the Regional Integration Process*, AEBR, Enschede, Netherlands, 2009.CE.16.0.AT.118.

4. CIA World Fact book https://www.cia.gov/library/publications/the-world-factbook/geos/ee.html Date accessed June 1, 2015

5. European Commission (2010), *Regional Policy Contributing to Smart Growth in Europe 2020*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2010)553 final, European Union, Brussels.

6. OECD (2012), *Promoting Growth in All Regions*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264174634-en.

7. Coker, Richard J., Rifat A. Atun, and Martin McKee. "Health-care system frailties and public health control of communicable disease on the European Union's new eastern border." *The Lancet* 363.9418 (2004): 1389-1392.

8. De Jesus, Maria, and Chenyang Xiao. "Cross-border health care utilization among the Hispanic population in the United States: implications for closing the health care access gap." *Ethnicity & health* 18.3 (2013): 297-314.

9. Cohen, Stuart J., and Maia Ingram. "Border health strategic initiative: overview and introduction to a community-based model for diabetes prevention and control." *Prev Chronic Dis [serial online]* (2005).

10. Koppenjan, J & Klijn, E-H. (2004). Managing Uncertainties in Networks. Routledge: London & New York.

11. Mandell, M. P. (Ed.) (2001). Getting Results Through Collaboration. Quorum Books: Westport, Ct.

12. Huxham, C. and Vangen, S. (2000). Leadership in the Shaping and Implementation of Collaboration Agendas: How Things Happen in a (Not

Quite) Joined Up World Academy of Management Journal 43 96): 1159-1175.

13. Leadership: Collaborative Leadership Theory. Accessed at http://www.orchestri.com/category/corporate-futuring/medewerkers-human-capital/

14. Matthews CE III, Wooten W, Rangel Gomez MG, Kozo J, Fernandez A and Ojeda VD (2015) The California border health collaborative: a strategy for leading the border to better health. Front. Public Health 3:141. doi: 10.3389/fpubh.2015.00141

15. Warner, D. & Jajnke, L. (2003). U.S./Mexico Border Health Issues: The Texas Rio Grande Valley.

16. Williams, J., Edwards, J., Silenas, R., Kang, J., & Akins, R. Study of disease surveillance policy issues across the international borders of the United States. April 2006.

17. Kiy, R., Frega, M., Garfein, R., et al. Tuberculosis in the San Diego-Tijuana Border Region: *Inspiring philanthropy beyond borders Time for Bi-National Community-Based Solutions 2010.*

18. Lobato, M. & Cegielski, P. CDC MMWR: Preventing and Controlling Tuberculosis Along the U.S.-Mexico Border, January 19, 2001 / 50(RR1); 1-2

19. Liu, Y., Painter, J., Posey, D., Cain, K. et al. (2012). Estimating the Impact of Newly Arrived Foreign-Born Persons on Tuberculosis in the United States. *Plus One*, *7*(2), e32158. doi:10.1371/journal.pone.0032158.

20. Ten Against TB. TATB, Ten against TB Strategic Plan 2005 to 2010. http://usmex2024.uscmediacurator.com/wp-content/uploads/2013/10/Ten-vs-TB-plan.pdf Date accessed June 1, 2015

21. Shore, K. & Yakes, B. Understanding California's Public Health System. California Health Policy Forum Issue Brief, 2007. http://www.cahpf.org/GoDocUserFiles/208.CHI%20Brief%20California.pdf Date accessed June 2, 2015.

22. Pan American Health Organization, PAHO TB in the U.S Mexico Border Region, http://www.paho.org/hq/index.php?option=com_content&view=article&id=2511:tb-us-mexico-border-region&Itemid=40275&lang=en. Date accessed June 4, 2015.

23. European Commission (2010), *Interact Newsletter*, September, http://ec.europa.eu/regional_policy.

24. Nauwelaers, C., K. Maguire and G. Ajmone Marsan (2013), "The case of the Bothnian Arc (Finland-Sweden) – Regions and Innovation: Collaborating Across Borders", *OECD Regional Development Working Papers*, No. 2013/17, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k3xv0r6v26b-en.

25. Perkmann, M. (2003), "Cross-border regions in Europe. Significance and drivers of regional cross-border co-operation", *European Urban and Regional Studies*, Vol. 10, No. 2, pp. 153-171.

26. Böhm, H. 2014, A Comparison of Governance Forms for Cross-Border Cooperation Within the EU. The Journal of Cross Border Studies in Ireland. Vol 9, p 36-50

27. Agranoff, R. (2006). "Inside Collaborative Networks: Ten Lessons for Public Managers". *Public Administration Review*, Special Issue, Supplement to Issue: 66(6).

28. Agranoff, R. (2003) Leveraging Networks: A Guide for Public Managers Working Across Organizations. IBM Endowment for the Business of Government: Arlington, Va.

29. Agranoff, B. and McGuire, M. (2001). After the network is formed: Process, power and performance, in M.P. Mandell (Ed) Getting Results through collaboration: Networks and network structures for public policy and management, 11-29.Quorum Books: Westport, CT.

30. Kickert, W. J.M., Klijn, E-H. & & Koppenjan, J. (1997). Managing Complex Networks: Strategies For The Public Sector. Sage Publications: London.

31. United States Mexico Border Health Commission (USMBHC). http://www.borderhealth.org/about_us.php Date accessed, May 28, 2015

32. United States-Mexico Border Health Commission (USMBHC). *Tuberculosis along the United States-Mexico Border.* June 8, 2009.

33. Transfrontier Euro-InstituteNetwork (TIEN). http://www.transfrontier.eu/ Date accessed June 2, 2015

34. Euro Institute. http://www.euroinstitut.org/wFranzoesisch/1-Qui-sommes-nous/in-english.php Date accessed June 2, 2015

35. Centre for Cross Border Studies. http://crossborder.ie/ Date accessed June 2, 2015

36. Denman, C. Working beyond borders: A handbook for transborder projects in health. El Colegio de Sonora, 2004.

37. Himmelman, Arthur T. "On coalitions and the transformation of power relations: Collaborative betterment and collaborative empowerment." *American journal of community psychology* 29.2 (2001): 277-284.

38. Bryson, J. M., Crosby, B. C. and Stone, M. M. (2006), The Design and Implementation of Cross-Sector Collaborations: Propositions from the Literature. Public Administration Review, 66: 44–55. doi:10.1111/j.1540-6210.2006.00665.x

39. Bailey, D. and Koney, K. (1996), "Interorganizational community-based collaboratives: A strategic response to shape the social work agenda," *Social Work. 41, (6),* 602–612.

40. Chrislip, D. & Larson, C. (1994). Collaborative leadership, San Francisco: Jossey-Bass.

41. Chrislip, D. (2002). The Collaborative leadership field book – A guide for citizens and civic leaders. San Francisco: Jossey-Bass.

42. Mattessich, P., Murray-Close, M. & Monsey, B. R. (2001). Collaboration: What makes it work? Saint Paul, MN: Amherst H. Wilder Foundation

43. Miller, W. R., & Miller, J. P. (2006). Leadership styles for success in collaborative work.

44. United States Mexico Border Health Commission, http://www.borderhealth.org/border_region.php Accessed 12/10/16

45. Sharrock, D. (25 October 2007). "New border control will abolish free movement between UK and Ireland". The Times.

46. Irish Central, Irish now the third most spoken language, March 331, 20012. http://www.irishcentral.com/news/irish-now-the-third-most-spoken-language-in-ireland-after-english-and-polish-145200025-237438651 Accessed 12/10/16

CHAPTER 2: CROSS BORDER HEALTH COLLABORATIVE LEADERSHIP: DEVELOPING A LEADERSHIP SURVEY INSTRUMENT

ABSTRACT

This article describes the development of a quantitative survey instrument designed to explore what leadership approaches were deemed important by current cross border leaders and actors performing cross border work.

A forty statement (8 categories), Likert type quantitative survey was developed with the goal of exploring the importance of leadership themes and or actions in developing and coordinating cross border health collaboratives. The cross border setting (n=159) included the border regions of the Republic of Ireland (IRE), Northern Ireland (NIRE), Mexico (MX) and the United States (U.S.). An exploratory factor analysis was utilized. Upon completion of the exploratory factor analysis the survey instrument was reduced to five categories and 20 statements. The five factor leadership themes/categories (with Cronbach Alpha measure) that were identified were *Communicate to Engage the Collaborative (.77)*, *Steer the Collaborative (.74), Understand the Members of the Collaborative (.69), Manage the Collaborative (.71) and Strategic Relationship Building for the Collaborative .59).* The respondents from both border regions agreed on important leadership approaches needed to lead and develop a border health collaborative. An initial/preliminary 20 statement survey instrument was developed with adequate construct validity as well as internal reliability to assist in the exploration of what leadership approaches are important in developing cross border health collaboratives. The findings from this study align with recently published cross-border

toolkits from Europe and the US-Mexico border region that describe the manner in which cross-border leaders and actors should proceed in developing and co-ordinating projects and collaboratives. Lastly, this study represents the first step in solidifying a good survey instrument. Further develop of this survey instrument is needed to enhance construct and internal reliability.

INTRODUCTION

In both the U.S./Mexico and European Union (EU) border regions there has been a history of approaching border issues in a collaborative manner and there are multiple collaborative organizations, working toward improving the lives and overall well-being of the inhabitants of their respective border regions [1-4]. In the U.S./Mexico border region, the United States – Mexico Border Health Commission plays a vital role in facilitating and supporting collaborative efforts in the border region with State and Local border leaders who in turn sponsors cross-border training for leaders from all types of organizations (government, NGO, academia…) [5, 6]. The same is true in the EU. The EU for the past 20 years has been facilitating and funding efforts through grants for local, federal and regional cross border efforts called ERUGIO and INTERREG. Hundreds of millions of dollars have been spent in this effort [7]. The Centre for Cross Border Studies (CCBS) is a major “Think Tank” in Europe whose main goal is to enhance and further develop of cross border networks, relationships and collaboration with key partners at local, regional, national, EU and international levels. Successful tools and training have been developed regarding cross border project evaluation, border impact assessments as well as budget evaluation [8-10].

In both continents there is an understanding that in order to address the complex needs of the border region, the countries that share that border need to work together to make a difference [5, 11-13]. More specifically, leadership of those cross border collaborative endeavors is key to the success of any impact effort [14-17].

While the above body of work identifies and describes aspects of effective cross border collaborative leadership there are limited empirical studies that identifies and describe those approaches. This study seeks to add to the limited empirical cache by developing a quantitative survey instrument that would explore what leadership approaches were deemed important by current cross border leaders and actors performing cross border work.

METHODS

The unit of analysis for this study was the cross-border region between two or more countries. Interest was on current cross-border leaders as well as actor's opinions on what leadership approaches were needed to develop cross border health collaboratives and relationships within the collaborative leadership context.

The development of the survey instrument went through five phases: (1) formative research in the Ireland/Northern Ireland border region, (2) initially survey development adapted from W. Roger Miller and Jeffery P. Miller (2006)[18] eight leadership themes for collaborative leadership, (3) a panel of border health collaborative professionals reacted to the survey items, (4) a preliminary version of the survey was field tested with cross border actors, (5) a large scale study

was conducted in which the psychometric properties of the instrument was assessed.

Formative Research

Ten key informant interviews were conducted with leaders of two successful cross border health organizations in the border region of the Republic of Ireland and Northern Ireland (five from each organization). The Centre for Cross-Border Studies (CCBS) is a “Think Tank” organization located in Armagh, Northern Ireland whose main goal is to enhance and further develop cross border networks, relationships and collaboration with key partners at local, regional, national, EU and international levels. The other organization was Cooperating and Working Together (CAWT), a cross border health and social care partnership whose mission is to seek to add value to health and social care activity in the border region.

Key informants were identified by the executives of CCBS and CAWT for interview. Interviews were conducted in person and via telephone. A fifteen question interview document was used to elicit opinions about cross border leadership approaches, collaborative governance and general border health collaborative development approaches that were deemed important and or successful.

Upon review of key informant answers, trust building, relationship building, face to face communication, knowledge of political and cultural differences were themes that were identified. The information alone from these interviews was not adequate to develop a large number of survey questions for this instrument.

Adapted Survey Instrument

There are limited empirical quantitative studies that identifies and or describe the leadership approaches needed for effective cross border health collaborative development. In contrast there is a qualitative body of work that identifies and describes effective collaborative leadership in domestic community settings and some in cross border settings.

In addition to the formative researched discussed above, survey statements for this instrument was developed based upon the qualitative research of W. Roger Miller and Jeffery P. Miller.[18] In their research, they had performed key informant interviews with executive level leaders who develop and coordinate cross-sector collaborative organizations. Through their findings they identified eight leadership styles/themes needed for leading multi-sector collaboratives: authentic self-awareness, passion/personal vision, communication for understanding, facilitator, relationship building, consultative decision-making, forging group vision and managing for action.

Based on the formative research information and through reviewing all the characteristics that make up Miller's eight leadership themes, a fifty six statement, Likert type scale was developed (seven statements per theme). The 5 point Likert scale rated importance of the fifty six statements as follows; 5: Very Important, 4: Important, 3: Moderately Important, 2: Of little Importance, 1: Unimportant.

Panel of Border Health Experts

To check the content validity of the statements, the survey instrument was submitted to a panel of US/MX border health collaborative professionals and advisory board members who reviewed the statements in the survey instrument. The advisory board members were from UCSD, SDSU and local California/Baja California border health collaborative professionals that were part of local and state governments as well as an NGO. The panel was asked to review the statements that made up the survey instrument for relevance to leadership in border health collaborative work and this resulted in reducing the survey from fifty six statements to forty.

Field Test

A field test was conducted to test the clarity of the instructions, length of the instrument and face validity of the statements. Five experienced cross border leaders and or actors were asked to take the survey and respond to the instrument. They were to share their feedback and perceptions of the survey overall and any specific items regarding statements. In general, all agreed that the instrument had face validity, was clear and concise. There were a few recommendations for rewording statements or instructions. For example, the initial survey instructions had at the top of each page of the survey the same instructional statement;

While considering the leadership of a cross border collaborative organization and the relationships needed to be successful: How important are the following?

A field test participant asked about adding an example type instructional statement, so, *please participate in this survey as if you have the chance to give advice to someone who will be starting/leading a cross border collaborative organization or initiative* was added to the instructions. This helped to clarify the intent and frame the context of the information we were seeking.

Larger Scale Study

After the panel review and the field test, 40 statements remained as part of the survey instrument that would be used in the larger scale study (LSS). In addition to the opinion/perception data that was gathered in the LSS, we wanted to explore the factor/category structure, validity and reliability of the statements.

Measures & Study Population

People who worked as part of a binational cross border collaborative group were invited to participate in the survey. Executives at cross border health collaboratives CAWT and CCBS working in the IRE/NIRE border regions as well as the US-MX Border Health Commission were contacted in order to email the survey link to respondent candidates utilizing their organizations email listservs. Face to face, phone and email communication took place between the PI and these executives over a previous two year period exploring these research concepts in general and they agreed to send the survey to their members. The survey link was emailed to the 710 members of the CAWT/CCBS/UMBHC listervs beginning on March 1, 2016 and the survey was closed on April 8, 2016 with 159 people responding (22% response rate). In between the beginning and closing period of the survey, two reminder to participate emails had been sent to the

listservs. The survey was anonymous, the respondents email address and IP address was not gathered during the survey collection process.

The survey was administered via Survey Monkey Inc. Survey Monkey is an online survey development cloud-based software system that serves as a tool to develop surveys as well as providing basic data analysis in a multitude of languages. An Introductory invitation precluded the survey link in an email sent out to potential survey respondents by CAWT, CCBS and UMBHC. The URL link of the survey was sent over a secure, SSL encrypted connection. Once all the survey responses had been collected in Survey Monkey they were downloaded into an Excel spreadsheet. Each set of answers from each respondent was given an ordinal number identifier (respondent 1, respondent 2..., 3…).

The study protocol was reviewed and approved as *Exempt* from IRB by the University of California San Diego Human Research Protection Program. Informed consent was obtained from all participants.

Survey Data and Quantitative Analyses

All quantitative analyses were completed in SAS Studio 3.4 Enterprise Edition (SAS Institute Inc., Cary, NC). Descriptive statistics of survey respondents' characteristics were calculated.

As this was a newly developed survey instrument, preliminary statistical analyses focused on determining the construct validity and internal reliability of the survey themes. Construct validity was tested using an exploratory factor analysis (EFA). Factors were rotated using varimax methods to preserve orthogonality. Factor loadings were investigated and a cross-loading threshold of 0.4

was set; this ensured that statements which correlated strongly with only a single factor were retained. Statements which cross-loaded at 0.4 or above were dropped and the EFA repeated until all remaining statements loaded cleanly (>0.4).Internal reliability analyses of the final factors were conducted using the Cronbach Coefficient Alpha statistic. To retain the maximum number of themes for further analysis in this pilot study, a raw Cronbach Alpha of 0.6 or above per factor was considered satisfactory.

Factor scores were calculated for each survey respondent by taking the mean of all statements contained within each factor. Factor score distributions were examined and determined to be non-normal; the median and range of scores are reported for final factors and stratified by country. Overall differences in median factor scores between countries were analyzed using the Kruskal-Wallis omnibus test with a significance level of 0.05. Multiple comparison post hoc tests, using methodology described by Elliott and Hynan (2011)[19], were completed to ascertain where significant group differences were found.

RESULTS

One hundred and fifty-nine individuals that work as part of a binational cross border collaborative group participated in the survey resulting in a response rate of 22%. Thirty-six respondents were from Northern Ireland, twenty-three were from the Republic of Ireland, sixty seven were from the United States and thirty three were from Mexico. Most respondents worked in the government sector (64%) and were female (65%). While 30% of the respondents had sixteen years of leadership experience and 69% had more than six years of experience

in a leadership role, the remaining respondents were more closely distributed in regards to number of years in a leadership role, 1-5 years 24%, 6-10 years 23% and 11-15 years 16%. (Table 2.1)

During the exploratory factor analysis process, Factors 5, 7 and 8 were dropped from further analysis as each had fewer than three statements load in above 0.4. Factors 1, 2, 3, 4, and 6 were retained. Results indicate that five themes/categories and twenty survey statements had construct validity and were internally consistent. The five leadership themes/categories were identified as *Communicate to Engage the Collaborative*, *Steer the Collaborative, Understand the Members of the Collaborative, Manage the Collaborative and Strategic Relationship Building for the Collaborative.* The corresponding overall Cronbach alpha values for the five categories were .77, .74, .69, .71, and .59 respectively. The five categories, twenty statements and Cronbach Alpha values can be seen in Table 2.2

Upon completion of the exploratory factor analysis the survey instrument was reduced to five categories and 20 statements. Median factor scores for each country and each category can be seen in table 2.3. Utilizing the Kruskal-Wallis omnibus test and comparison post hoc tests as indicated, no significant group (country) differences were found.[19]

DISCUSSION

We reached our goal of this exploratory study. We were able to develop an initial survey instrument that was able to identify what a sample of experienced current border leaders and actors identified as important leadership ap-

proaches in developing and leading cross border health collaboratives. This study represents an important first step in empirically identifying those unique leadership approaches. We started with key informant interviews of executive cross border leaders and past qualitative work that looked at cross sector collaboration that informed our survey instrument development. [18] We initially developed a 56 item survey that through a panel of cross border health experts and field testing was reduced to a 40 statement instrument. Lastly, through EFA we were able to reduce the instrument to a "first step" reliable survey of 20 statements representing 5 leadership themes/categories. The survey response data revealed that there was significant agreement in the border regions of Ireland/Northern Ireland and United States/Mexico that the 5 leadership themes/categories (C*ommunicate to Engage the Collaborative*, *Steer the Collaborative, Understand the Members of the Collaborative, Manage the Collaborative and Strategic Relationship Building for the Collaborative* (table 2.) are important to building a cross border health collaborative.

Survey Response Data

With nearly one third of leaders surveyed (n=159, 30%) having over 16 years in a leadership role and 69% with over 6 years similar experience, there is consistency in the results among more experienced leaders as well as newer leaders. While this survey produced no apparent differences between countries which is outright significant, all respondents from both countries (n=159) rated the content in the theme "Communicate to Engage" the most important in the survey (median scores between 1-5, N. Ireland 4.8 & Ireland 4.4, US 4.6 & MX

4.6). These findings reflect that cross border leaders shared that being; direct, open and honest in all communication, showing appreciation, connecting people and organizations with resources, being inclusive and setting specific goals and objectives are key to successful border health collaborative leadership. In addition, within the theme “Manage the Collaborative” (median scores between1-5, N. Ireland 4.3 & Ireland 4.3, US 4.3 & MX 4.0) leaders expressed that a governance structure developed through consensus in an atmosphere that fosters inventive solutions to problems are needed. Also, it was deemed important that the members of a border health collaborative need to feel they have a voice in the collaborative in addition to the leadership. The remaining three leadership themes, “Steer the Collaborative,” “Understand the Members,” and “Strategic Relationship Building” were also deemed as key leadership approaches in the border collaborative setting (all median scores > 4.0). The approaches deemed important by the respondents included utilizing a diverse, steering type committee in an open way; understanding motivations of members and their organizations involvement, to include political and cultural differences; and building relationships with people “ready” to work together, as well as by meeting on neutral territory and or equally on both sides of the border.

Our findings align with and support significant reports and or operational toolkits produced in Europe and in the U.S.-MX border region that assist cross-border leaders and actors in developing and performing border collaborative work.[8, 9 & 20] This can be seen in several shared approaches: communication is expected to be open, transparent and face to face dialog is highly valued under-

standing cultural and political differences is foundational; a collaborative structure built upon a shared vision, consensus and *the right people and right structure* to include holding binational meetings in a neutral location or equally on each side of the border.[20] Additionally, in the PAT-TIEN Toolkit for Inter-Cultural/Cross-Border Project Management the authors not only discuss similar approaches for leading collaborative work, but become efficiently prescriptive in module 6 of their toolkit and lay out the key competencies of a cross-border project manager. This includes competency classifications, such as *Knowledge based competencies, Methodological competencies, Personal and Social skills, and Communication skills.*[10] *All* of the survey statements in our current study can be found within and in support of the *Personal/Social* and *Communication skills* sections of this comprehensive toolkit.

Past qualitative work as well as our findings suggest that *trust* is perceived as key to success amongst the border collaborative's members and that a collaborative process and structure is needed to address any number of shared cross-sector issues.[2, 10] Extant literature reports that the process variables of trust building, commitment, shared understanding, and face-to-face dialogue are at the core of collaborative leadership.[10, 18]

Survey Development and Analysis Considerations

As this was a newly developed survey instrument utilized to begin the exploration and development of knowledge related to cross-border health collaborative leadership, exploratory factor analysis (EFA) was indicated. [22-24]

Sample size

While the sample size for this study (N=159) is adequate for this initial survey development, in order to further develop the survey a larger sample size would be recommended. There are many opinions about how large a sample size should be using EFA. Gorsuch (1983) believed that the sample size for an EFA should be at least 100. [25] Others suggest that an N of 200 is "fair," 300 is "good," 500 is "very good," and 1,000 or more is "excellent." [26] Even further, some argued that the ratio of the sample size to the number of items (p) should be at least 10. [27] While there is no absolute rule and this is open to interpretation, most agree that for EFA, sample size is actually a function of several aspects of the data, including how closely items are related to the target construct. According to MacCullam et al., [28] if the items/statements relate well to the construct, the required sample size would be small. If there are a good number of items per factor (i.e., preferably five or more items tapping the same factor) and each of those items are closely related to the factor in question, a sample size of 100-200 may be sufficient. The results for this EFA have four of the five factors with either 4 or 5 items in in each indicating for this stage of survey development the sample size was adequate.

Factor Loading

In EFA, how large an item's factor loading should be in order to be retained is also debated heavily. As with sample size, there is no one agreed upon set answer reflected in the literature.[26]

According to Matsunaga [24]:

> *Ideally, researchers should retain items that load clearly and strongly onto one component/factor while showing small to nil loadings onto other components/factor but usually, researchers are in a situation to make some delicate, and in part subjective, decision. For example, an item may cross-load (i.e., having large factor loadings onto multiple components/factors), or its primary loading is not as large to call it "clearly loaded"; thus, there is a certain degree of judgment-call involved in this procedure.*

On a liberal to conservative measuring stick, setting the cutoff at .40 (i.e., items with a factor loading of .40 or greater is retained) is a minimum acceptable threshold, and .60/.70 would be the limit of the conservative end.[23,29, 30] For this EFA .40 was used and all 20 statements/items loaded clearly into single factors and were not cross loading into other factors. It should be noted that 14/20 items loaded >.60.

Internal Reliability/Cronbach Alpha

It is widely accepted that coefficient alpha has effectively become the measure of choice for estimating the reliability of a multi-item scale and is one of the foundations of measurement theory.[31-34] At one point back in 1994, Cronbach's 1951 article had been referenced in more than 2,200 articles in the previous 20 years.[35]

What the standard threshold measure of reliability is has historically had a significant range (from .5 to .95) depending on what the scale or instrument was attempting to measure. Literature and opinion reflect that the recommendation of Nunnally[36] is the most widely referenced, either in support or criticism of an obtained reliability coefficient.[31] Additionally, there is a belief that for a survey instrument in the preliminary stages of development it is generally thought to re-

quire a reliability score in the lower range described above especially when the instrument is not used to discriminate between groups or make decisions about individuals (Peterson…). In 1967, Nunnally[36] recommended that the minimally acceptable reliability for preliminary research should be in the range of .5 to .6, whereas in 1978 he increased the recommended level to .7. For our study we were attempting to make allowances in the preliminary analysis to retain a broad number of survey themes & statements and thus set a threshold for reliability to .6. Of the five retained factors (Table 2.) the reliability measure for three factors were >.7, one was at .69 and the final factor (Strategic Relationship Building…) was .59. Please note that we understand that further study is needed to shore up this survey instrument to justify continued inclusion of the full host of themes and statements. Citing the example above, the *Strategic Relationship Building for the Collaborative* theme is just near the .6 threshold (.59), and we would look to explore alternative statements and or rewording of current statements to capture the same theme / ideas more reliably.

LIMITATIONS AND FUTURE RESEARCH

Limitations exist with this study, and future work should focus on addressing these limitations. One of the concerns is that 2 of 5 factors (factors 3 and 5) have a reliability coefficient (Cronbach's alpha) scores <.70 (.69 and .59 respectively). As this is a first step in honing this survey, future instrument development should focus on rewording statements and or developing alternative statements getting at the same theme. Additionally, interpretation of factors defined by only 3 items is sufficient for this survey presently (with a reliability coefficient >.7)[19];

but going forward we would look to add to the number of items in factor 4 (Table 2). Finally, for the next iteration of this survey instrument we want to increase the sample size of the respondents to approximately 300 to 500 as this would satisfy literature mentioned above.

CONCLUSION

An initial/preliminary 20 statement survey instrument was developed with adequate construct validity as well as internal reliability to assist in the exploration of what leadership approaches are important in developing cross border health collaboratives. The findings from this study align with recently published cross-border toolkits from Europe and the US-Mexico border region that describe the manner in which cross-border leaders and actors should proceed in managing and developing projects and collaboratives. Lastly, this study represents the first step in identifying those leadership approaches and further development of this survey instrument is needed which will enhance construct and internal reliability.

Table 2.1 Characteristics of border collaboration survey respondents, by country (n= 159) 2016

Characteristic	United States (n = 67) n (%)	Mexico (n = 33) n (%)	Republic of Ireland (n = 23) n (%)	Northern Ireland (n = 36) n (%)	Total Sample (n = 159) n
Survey language					
English	64 (*50.8%)*	3 (2.4%)	23 (18.3%)	36 (28.6%)	126
Spanish	3 (9.1%)	30 (90.9%)	0 (0.0%)	0 (0.0%)	33
Sector					
Government	35 (34.3%)	16 (15.7%)	19 (18.6%)	32 (31.4%)	102
Academia	13 (54.2%)	9 (37.5%)	1 (4.2%)	1 (4.2%)	24
Non-Governmental Organization	13 (56.5%)	6 (26.1%)	2 (8.7%)	2 (8.7%)	23
Private Organization	5 (62.5%)	2 (25.0%)	0 (0.0%)	1 (12.5%)	8
Private Citizen	1 (50.0%)	0 (0.0%)	1 (50.0%)	0 (0.0%)	2
Years in leadership position/role					
. 0	7 (58.3%)	1 (8.3%)	2 (16.7%)	2 (16.7%)	12
1-5	17 (44.7%)	11 (28.9%)	5 (13.2%)	5 (13.2%)	38
6-10	13 (36.1%)	10 (27.8%)	6 (16.7%)	7 (19.4%)	36
11-15	11 (42.3%)	6 (23.1%)	5 (19.2%)	4 (15.4%)	26
16+	19 (40.4%)	5 (10.6%)	5 (10.6%)	18 (38.3%)	47
Gender					
Male	25 (45.5%)	14 (25.5%)	7 (12.7%)	9 (16.4%)	55
Female	42 (40.4%)	19 (18.3%)	16 (15.4%)	27 (26.0%)	104

Table 2.2 Internal Consistency of Border Collaboration Survey Categories (Raw Cronbach alpha)

Category	Overall Cronbach Alpha
Communicate to Engage the Collaborative	0.77
▪ Be direct, open and honest in all communication within the group	
▪ Show genuine appreciation for the work of others in the group	
▪ Connect people and organizations with the resources they may need to be successful	
▪ Ensure that members of the group that may be negatively affected by a decision are engaged in the decision making process	
▪ Set specific goals, objectives and create targeted outcomes related to the vision of the cross border collaborative	
Steer the Collaborative	0.74
▪ Utilize a steering committee or some other small group to set the agenda prior to cross border collaborative meetings	
▪ The process for joining and participating in the steering committee should be open and transparent	
▪ Work to diversify the leadership of the steering committee and the cross border collaborative as a whole (government, academia, non-profits…)	
▪ Value the dissenting voice in a consensus decision	
Understand the members of the collaborative	0.69
▪ Understand the motives of cross border collaboration members for being involved in the group	
▪ Have a good understanding of the politics of any issue being considered by the group	
▪ Identify and discuss cultural and political differences with the group membership	
▪ The process of group visioning should address the concerns of the organizations involved in the cross border collaborative	
Manage the collaborative	0.71

Table 2.2 Internal Consistency of Border Collaboration Survey Categories (Raw Cronbach alpha) - continued

Category	Overall Cronbach Alpha
▪ Create a governance structure through consensus	
▪ Challenge assumptions of how things have been done in the past and what new inventive solutions can be created	
▪ Ensure the cross border collaborative membership knows that the collaborative belongs to them and not just the leadership	
Strategic relationship building for the collaborative	0.59
▪ Be modest and share work credit with others in the cross border collaborative group	
▪ Seek out those people that who are easy to work with and willing to partner as opposed to people that are “non-collaborators”	
▪ Think creatively about who and how to engage individuals and organizations that do not typically work together	
▪ Ensure that cross border collaboration meetings are held in a neutral location and or equally held on each side of the border	

Table 2.3 Median Factor Score by Country, Border Collaboration Survey

Category	**United States** Median (Range)	**Mexico** Median (Range)	**Republic of Ireland** Median (Range)	**Northern Ireland** Median (Range)
☐Communicate to Engage the Collaborative	4.60 (3.40 – 5.00)	4.60 (3.80 – 5.00)	4.40 (3.80 – 5.00)	4.80 (3.40 – 5.00)
☐Steer the Collaborative	4.25 (3.25 – 5.00)	4.50 (3.50 – 5.00)	4.00 (2.50 – 5.00)	4.00 (3.00 – 5.00)
☐Understand the members of the collaborative	4.50 (2.67 – 5.00)	4.50 (3.25 – 5.00)	4.25 (3.25 – 5.00)	4.00 (2.25 – 5.00)
☐Manage the collaborative	4.33 (3.00 – 5.00)	4.00 (2.67 – 5.00)	4.33 (2.67 – 5.00)	4.33 (3.00 – 5.00)
☐Strategic relationship building for the collaborative	4.25 (3.50 – 5.00)	4.25 (3.50 – 5.00)	4.00 (3.00 – 5.00)	4.00 (3.00 – 5.00)

REFERENCES

1. Perkmann, M. (2003), “Cross-border regions in Europe. Significance and drivers of regional cross-border co-operation”, *European Urban and Regional Studies*, Vol. 10, No. 2, pp. 153-171.

2. Böhm, H. 2014, A Comparison of Governance Forms for Cross-Border Cooperation Within the EU. The Journal of Cross Border Studies in Ireland. Vol 9, p 36-50

3. Williams, J., Edwards, J., Silenas, R., Kang, J., & Akins, R. Study of disease surveillance policy issues across the international borders of the United States. April 2006

4. Agranoff, B. and McGuire, M. (2001). After the network is formed: Process, power and performance, in M.P. Mandell (Ed) Getting Results through collaboration: Networks and network structures for public policy and management, 11-29.Quorum Books: Westport, CT.

5. Kickert, W. J.M., Klijn, E-H. & & Koppenjan, J. (1997). Managing Complex Networks: Strategies For The Public Sector. Sage Publications: London.

6. United States Mexico Border Health Commission (USMBHC). http://www.borderhealth.org/about_us.php Date accessed, May 28, 2016

7. United States-Mexico Border Health Commission (USMBHC). *Tuberculosis along the United States-Mexico Border.* June 8, 2009.

8. Böhm, H. 2014, A Comparison of Governance Forms for Cross-Border Cooperation Within the EU. The Journal of Cross Border Studies in Ireland. Vol 9, p 36-50
9. Transfrontier Euro-InstituteNetwork (TIEN). http://www.transfrontier.eu/ Date accessed June 2, 2016

10. Euro Institute. http://www.euroinstitut.org/wFranzoesisch/1-Qui-sommes-nous/in-english.php Date accessed June 2, 2016

11. Centre for Cross Border Studies. http://crossborder.ie/ Date accessed June 2, 2016

12. Coker, Richard J., Rifat A. Atun, and Martin McKee. "Health-care system frailties and public health control of communicable disease on the European Union's new eastern border." The Lancet 363.9418 (2004): 1389-1392.

13. De Jesus, Maria, and Chenyang Xiao. "Cross-border health care utilization among the Hispanic population in the United States: implications for closing the health care access gap." Ethnicity & health 18.3 (2013): 297-314.

14. Cohen, Stuart J., and Maia Ingram. "Border health strategic initiative: overview and introduction to a community-based model for diabetes prevention and control." Prev Chronic Dis [serial online] (2005).

15. Koppenjan, J & Klijn, E-H. (2004). Managing Uncertainties in Networks. Routledge: London & New York.

16. Mandell, M. P. (Ed.) (2001). Getting Results Through Collaboration. Quorum Books: Westport, Ct.

17. Huxham, C. and Vangen, S. (2000). Leadership in the Shaping and Implementation of Collaboration Agendas: How Things Happen in a (Not Quite) Joined Up World Academy of Management Journal 43 96): 1159-1175.

18. Leadership: Collaborative Leadership Theory. Accessed June 2, 2016, at http://www.orchestri.com/category/corporate-futuring/medewerkers-human-capital/

19. Miller, W. R., & Miller, J. P. (2006). Leadership styles for success in collaborative work. http://cdn2.hubspot.net/hubfs/316071/Tamarack_New_Website/success_in_collaborative_work.pdf?t=1467765739074

20. Elliott AC, Hynan LS. “A SAS Macro implementation of a Multiple Comparison post hoc test for a Kruskal-Wallis analysis,” *Comp Meth Prog Bio*, 102:75-80, 2011.

21. Denman, C. Working beyond borders: A handbook for transborder projects in health. El Colegio de Sonora, 2004.

22. Matthews CE III, Wooten W, Rangel Gomez MG, Kozo J, Fernandez A and Ojeda VD (2015) The California border health collaborative: a strategy for leading the border to better health. *Front. Public Health* 3:141. doi: 10.3389/fpubh.2015.00141.

23. Thompson, B. (2004). Exploratory and confirmatory factor analysis. Washington, DC: American Psychological Association.

24. Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. Educational and Psychological Measurement, 66, 393-416.

25. Matsunaga, M., (2010). How to Factor-Analyze Your Data Right: Do's, Don'ts, and How-To's. International Journal of Psychological Research, 3 (1), 97-110.

26. Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: LEA

27. Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis*. Hillsdale, NJ: LEA. Do's, Don'ts, and How-To's of Factor Analysis 26.

28. Everitt, B. S. (1975). Multivariate analysis: The need for data and other problems. *British Journal of Psychiatry, 126*,237-240.

29. MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*, 84-99.

30. Park, H. S., Dailey, R., & Lemus, D. (2002). The use of exploratory factor analysis and principal components analysis in communication research. *Human Communication Research, 28*, 562-577.

31. Costello, A.B and Osborne, J.W. (2005) North Carolina State University Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most From Your Analysis. Volume 10 Number 7, July 2005 ISSN 1531-7714

32. Peterson, Robert A. A Meta-Analysis of Cronbach's Coefficient Alpha Journal of Consumer Research, Vol. 21, No. 2 (Sep., 1994), pp. 381-391 Oxford University Press, http://www.jstor.org/stable/2489828 Accessed: 11-04-2016

33. Churchill, Gilbert A., Jr. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs," Journal of Marketing Research, 16 (February), 64-73.

34. Gerbing, David W. and James C. Anderson (1988), "An Up- dated Paradigm for Scale Development Incorporating Unidimensionality and Its Assessment," Journal of Marketing Research, 25 (May), 186-192.

35. Peter, J. Paul. and Gilbert A. Churchill, Jr. (1986), "Relationships among Research Design Choices and Psychometric Properties of Rating Scales: A Meta-analysis

36. Cortina, Jose M. (1993), "What Is Coefficient Alpha? An Ex- amination of Theory and Applications," Journal of Applied Psychology, 78 (February), 98-104.

37. Nunnally, Jum C. (1967), Psychometric Theory, 1st ed., New York: McGraw-Hill. (1978)

38. Tabachnick BG, Fidell LS. Using Multivariate Statistics. 4th ed. Boston, Mass: Allyn & Bacon; 2001: 622. ychometric Theory, 2d ed., New York: McGraw-Hill.

CHAPTER 3: LEADING CROSS-BORDER COLLABORATION ON THE FRONTLINES IN THE US-MEXICO BORDER REGION: WHAT IS IMPORTANT?

ABSTRACT

The United States-Mexico border region exhibits substantial health and economic disparities. In response, there are hundreds of people and organizations working to protect and improve the health of the region. Cross-border collaborations may reduce health disparities in border regions, with leadership being a key to the success of any cross-border collaborative effort. This article describes a quantitative study utilizing a survey instrument developed to explore the leadership approaches/themes deemed important to develop cross-border health collaborative organizations and relationships within the US-Mexico collaborative leadership context. In March, 2016 100 cross-border leaders and actors (33: MX & 67:U.S.) participated in a 40 statement, anonymous, Likert type quantitative survey via Survey Monkey. Participants were instructed to respond as if they were giving "advice" to someone on how important certain leadership approaches or actions are in leading and developing cross-border health collaborative groups or organizations.

As a result of the analysis of the survey responses from both U.S and Mexico (MX), five categorical leadership approaches/themes (Communicate to Engage the Collaborative, Steer the Collaborative, Understand the Members of the Collaborative, Manage the Collaborative and Strategic Relationship Building for the Collaborative) made up of 20 remaining statements were deemed key in leading a border health collaborative. The findings from this study align with re-

cently published cross-border toolkits from Europe and the US-Mexico border region that describe the manner in which cross-border leaders and actors should proceed in managing and developing projects and collaboratives. Lastly, findings in this study can be used to enhance cross-border leadership training activities

INTRODUCTION

A limited body of work identifies and describes effective collaborative leadership in cross-border health settings. However, to our knowledge, a tool to assess leadership attitudes and beliefs among those working in cross-border public health settings is currently unavailable. Thus, based on the existing literature, we created a survey and fielded it with a sample of cross-border leaders in the U.S. and Mexico. This article explores participants' beliefs regarding approaches that are conducive to leading and developing cross-border health collaboratives.

The United States - Mexico (U.S.-MX) border is approximately 3,141 km in length, spanning four U.S. states (48 U.S. counties) and six states (94 Mexican municipalities) in Mexico. This includes 15 pairs of sister cities. As stated in the 1983 La Paz agreement, signed by the U.S. and Mexico Federal governments, the border region is considered 60 miles north and south of the physical border.[1] The border region population is approximately 14.94 million people, with about 7.44 million in the U.S. and 7.50 million in Mexico. The population is expected to increase to about 20 million by 2020. [2]

About 84% of the U.S.–MX border population is urban. Mexico's three largest urban municipalities-Ciudad Juárez in Chihuahua, and Tijuana and Mexi-

cali in Baja California-account for almost half of the total Mexican border population. Over 80% of the U.S. border population is concentrated in six counties: San Diego in California; Pima in Arizona; and Cameron, El Paso, Hidalgo, and Webb in Texas. San Diego alone, represents about 40% of the U.S. border population.[1]

The border regions that are shared among countries are often areas of disparity as it relates to their parent states [3-5]. They can be economically weak, have underdeveloped infrastructure and higher unemployment is often present.[6-8] Although over recent years there has been increased trade and economic development between the U.S. and Mexico, working and living conditions for Mexicans in northern Border States have worsened over the years.[9, 10] In addition, U.S. counties in the border region are among the most impoverished in the country. Four of the seven poorest cities in the U.S. are on the Texas-Mexico border and five of the 14 poorest U.S. counties are in the Texas borderlands.[11,12] The suboptimal conditions of the border region can contribute to serious health problems for their residents [9,11,13]: including a higher prevalence of HIV, Tuberculosis and other communicable diseases, higher rates of chronic disease as well as other public health threats that have no border (water and airborne environmental issues).[14] Additionally, the high mobility and frequent border crossings of people living in the border region adds another challenging health management dimension.[10,14] For example, the San Diego and Tijuana border region is home to the busiest land border crossing in the world, the San Ysidro border crossing. There are six ports of entry on the California–Baja California border with 48.4 million individual northbound border crossings in 2015, with San Ysidro having 32.7 mil-

lion (68%) of these total northbound crossings in 2015.[15] This border region is a fluid, every changing environment.

In order to address the complex needs of the border region, the countries that share a given border must work together to make a difference.[16-18] A major component of any collaboration is the leadership that facilitates, guides and builds an impact effort.[19-21] Leadership in cross-sector and intra-sector collaborations which include border health collaboration, traverse many boundaries and is fundamentally different from position-based leadership authority within organizations.[22-24] Leaders in a cross-border health collaborative may lack formal power or authority and may need to exercise leadership in what is, perhaps, a most difficult context where many parties involved in the collaborative are peers and may not be *required* (e.g., politically, operationally) to participate. In addition, it has been found that leaders of a collaborative effort may need to focus on promoting and safeguarding the collaborative process, keeping stakeholders at the table through periods of frustration and skepticism, acknowledging small successes along the way, helping stakeholders negotiate difficult points, and enforcing group norms and ground rules.[24]

Existing Cross-Border Leadership Expertise

In order to explore those leadership themes/approaches needed to develop cross-border health collaboratives we enlisted the help and expertise of key cross-border health organizations in the U.S-MX border region, the United States/Mexico Border Health Commission (USMBHC), as well as local and state cross-border health departments. The USMBHC was created as a binational

health commission in July 2000 with the signing of an agreement by the Secretary of Health and Human Services of the United States and the Secretary of Health of Mexico.[1] The USBHC is composed of the federal secretaries of health, the chief health officers of the ten (four U.S. & six MX) binational Border States, and prominent community health professionals from both nations. On the U.S. side of the border, much of the front line collaborative border work is performed by local (County) and state jurisdictions as they facilitate and coordinate relationships, communications, and protocols regarding health issues in their respective border regions. In contrast, on the Mexican side of the border the federal Secretary of Health (also the USMBHC representative) leads and coordinates this work on the front line of the border region. The USMBHC, U.S. border counties from California and Arizona, all U.S. state border offices, and, specifically, Mexico's Secretary of Health were part of ongoing discussions related to these research concepts that lead to the development of the survey instrument for this study.

Additionally, researchers were having these same discussions on the Island of Ireland. cross border and cross border health organizations in the border region of the Republic of Ireland and Northern Ireland were engaged (the Centre for Cross-Border Studies & Cooperating and Working Together). The Centre for Cross-Border Studies (CCBS) is a "Think Tank" organization located in Armagh, Northern Ireland whose main goal is to enhance and further develop cross-border networks, relationships and collaboration with key partners at local, regional, national, EU and international levels. Cooperating and Working Together (CAWT) is the cross-border health and social care partnership for the Health

Service Executive in the Republic of Ireland and the Southern and Western Health and Social Care Trusts, the Health and Social Care Board and the Public Health Agency in Northern Ireland. CAWT's mission is to add value to health and social care activity by bringing a cross-border dimension to the on-going collaboration between the health systems in both jurisdictions, and accessing EU funding in support of such activities where appropriate. [25]

Several cross-border collaborative toolkits, resources, and training programs have been developed by CCBS, CAWT, and their many European partners regarding cross-border leadership, project management, evaluation, and border impact assessments, as well as cross-border budget evaluation.[26-28]

The Survey

From the many discussions with the existing cross-border organizations and jurisdictions above, as well as the existing literature we set out to develop a survey tool that would assist in the exploration of current cross-border leaders and actors beliefs regarding approaches that are conducive to leading and developing cross-border health collaboratives. To this end, a 40 statement, Likert type quantitative survey was developed based upon the qualitative research of Miller and Miller.[29] These researchers performed key informant interviews with executive level leaders who developed and coordinated collaborative organizations in various contexts. Their findings identified eight leadership styles/themes needed for collaborative leadership, including authentic self-awareness, passion/personal vision, communication for understanding, facilitator, relationship building, consultative decision-making, forging group vision and managing for ac-

tion. The 5 point Likert scale rated importance of the 40 statements as follows; 5: Very Important, 4: Important, 3: Moderately Important, 2: Of little Importance, 1: Unimportant. Examples of statements from the survey include: "*Have a good understanding of the politics of any issue being considered by the group," "Be direct, open and honest in all communication within the group,"* and "*Ensure that cross-border collaboration meetings are held in a neutral location and or equally held on each side of the border."*

Survey participants were asked to rate these leadership approaches/statements in the context of: "*if you have the chance to give advice to someone who will be leading a cross-border collaborative organization or initiative please rate the importance of…"*

The survey was anonymous and offered in Spanish and English. People who worked as part of a binational cross-border collaborative group and or performing cross-border work in the U.S.-MX border region were invited to participate. Executives at governmental cross-border health organizations at the federal, state and local levels on both side of the border were contacted in order to email the survey link to all respondent candidates utilizing their organizations email listservs. The survey link was emailed to listervs (approx. 430 individuals) beginning on March 1, 2016, and the survey was closed on April 8, 2016.

RESULTS

Participant Demographics

One hundred individuals that work as part of a binational cross-border collaborative group or organization participated in the survey resulting in a response rate of 23% (Table 3.1). Thirty-three respondents were from Mexico and 67 were from the United States. One-half of respondents worked in the government sector (51%) and nearly-two thirds were female (60%). While 64% had more than six years of experience in a cross-border leadership role, 24% of the respondents had sixteen years of cross-border leadership experience. The remaining respondents, with one to five years of leadership experience, presented 28% and eight respondents (8%) had no cross-border leadership experience.

Leadership Themes/Categories Restated

Upon performing an exploratory factor analysis (Note: To obtain the methodology please contact the corresponding author, C. Matthews), results indicated that five of eight leadership themes/categories and twenty of the forty survey statements/approaches had validity and were internally consistent. The resulting statistically-based five leadership themes/categories were renamed as follows: *Communicate to Engage the Collaborative*, *Steer the Collaborative, Understand the Members of the Collaborative, Manage the Collaborative and Strategic Relationship Building for the Collaborative.* The leadership themes/categories and the leadership approaches/statements identified as a result of the analysis can be seen in Table 3.2

The leadership theme/category for both U.S. and MX that had the highest median factor score was *Communicate to Engage (*see Figure 3.1). This indicates that survey respondents on both sides of the border agreed and rated

these leadership statements/approaches and the resulting theme/category the highest of all the leadership themes/categories. More specifically, experienced border leaders and actors in this study shared that the leadership approaches/statements that make up this C*ommunication* theme/category were deemed either *Important* (4.0) and or *Very Important* (5.0) with a median score of 4.6, when given *the chance to give advice to someone who will be starting/leading a cross-border collaborative organization or initiative.* Those leadership approaches/statements that were identified in this theme/category included: **"***Be direct, open and honest in all communication within the group, Show genuine appreciation for the work of others in the group," "Connect people and organizations with the resources they may need to be successful," "Ensure that members of the group that may be negatively affected by a decision are engaged in the decision making process, and Set specific goals, objectives and create targeted outcomes related to the vision of the cross-border collaborative."* (Table 3.3)

The remaining four leadership theme/categories all were rated similarly high via the respondents of the Survey Likert Scale (rated 4.0 or above*, Important* or *Very Important*) by both U.S and MX. No category medians differed more than .3 points. It should be noted that country median scores were equal in 3 out 5 categories (i.e., "*Communicate to Engage the Collaborative*", "*Understand the Members of the Collaborative*" and "Strategic Relationship Building." (Figure 3.1) This indicates that there is considerable agreement on both sides of border (n=100) that the leadership approaches reflected in these 20 statements and five

categories are perceived as vital in leading and building cross-border collaboratives.

DISCUSSION

To our knowledge, this is the first quantitative exploratory study to examine attitudes and perceptions regarding leadership factors that contribute to successful border health collaboratives. The leadership approaches identified by the experienced cross-border health leaders and actors working in the U.S.-MX border can serve as a resource to support the development of cross-border health collaboratives in a border region.

With nearly a quarter of leaders surveyed (n=100, 24%) having over 16 years in a leadership role and 64% with over six years similar experience, there are similar results among more experienced leaders, as well as newer leaders. While this survey produced no apparent differences between countries, all respondents from both countries (n=100; MX=33, U.S. =67) rated the content in the theme “Communicate to Engage” the most important in the survey (U.S. 4.60, MX 4.60). In addition, within the theme “Manage the Collaborative” (U.S. 4.33, MX 4.0) leaders expressed that a governance structure developed through consensus in an atmosphere that fosters inventive solutions to problems are needed. Also, it was deemed important that the members of a border health collaborative need to feel they have a voice in the collaborative in addition to the leadership. The remaining three leadership themes, “Steer the Collaborative”, “Understand the Members,” and “Strategic Relationship Building,” were also deemed as key leadership approaches in the border collaborative setting (all median scores >

4.25). The approaches deemed important by the respondents including the following elements: utilizing a diverse, steering type committee in an open way; understanding motivations of members and their organizations involvement to include political and cultural differences; and building relationships with people "ready" to work together, as well as meeting on neutral territory and or equally on both sides of the border.

Alignment with Existing Cross-Border Toolkits

Our findings align with and support significant reports and or operational toolkits produced in Europe and in the U.S.-MX border region that assist cross-border leaders and actors in developing and performing border collaborative work.[18, 26-28] This can be seen in several shared approaches: communication is expected to be open, transparent and face to face dialog is highly valued[26-28] understanding cultural and political differences is foundational; a collaborative structure built upon a shared vision, consensus and the "right people and right structure" to include holding binational meetings in a neutral location or equally on each side of the border.[18] Additionally, in the PAT-TIEN Toolkit for Inter-Cultural/Cross-Border Project Management the authors not only discuss similar approaches for leading collaborative work, but become efficiently prescriptive in module 6 of their toolkit and lay out the key competencies of a cross-border project manager. This includes competency classifications, such as *Knowledge based competencies, Methodological competencies, Personal and Social skills, and Communication skills.*[26] All of the survey statements in our current study can

be found within and in support of the *Personal/Social* and *Communication skills* sections of this comprehensive toolkit.

Past qualitative work as well as our findings suggest that *trust* is perceived as key to success amongst the border collaborative's members and that a collaborative process and structure is needed to address any number of shared cross-sector issues [30-32]. Extant literature reports that the process variables of trust building, commitment, shared understanding, and face-to-face dialogue are at the core of collaborative leadership.[18, 28-29, 33]

Use for Training Activities

Finally, providing training for present and future border collaborative leaders and actors is key to succession planning and the continuation of impacting the overall health and wellness of any border region.[18, 26-28] Combined with current published cross-border reports and toolkits, the survey instrument from this study could be adapted or used in various ways to support leadership training in a cross-border context. This could include, but is not be limited to the following:

- Having a training cohort of current or aspiring leaders in a classroom context take the survey and then use the individual or aggregate results in the class session as a tool for discussion for the entire group or in smaller groups.
- Trainees could take the survey and utilize it for introspective purposes (What do trainees/leaders feel is most important in developing a cross-border health collaborative and what are their own personal strengths in those identified leadership approaches?).

- Trainees could use the survey in a case study scenario and apply the survey statements to a fictitious or existing border collaborative and informally assess any evolving leadership issues to be addressed.

LIMITATIONS

Some limitations should be considered when evaluating our findings. This study did not capture data on specific roles that participants held and a future survey instrument could capture individual data on participants' positions, responsibilities, and resources available to do their job. Additionally, for a future survey we should include a larger sample size.

CONCLUSION

As discussed throughout this paper and according to previous work by others, collaborative leadership is key in order to impact the health of the border region through border health collaboratives.[18, 25, 29] We found that both U.S. and Mexican cross-border health leaders agree significantly on the collaborative leadership approaches needed to impact the wellness of their border region. The approaches found to be important via our survey instrument fall within the themes of *Communicate to Engage the Collaborative*, *Steer the Collaborative, Understand the Members of the Collaborative, Manage the Collaborative and Strategic Relationship Building for the Collaborative.* These findings significantly support other qualitative work (cross-border reports and toolkits) as it relates to the collaborative leadership approaches identified as needed in this context. In addition, the findings can also be used to enhance cross-border leadership training activities. Future plans for this study will include validating the findings with a

larger sample and including individualized respondent data and participant skills (e.g. bilingualism).

ACKNOWLEDGMENTS

We are grateful to the study participants for their time and contributions as well as the Centre for Cross-Border Studies, Cooperating and Working Together (CAWT), the U.S./Mexico Border Health Commission (to include the Mexico Section-Secretary of Health), County of San Diego Health & Human Services Agency, and the California Office of Binational Border Health, Dr. Victoria Ojeda & Dr. Jose Luis Burgos (University of California, San Diego School of Medicine); without them this research would not have been possible.

Table 3.1 Characteristics of border collaborative leadership survey respondents, U.S. & MX (n = 100)

	United States (n = 67)	Mexico (n = 33)	Total Sample (n = 100)
Characteristic	n (%)	n (%)	n
Survey language			
English	64 (95.5)	3 (9.1)	67
Spanish	3 (4.5)	30 (90.9)	33
Sector			
Government	35 (52.2)	16 (50)	51
Academia	13 (19.4)	9 (28.1)	22
Non-Governmental Organization	13 (19.4)	6 (18.8)	19
Private Organization	5 (7.0)	2 (3.1)	7
Private Citizen	1 (1.5)	0 (0.0)	1
Years in leadership position/role			
0	7 (10.5)	1 (3.0)	8
1-5	17 (25.4)	11 (33.3)	28
6-10	13 (19.4)	10 (30.3)	23
11-15	11 (16.4)	6 (18.2)	17
16+	19 (28.3)	5 (15.1)	24
Gender			
Male	25 (37.9)	14 (42.4)	39
Female	42 (62.1)	19 (57.6)	61

Table 3.2 Median Factor Score by Country, Border Collaboration Survey

Category	**United States** Median (Range)	**Mexico** Median (Range)	**Republic of Ireland** Median (Range)	**Northern Ireland** Median (Range)
☐Communicate to Engage the Collaborative	4.60 (3.40 – 5.00)	4.60 (3.80 – 5.00)	4.40 (3.80 – 5.00)	4.80 (3.40 – 5.00)
☐Steer the Collaborative	4.25 (3.25 – 5.00)	4.50 (3.50 – 5.00)	4.00 (2.50 – 5.00)	4.00 (3.00 – 5.00)
☐Understand the members of the collaborative	4.50 (2.67 – 5.00)	4.50 (3.25 – 5.00)	4.25 (3.25 – 5.00)	4.00 (2.25 – 5.00)
☐Manage the collaborative	4.33 (3.00 – 5.00)	4.00 (2.67 – 5.00)	4.33 (2.67 – 5.00)	4.33 (3.00 – 5.00)
☐Strategic relationship building for the collaborative	4.25 (3.50 – 5.00)	4.25 (3.50 – 5.00)	4.00 (3.00 – 5.00)	4.00 (3.00 – 5.00)

Table 3.3 Border Collaboration Survey Categories and Statements

Category
Communicate to Engage the Collaborative
☐ Be direct, open and honest in all communication within the group
☐ Show genuine appreciation for the work of others in the group
☐ Connect people and organizations with the resources they may need to be successful
☐ Ensure that members of the group that may be negatively affected by a decision are engaged in the decision making process
☐ Set specific goals, objectives and create targeted outcomes related to the vision of the cross-border collaborative
Steer the Collaborative
☐ Utilize a steering committee or some other small group to set the agenda prior to cross-border collaborative meetings

Table 3.3 Border Collaboration Survey Categories and Statements - continued

Category
□ Ensure that the process for joining and participating in the steering committee should be open and transparent
□ Work to diversify the leadership of the steering committee and the cross-border collaborative as a whole (government, academia, non-profits…)
□ Value the dissenting voice in a consensus decision
Understand the members of the collaborative
□ Understand the motives of cross-border collaboration members for being involved in the group
□ Have a good understanding of the politics of any issue being considered by the group
□ Identify and discuss cultural and political differences with the group membership
□ Ensure that the process of group visioning should address the concerns of the organizations involved in the cross-border collaborative
Manage the collaborative
□ Create a governance structure through consensus
□ Challenge assumptions of how things have been done in the past and what new inventive solutions can be created
□ Ensure the cross-border collaborative membership knows that the collaborative belongs to them and not just the leadership
Strategic relationship building for the collaborative
□ Be modest and share work credit with others in the cross-border collaborative group
□ Seek out those people that who are easy to work with and willing to partner as opposed to people that are “non-collaborators”
□ Think creatively about who and how to engage individuals and organizations that do not typically work together
□ Ensure that cross-border collaboration meetings are held in a neutral location and or equally held on each side of the border

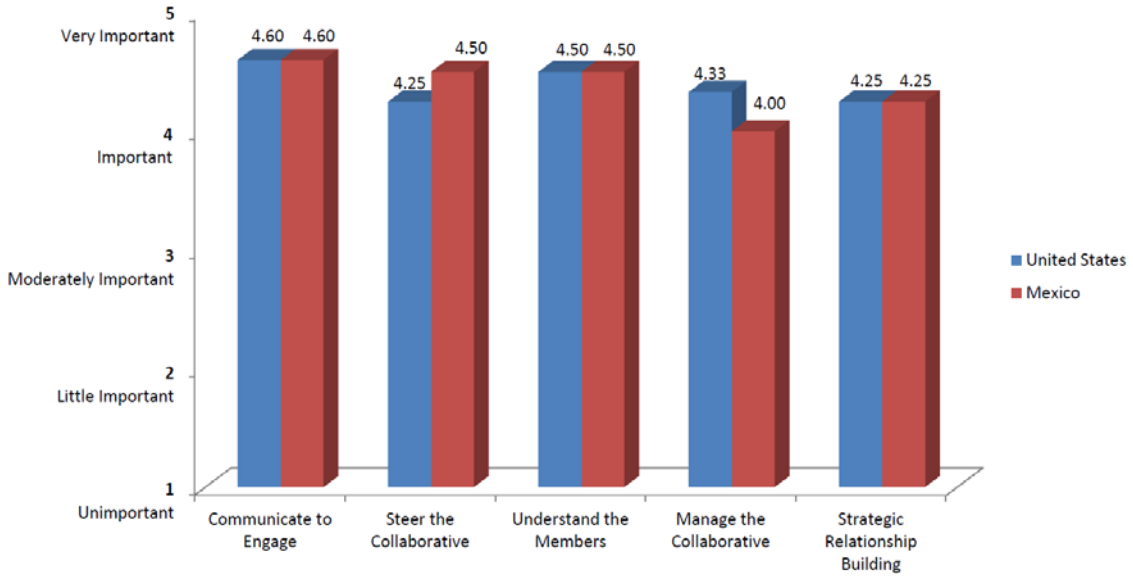

Figure 3.1 Median Factor Score for U.S.-MX Border Collaboration leadership Survey

REFERENCES

1. United States Mexico Border Health Commission (USMBHC). http://www.borderhealth.org/about_us.php. Date accessed, May 28, 2016.

2. Pan American Health Organization, PAHO TB in the U.S Mexico Border Region, http://www.paho.org/hq/index.php?option=com_content&view=article&id=2511:tb-us-mexico-border-region&Itemid=40275&lang=en. Date accessed June 16, 2016.

3. World Bank Health Financing Country Profile-Mexico http://documents.worldbank.org/curated/en/2014/01/19783231/mexico-health-financing-profile Date accessed May 28, 2016.

4. OECD (2013), *Regions and Innovation: Collaborating across borders,* OECD Reviews of Regional Innovation, OECD Publishing. *http://dx.doi.org/10.1787/9789264205307-en.* Date accessed June 18, 2016

5. Association of European Border Regions (AEBR) (2010), *Cross-Border Cooperation in America: Contribution to the Regional Integration Process*, AEBR, Enschede, Netherlands, 2009.CE.16.0.AT.118.

6. CIA World Fact book https://www.cia.gov/library/publications/the-world-factbook/geos/ee.html. Date accessed June 16, 2016.

7. European Commission (2010), *Regional Policy Contributing to Smart Growth in Europe 2020*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2010)553 final, European Union, Brussels.

8. OECD (2012), *Promoting Growth in All Regions*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264174634-en.

9. Warner, D. & Jajnke, L. (2003). U.S./Mexico Border Health Issues: The Texas Rio Grande Valley.

10. Williams, J., Edwards, J., Silenas, R., Kang, J., & Akins, R. Study of disease surveillance policy issues across the international borders of the United States. April 2006.

11. Kiy, R., Frega, M., Garfein, R., et al. Tuberculosis in the San Diego-Tijuana Border Region: *Inspiring philanthropy beyond borders Time for Bi-National Community-Based Solutions 2010.*

12. Lobato, M. & Cegielski, P. CDC MMWR: Preventing and Controlling Tuberculosis Along the U.S.-Mexico Border, January 19, 2001 / 50(RR1); 1-2.

13. Liu, Y., Painter, J., Posey, D., Cain, K. et al. (2012). Estimating the Impact of Newly Arrived Foreign-Born Persons on Tuberculosis in the United States. *Plus One*, *7*(2), e32158. doi:10.1371/journal.pone.0032158.

14. Ten Against TB. TATB, Ten against TB Strategic Plan 2005 to 2010. http://usmex2024.uscmediacurator.com/wp-content/uploads/2013/10/Ten-vs-TB-plan.pdf Date accessed June 1, 2016.

15. San Diego Association of Governments, SANDAG, (2015), San Diego-Baja California Border Crossings and Trade Statistics. File Number 3400200.

16. Agranoff, R. (2006). “Inside Collaborative Networks: Ten Lessons for Public Managers”. *Public Administration Review*, Special Issue, Supplement to Issue: 66(6).

17. Cohen, Stuart J., and Maia Ingram. "Border health strategic initiative: overview and introduction to a community-based model for diabetes prevention and control." *Prev Chronic Dis [serial online]* (2005).

18. Denman, C. Working beyond borders: A handbook for transborder projects in health. El Colegio de Sonora, 2004.

19. Mandell, M. P. (Ed.) (2001). Getting Results Through Collaboration. Quorum Books: Westport, Ct.

20. Huxham, C. and Vangen, S. (2000). Leadership in the Shaping and Implementation of Collaboration Agendas: How Things Happen in a (Not Quite) Joined Up World Academy of Management Journal 43 96): 1159-1175.

21. Leadership: Collaborative Leadership Theory. Accessed at http://www.orchestri.com/category/corporate-futuring/medewerkers-human-capital/ on June 21, 2016

22. Bailey, D. and Koney, K. (1996), “Interorganizational community-based collaboratives: A strategic response to shape the social work agenda,” *Social Work. 41, (6),* 602–612.

23. Chrislip, D. & Larson, C. (1994). Collaborative leadership, San Francisco: Jossey-Bass.

24. Chrislip, D. (2002). The Collaborative leadership field book – A guide for citizens and civic leaders. San Francisco: Jossey-Bass.

25. Cooperation and Working Together for health gain and social wellbeing (CAWT) http://www.cawt.com/default.aspx?CATID=1021 Date accessed July 1, 2016

26. Transfrontier Euro-InstituteNetwork (TIEN). http://www.transfrontier.eu/ Date accessed June 2, 2016.

27. Euro Institute. http://www.euroinstitut.org/wFranzoesisch/1-Qui-sommes-nous/in-english.php Date accessed June 2, 2016.

28. Centre for Cross-border Studies. http://crossborder.ie/ Date accessed June 2, 2016.

29. Miller, W. R., & Miller, J. P. (2012). Leadership styles for success in collaborative work.

30. Matthews CE III, Wooten W, Rangel Gomez MG, Kozo J, Fernandez A and Ojeda VD (2015) The California border health collaborative: a strategy for leading the border to better health. *Front. Public Health* 3:141. doi: 10.3389/fpubh.2015.00141.

31. Agranoff, R. (2003) Leveraging Networks: A Guide for Public Managers Working Across Organizations. IBM Endowment for the Business of Government: Arlington, Va.

32. Agranoff, B. and McGuire, M. (2001). After the network is formed: Process, power and performance, in M.P. Mandell (Ed) Getting Results through collaboration: Networks and network structures for public policy and management, 11-29.Quorum Books: Westport, CT.

33. Himmelman, Arthur T. "On coalitions and the transformation of power relations: Collaborative betterment and collaborative empowerment." *American Journal of Community Psychology* 29.2 (2001): 277-284.

CHAPTER 4: CROSS BORDER HEALTH LEADERSHIP: THE ISLAND OF IRELAND

ABSTRACT

Objective**:** Limited quantitative data exists exploring the leadership approaches needed to develop and lead a cross border health collaborative. The border regions that are shared among countries are often areas of disparity as it relates to their parent states. The sub-optimal conditions of the border region can contribute to serious health problems for their resident's. The best approach to make an impact on the disparities and health in the border region is to approach it collaboratively.

Methods: This article describes an exploratory quantitative study that was adapted from Roger and Jeffery Miller's [20] key informant interview study findings that modeled eight themes/approaches to collaborative leadership in a domestic setting. A forty statement, Likert type quantitative survey was developed with the goal of determining the importance of leadership themes and or actions in developing and coordinating cross border health collaboratives. The cross border setting included the border regions of the Republic of Ireland (IRE), Northern Ireland (NIRE), Mexico (MX) and the United States (U.S.). Analysis for this article is limited to the IRE/NIRE data.

Results: As a result of an exploratory factor analysis, twenty statements across five factors were identified as important to the 59 survey respondents. The five factor leadership themes/approaches that were identified were *Communicate to Engage the Collaborative*, *Steer the Collaborative, Understand the*

Members of the Collaborative, Manage the Collaborative and Strategic Relationship Building for the Collaborative. The respondents from both the Republic of Ireland and Northern Ireland significantly agreed on the most important leadership approaches needed to lead and develop a border health collaborative.

Conclusions: The findings from this study align with recently published cross-border toolkits from Europe and the US-Mexico border region that describe the manner in which cross-border leaders and actors should proceed in managing and developing projects and collaboratives. Lastly, findings in this study can be used to enhance cross-border leadership training activities.

INTRODUCTION

This exploratory, quantitative study seeks to determine the leadership styles/themes deemed most important to develop cross-border health collaborative organizations and relationships within the collaborative leadership context.

The border regions that are shared among countries are often areas of disparity as it relates to their parent states. [1-3] They can be economically weak, have underdeveloped infrastructure and higher unemployment is often present. [4-6] The sub-optimal conditions of the border region can contribute to serious health problems for their resident's. [7, 8] These can include higher incidents of HIV, TB and other communicable diseases, higher rates of chronic disease as well as other public health threats that have no border. [9, 10] Additionally, in addressing the health needs in the border region, the high mobility and frequent border crossings of people living in the border region adds another challenging health management dimension. [8, 11]

It is widely accepted that in order to address those complex needs of the border region, the countries that share that border need to work together to make a difference. [12-14] Leadership in cross-sector and intra-sector collaborations which include border health collaboration, traverse many boundaries and is fundamentally different from position-based leadership authority or tactical-level leadership exercised within organizations.[15-19]

While there is a body of work that identifies and describes effective collaborative leadership in domestic community settings and some in cross border settings, there are limited empirical quantitative studies that identify and or describe the leadership approaches needed for effective cross border health collaborative development.

In order to explore border health collaborative leadership approaches a Likert type survey was developed for this study. The survey was developed based upon the qualitative research of Roger and Jeffery Miller.[20] Their findings identified eight leadership styles/themes needed for collaborative leadership. In their research, they had performed key informant interviews with executive level leaders who develop and coordinate collaborative organizations. From their qualitative research they identified the following leadership styles/themes that are key to leading collaboratives: authentic self-awareness, passion/personal vision, communication for understanding, facilitator, relationship building, consultative decision-making, forging group vision and managing for action.

In order to explore those leadership themes/approaches needed to develop cross-border health collaboratives we enlisted the help and expertise of key

cross-border health organizations in the U.S-MX border region, the United States/Mexico Border Health Commission (USMBHC), as well as local and state cross-border health departments. The USMBHC was created as a binational health commission in July 2000 with the signing of an agreement by the Secretary of Health and Human Services of the United States and the Secretary of Health of Mexico.[21] The USBHC is composed of the federal secretaries of health, the chief health officers of the ten (four U.S. & six MX) binational Border States, and prominent community health professionals from both nations. On the U.S. side of the border, much of the front line collaborative border work is performed by local (County) and state jurisdictions as they facilitate and coordinate relationships, communications, and protocols regarding health issues in their respective border regions. In contrast, on the Mexican side of the border the federal Secretary of Health (also the USMBHC representative) leads and coordinates this work on the front line of the border region. The USMBHC, U.S. border counties from California and Arizona, all U.S. state border offices, and, specifically, Mexico's Secretary of Health were part of ongoing discussions related to these research concepts that lead to the development of the survey instrument for this study.

To bolster our exploration of cross-border collaborative leadership we also looked to the European Union for expertise and vital, cutting edge work being done in the border region of the Republic of Ireland and Northern Ireland. Several cross-border collaborative toolkits, resources, and training programs have been developed by the Center for Cross Border Studies (CCBS), Cooperating

and Working Together (CAWT), and their many European partners regarding cross-border leadership, project management and evaluation, border impact assessments, as well as cross-border budget evaluation.[22-24] The Centre for Cross-Border Studies (CCBS) is a “Think Tank” organization located in Armagh, Northern Ireland whose main goal is to enhance and further develop cross-border networks, relationships and collaboration with key partners at local, regional, national, EU and international levels. Cooperating and Working Together (CAWT) is the cross-border health and social care partnership for the Health Service Executive in the Republic of Ireland and the Southern and Western Health and Social Care Trusts, the Health and Social Care Board and the Public Health Agency in Northern Ireland. CAWT’s mission is to add value to health and social care activity by bringing a cross-border dimension to the on-going collaboration between the health systems in both jurisdictions, and accessing EU funding in support of such activities where appropriate.[25]

In addition to reviewing the robust best practice and guidance documentation, researchers had the opportunity to sit down and discuss many of the key cross-border leadership approaches that have been successful on the Island of Ireland. This readied the team to develop the survey.

METHODS

This exploratory quantitative study utilized a Likert type survey to determine the leadership styles/themes deemed most important to develop cross-border health collaborative organizations and relationships within the collaborative leadership context. The cross border setting included the border regions of

the Republic of Ireland (IRE), Northern Ireland (NIRE), Mexico (MX) and the United States (U.S.). Analysis for this article is limited to the IRE/NIRE data.

Study Population

People who worked as part of a binational cross border collaborative group were invited to participate in the survey. Executives at cross border health collaboratives CAWT and CCBS working in the IRE/NIRE border regions were contacted in order to email the survey link to respondent candidates. Face to face, phone and email communication took place between the PI and these executives over a previous two year period exploring these research concepts in general and they agreed to send the survey to their members. The survey link was emailed to the 300 members of the CAWT listerv beginning on March 1, 2016 and the survey was closed on April 8, 2016 with 59 people responding (20% response rate). In between the beginning and closing period of the survey, two reminder to participate emails had been sent to the listserv. The survey was anonymous, the respondents email address and IP address was not gathered during the survey collection process.

The survey was administered via Survey Monkey Inc. Survey Monkey is an online survey development cloud-based software system that serves as a tool to develop surveys as well as providing basic data analysis in a multitude of languages. An Introductory invitation precluded the survey link in an email sent out to potential survey respondents by CAWT and in the monthly publication, Borderzine by CCBS. The URL link of the survey was sent over a secure, SSL encrypted connection. Once all the survey responses had been collected in Sur-

vey Monkey they were downloaded into an Excel spreadsheet. Each set of answers from each respondent was given an ordinal number identifier (respondent 1, respondent 2..., 3…).

The study protocol was reviewed and approved as *Exempt* from IRB by the University of California San Diego Human Research Protection Program. Informed consent was obtained from all participants.

Measures

Adapted from Roger and Jeffery Miller's [20] key informant interview study findings, a 40 statement, Likert type quantitative survey was developed with the goal of determining the importance of certain leadership themes and or actions in developing and coordinating cross border health collaboratives. We developed five statements from each of Miller's 8 leadership themes that included Authentic Self-Awareness, Passion, Charisma and Personal Vision, Communication for Understanding, Facilitate the Process, Relationship Building, Consultative Decision Making, Forging Group Vision and Management for Action. The 5 point Likert scale rated importance of the 40 statements as follows; 5: Very Important, 4: Important, 3: Moderately Important, 2: Of little Importance, 1: Unimportant

Participants also respond to background demographic questions that included, Country of work origin (what country do they represent when doing cross border work), Sector of employment (do they work in a government, academic, non-profit, for profit or private citizen setting), Years in a leadership position (how many years have they been in a leadership position; 0, 1-5, 6-10, 11-16 or 16+) and their Gender.

Statistical Analyses

Survey Data and Quantitative Analyses

All quantitative analyses were completed in SAS Studio 3.4 Enterprise Edition (SAS Institute Inc., Cary, NC). Descriptive statistics of survey respondents' characteristics were calculated.

Construct validity of survey themes were tested using an exploratory factor analysis (EFA) as this was a newly developed quantitative survey instrument. Factors were rotated using varimax methods to preserve orthogonality. Factor loadings were investigated; statements which cross-loaded at 0.4 or above were dropped and the EFA repeated until all remaining statements loaded cleanly (>0.4). Internal reliability analyses of the final factors were conducted using the Cronbach Coefficient Alpha statistic. For the purposes of this study, a raw Cronbach Alpha of 0.6 or above per factor was considered satisfactory.

Factor scores were calculated for each survey respondent by taking the mean of all statements contained within each factor. Factor score distributions were examined and determined to be non-normal; the median and range of scores are reported for final factors and stratified by country. Overall differences in median factor scores between countries were analyzed using the Kruskal-Wallis omnibus test with a significance level of 0.05. Multiple comparison post hoc tests, using methodology described by Elliott and Hynan,[26]were completed to ascertain where significant group differences were found.

RESULTS

Study Population

Fifty-nine individuals that work as part of a binational cross border collaborative group participated in the survey resulting in a response rate of 20%. Thirty-six respondents were from Northern Ireland and twenty-three were from the Republic of Ireland. Most respondents worked in the government sector (86%) and were female (73%). While 39% of the respondents had sixteen years of leadership experience and 76% had more than six years of experience in a leadership role, the remaining respondents were more closely distributed in regards to number of years in a leadership role, 1-5 years 17%, 6-10 years 22% and 11-15 years 15%. (Table 4.1)

Leadership Themes/Categories

During the exploratory factor analysis process, Factors 5, 7 and 8 were dropped from further analysis as each had fewer than three statements load in above 0.4. Factors 1, 2, 3, 4, and 6 were retained. Results indicate that five themes/categories and twenty survey statements had construct validity and were internally consistent. The five leadership themes/categories were renamed *Communicate to Engage the Collaborative*, *Steer the Collaborative, Understand the Members of the Collaborative, Manage the Collaborative and Strategic Relationship Building for the Collaborative.* The overall Cronbach alpha values for the five categories were .77, .74, .69, .71, and .59 respectively (Table 4.2)

The leadership theme/category for both IRE and NIRE that had the highest median factor score was *Communicate to Engage (* Figure 4.3). Interventions or approaches that were rated most important in this category included: *Be*

direct, open and honest in all communication within the group, Show genuine appreciation for the work of others in the group, Connect people and organizations with the resources they may need to be successful, Ensure that members of the group that may be negatively affected by a decision are engaged in the decision making process and Set specific goals, objectives and create targeted outcomes related to the vision of the cross border collaborative.

The remaining four leadership theme/categories all were rated similarly high via the respondents of the Survey Likert Scale (4 or above) by both NIRE and IRE. No category medians differed more than .4. It should be noted that country medians were equal in 3 out 5 categories (i.e., "Steer the Collaborative", "Manage the Collaborative" and "Strategic Relationship Building").

Utilizing the Kruskal-Wallis omnibus test and comparison post hoc tests as indicated, no significant group (country) differences were found.[26]

DISCUSSION

To our knowledge, this is the first quantitative study to explore the leadership approaches recommended to develop a cross border health collaborative in a border region. We found that there was significant agreement in the border region of Ireland and Northern Ireland that the 5 categories and 20 statements reflected in the results of this study (table 2.) were found to be key to building a cross border health collaborative.

With just under half of leaders surveyed (n=59, 40%) having over 16 years in a leadership role and 79% with over 6 years similar experience, there is consistency in the results among more experienced leaders as well as newer lead-

ers. While this survey produced no apparent differences between countries which is outright significant, all respondents from both countries (n=59) rated the content in the theme “Communicate to Engage” the most important in the survey (median scores between 1-5, N. Ireland 4.8 & Ireland 4.4). These findings reflect that cross border leaders shared that being; direct, open and honest in all communication, showing appreciation, connecting people and organizations with resources, being inclusive and setting specific goals and objectives are key to successful border health collaborative leadership. In addition, within the theme “Manage the Collaborative” (median scores between1-5, N. Ireland 4.3 & Ireland 4.3) leaders expressed that a governance structure developed through consensus in an atmosphere that fosters inventive solutions to problems are needed. Also, it was deemed important that the members of a border health collaborative need to feel they have a voice in the collaborative in addition to the leadership. The remaining three leadership themes, “Steer the Collaborative,” “Understand the Members,” and “Strategic Relationship Building” were also deemed as key leadership approaches in the border collaborative setting (all median scores > 4.0). The approaches deemed important by the respondents included utilizing a diverse, steering type committee in an open way; understanding motivations of members and their organizations involvement, to include political and cultural differences; and building relationships with people “ready” to work together, as well as by meeting on neutral territory and or equally on both sides of the border.

Our findings align with and support significant reports and or operational toolkits produced in Europe and in the U.S.-MX border region that assist cross-

border leaders and actors in developing and performing border collaborative work.[14, 22-24] This can be seen in several shared approaches: communication is expected to be open, transparent and face to face dialog is highly valued understanding cultural and political differences is foundational; a collaborative structure built upon a shared vision, consensus and *the right people and right structure* to include holding binational meetings in a neutral location or equally on each side of the border.[14] Additionally, in the PAT-TIEN Toolkit for Inter-Cultural/Cross-Border Project Management the authors not only discuss similar approaches for leading collaborative work, but become efficiently prescriptive in module 6 of their toolkit and lay out the key competencies of a cross-border project manager. This includes competency classifications, such as *Knowledge based competencies, Methodological competencies, Personal and Social skills, and Communication skills.*[24] All of the survey statements in our current study can be found within and in support of the *Personal/Social* and *Communication skills* sections of this comprehensive toolkit.

Past qualitative work as well as our findings suggest that *trust* is perceived as key to success amongst the border collaborative's members and that a collaborative process and structure is needed to address any number of shared cross-sector issues.[27, 28] Extant literature reports that the process variables of trust building, commitment, shared understanding, and face-to-face dialogue are at the core of collaborative leadership.[20, 24]

Use for Training Activities

Finally, providing training for present and future border collaborative leaders and actors is key to succession planning and the continuation of impacting the overall health and wellness of any border region [14, 24]. Combined with current published cross-border reports and toolkits, the survey instrument from this study could be adapted or used in various ways to support leadership training in a cross-border context. This could include, but is not be limited to the following: Having a training cohort of current or aspiring leaders in a classroom context take the survey and then use the individual or aggregate results in the class session as a tool for discussion for the entire group or in smaller groups; trainees could take the survey and utilize it for introspective purposes (What do trainees/leaders feel is most important in developing a cross-border health collaborative and what are their own personal strengths in those identified leadership approaches?); trainees could use the survey in a case study scenario and apply the survey statements to a fictitious or existing border collaborative and informally assess any evolving leadership issues to be addressed.

LIMITATIONS

Some limitations should be considered when evaluating our findings. This study did not capture data on specific roles that participants held and a future survey instrument could capture individual data on participants' positions, responsibilities, and resources available to do their job. Additionally, for a future survey we should include a larger sample size.

CONCLUSION

As discussed throughout this paper and according to previous work by others, collaborative leadership is key in order to impact the health of the border region through border health collaboratives. We found that both Northern Irish and Irish cross-border health leaders agree significantly on the collaborative leadership approaches needed to impact the wellness of their border region. The approaches found to be important via our survey instrument fall within the themes of *Communicate to Engage the Collaborative*, *Steer the Collaborative, Understand the Members of the Collaborative, Manage the Collaborative, and Strategic Relationship Building for the Collaborative.* These findings significantly support other qualitative work (European cross-border reports and toolkits) as it relates to the collaborative leadership approaches identified as needed in this context. In addition, the findings can also be used to enhance cross-border leadership training activities. Future plans for this study will include validating the findings with a larger sample and including individualized respondent data and participant skills (e.g., bilingualism/Gaelic).

ACKNOWLEDGEMENTS

We are grateful to the study participants for their time and contributions as well as the Centre for Cross-Border Studies, Cooperating and Working Together (CAWT), the U.S./Mexico Border Health Commission (to include the Mexico Section-Secretary of Health), County of San Diego Health & Human Services Agency, and the California Office of Binational Border Health; without them this research would not have been possible.

Table 4.1 Characteristics of border collaboration survey respondents, by country (n = 59) 2016

	Republic of Ireland (n = 23)	Northern Ireland (n = 36)
Characteristic	n (%)	n (%)
Sector		
Government	19 (82.6)	32 (88.9)
Academia	1 (4.4)	1 (2.8)
Non-Governmental Organization	2 (8.7)	2 (5.6)
Private Organization	0 (0.0)	1 (2.8)
Private Citizen	1 (4.4)	0 (0.0)
Years in leadership position/role		
0	2 (8.7)	2 (5.6)
1-5	5 (21.7)	5 (13.9)
6-10	6 (26.2)	7 (19.4)
11-15	5 (21.7)	4 (11.1)
16+	5 (21.7)	18 (50.0)
Gender		
Male	7 (30.4)	9 (25.00)
Female	16 (69.6)	27 (75.0)

Table 4.2 Internal consistency of border collaboration survey categories (raw Cronbach alpha)

Category	Overall Cronbach Alpha
Communicate to Engage the Collaborative	0.77
Be direct, open and honest in all communication within the group	
Show genuine appreciation for the work of others in the group	
Connect people and organizations with the resources they may need to be successful	
Ensure that members of the group that may be negatively affected by a decision are engaged in the decision making process	
Set specific goals, objectives and create targeted outcomes related to the vision of the cross border collaborative	
Steer the Collaborative	0.74
Utilize a steering committee or some other small group to set the agenda prior to cross border collaborative meetings	
The process for joining and participating in the steering committee should be open and transparent	
Work to diversify the leadership of the steering committee and the cross border collaborative as a whole (government, academia, non-profits…)	
Value the dissenting voice in a consensus decision	
Understand the members of the collaborative	0.69
Understand the motives of cross border collaboration members for being involved in the group	
Have a good understanding of the politics of any issue being considered by the group	
Identify and discuss cultural and political differences with the group membership	
The process of group visioning should address the concerns of the organizations involved in the cross border collaborative	
Manage the collaborative	0.71
Create a governance structure through consensus	
Challenge assumptions of how things have been done in the past and what new inventive solutions can be created	

Table 4.2 Internal consistency of border collaboration survey categories (raw Cronbach alpha) - continued

Category	Overall Cronbach Alpha
▯ Ensure the cross border collaborative membership knows that the collaborative belongs to them and not just the leadership	
Strategic relationship building for the collaborative	0.59
▯ Be modest and share work credit with others in the cross border collaborative group	
▯ Seek out those people that who are easy to work with and willing to partner as opposed to people that are “non-collaborators”	
▯ Think creatively about who and how to engage individuals and organizations that do not typically work together	
▯ Ensure that cross border collaboration meetings are held in a neutral location and or equally held on each side of the border	

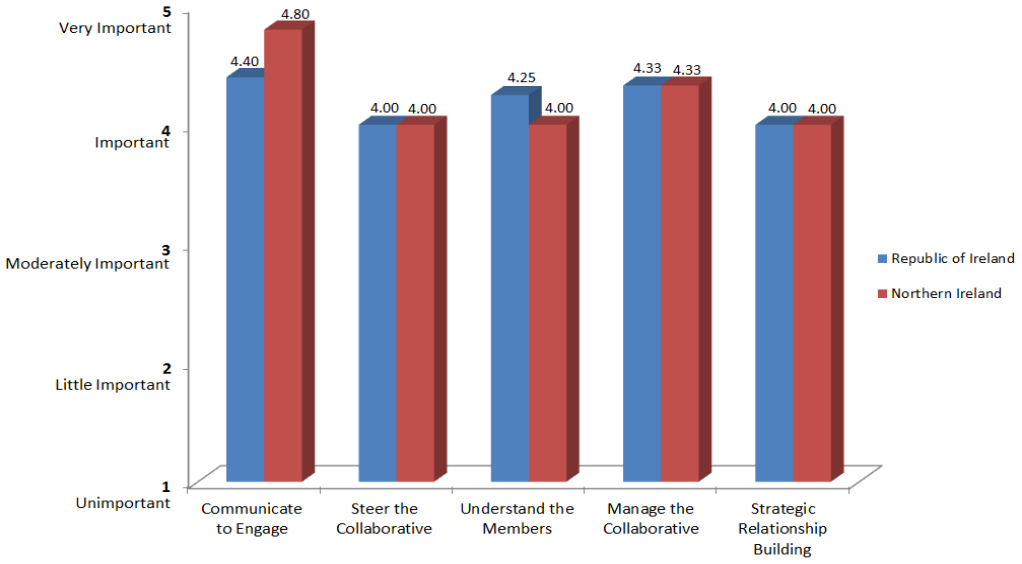

Figure 4.3 Median Factor Score for Ireland & Northern Ireland Border Collaboration Leadership Survey.

REFERENCES

1. World Bank Health Financing Country Profile-Mexico

2. http://documents.worldbank.org/curated/en/2014/01/19783231/mexico-health-financing-profile Date accessed May 28, 2016.

3. OECD (2013), *Regions and Innovation: Collaborating across borders,* OECD Reviews of Regional Innovation, OECD Publishing. *http://dx.doi.org/10.1787/9789264205307-en.* Date accessed June 18, 2016

4. Association of European Border Regions (AEBR) (2010), *Cross-Border Cooperation in America: Contribution to the Regional Integration Process*, AEBR, Enschede, Netherlands, 2009.CE.16.0.AT.118

5. European Commission (2010), *Regional Policy Contributing to Smart Growth in Europe 2020*, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2010)553 final, European Union, Brussels.

6. OECD (2012), *Promoting Growth in All Regions*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264174634-en.

7. Warner, D. & Jajnke, L. (2003). U.S./Mexico Border Health Issues: The Texas Rio Grande Valley.

8. Williams, J., Edwards, J., Silenas, R., Kang, J., & Akins, R. Study of disease surveillance policy issues across the international borders of the United States. April 2006.

9. Kiy, R., Frega, M., Garfein, R., et al. Tuberculosis in the San Diego-Tijuana Border Region: *Inspiring philanthropy beyond borders Time for Bi-National Community-Based Solutions 2010.*

10. Lobato, M. & Cegielski, P. CDC MMWR: Preventing and Controlling Tuberculosis Along the U.S.-Mexico Border, January 19, 2001 / 50(RR1); 1-2.

11. Ten Against TB. TATB, Ten against TB Strategic Plan 2005 to 2010. http://usmex2024.uscmediacurator.com/wp-content/uploads/2013/10/Ten-vs-TB-plan.pdf Date accessed June 1, 2016.

12. Agranoff, R. (2006). “Inside Collaborative Networks: Ten Lessons for Public Managers”. *Public Administration Review*, Special Issue, Supplement to Issue: 66(6).

13. Cohen, Stuart J., and Maia Ingram. "Border health strategic initiative: overview and introduction to a community-based model for diabetes prevention and control." *Prev Chronic Dis [serial online]* (2005).

14. Denman, C. Working beyond borders: A handbook for transborder projects in health. El Colegio de Sonora, 2004.

15. Mandell, M. P. (Ed.) (2001). Getting Results Through Collaboration. Quorum Books: Westport, Ct.

16. Huxham, C. and Vangen, S. (2000). Leadership in the Shaping and Implementation of Collaboration Agendas: How Things Happen in a (Not Quite) Joined Up World Academy of Management Journal 43 96): 1159-1175.

17. Leadership: Collaborative Leadership Theory. Accessed at http://www.orchestri.com/category/corporate-futuring/medewerkers-human-capital/ on June 21, 2016

18. Bailey, D. and Koney, K. (1996), “Interorganizational community-based collaboratives: A strategic response to shape the social work agenda,” *Social Work. 41, (6),* 602–612.

19. Chrislip, D. (2002). The Collaborative leadership field book – A guide for citizens and civic leaders. San Francisco: Jossey-Bass.

20. Miller, W. R., & Miller, J. P. (2012). Leadership styles for success in collaborative work.

21. United States Mexico Border Health Commission (USMBHC). http://www.borderhealth.org/about_us.php. Date accessed, May 28, 2016.

22. Transfrontier Euro-InstituteNetwork (TIEN). http://www.transfrontier.eu/ Date accessed June 2, 2016

23. Euro Institute. http://www.euroinstitut.org/wFranzoesisch/1-Qui-sommes-nous/in-english.php Date accessed June 2, 2016.

24. Centre for Cross-border Studies. http://crossborder.ie/ Date accessed June 2, 2016.

25. Cooperation and Working Together for health gain and social wellbeing (CAWT) http://www.cawt.com/default.aspx?CATID=1021 Date accessed July 1, 2016

26. Elliott AC, Hynan LS. “A SAS Macro implementation of a Multiple Comparison post hoc test for a Kruskal-Wallis analysis,” *Comp Meth Prog Bio*, 102:75-80, 2011.

27. Matthews CE III, Wooten W, Rangel Gomez MG, Kozo J, Fernandez A and Ojeda VD (2015) The California border health collaborative: a strategy for leading the border to better health. *Front. Public Health* 3:141. doi: 10.3389/fpubh.2015.00141.

28. Agranoff, R. (2003) Leveraging Networks: A Guide for Public Managers Working Across Organizations. IBM Endowment for the Business of Government: Arlington, Va.

29. CIA World Fact book https://www.cia.gov/library/publications/the-world-factbook/geos/print/country/countrypdf_mx.pdf Date accessed June 16, 2016.

30. Pan American Health Organization, PAHO TB in the U.S Mexico Border Region, http://www.paho.org/hq/index.php?option=com_content&view=article&id=2511:tb-us-mexico-border-region&Itemid=40275&lang=en. Date accessed June 16, 2016.

31. San Diego Association of Governments, SANDAG, (2015), San Diego-Baja California Border Crossings and Trade Statistics. File Number 3400200.

CHAPTER 5: DISCUSSION

Leadership within the context of cross border health collaboration has not yet been extensively studied and there has been almost no research focused on this area. Two general areas of leadership theory and research apply to this setting that include collaborative leadership as well as cross-sector collaborative leadership. In these collaborative leadership theories, trust, a shared vision, respect, open & transparent communication, commitment and facilitating the process are all found to be key themes in leading collaborative groups.[1-5] In addition to the leadership theory, operational handbooks have been developed for leading cross-border health groups and projects.[6-9] These handbooks describe not only the leadership themes found in the leadership theory and research but also expand the work. The handbooks identified the importance of cultural understanding, shared power & resources, face to face dialog and fair & equal participation.

The findings from this dissertation research contributes to the initial work being done in this area. This is the first quantitative exploratory study to examine attitudes and perceptions regarding leadership factors that contribute to successful border health collaboratives. The leadership approaches identified by the experienced cross-border health leaders and actors working in the U.S.-MX and Ireland-Northern Ireland border regions can serve as a resource to support the development of cross-border health collaborative groups in a border region.

With nearly a third of leaders surveyed (n=159, 30%) having over 16 years in a leadership role and 69% with over six years similar experience, there are

similar results among more experienced leaders, as well as newer leaders. While this survey produced no apparent differences between countries, all respondents from both border regions (n=159; MX=33, U.S. =67, Ire=23 & N. Ire=36) rated the content in the theme “Communicate to Engage” the most important in the survey (U.S. 4.60, MX 4.60, Ire 4.40 & N. Ire 4.80). In addition, within the theme “Manage the Collaborative” (U.S. 4.33, MX 4.0, Ire 4.33 & N. Ire 4.33) leaders expressed that a governance structure developed through consensus in an atmosphere that fosters inventive solutions to problems are needed. Also, it was deemed important that the members of a border health collaborative need to feel they have a voice in the collaborative in addition to the leadership. The remaining three leadership themes, “Steer the Collaborative”, “Understand the Members,” and “Strategic Relationship Building,” were also deemed as key leadership approaches in the border collaborative setting (all median scores > 4.00). The approaches deemed important by the respondents including the following elements: utilizing a diverse, steering type committee in an open way; understanding motivations of members and their organizations involvement to include political and cultural differences; and building relationships with people “ready” to work together, as well as meeting on neutral territory and or equally on both sides of the border.

Alignment with Existing Cross-Border Handbooks

The findings align with and support significant reports and or operational toolkits produced in Europe and in the U.S.-MX border region that assist cross-border leaders and actors in developing and performing border collaborative

work [6, 8, 10] This can be seen in several shared approaches: communication is expected to be open, transparent and face to face dialog is highly valued, understanding cultural and political differences is foundational; a collaborative structure built upon a shared vision, consensus and the "right people and right structure" to include holding binational meetings in a neutral location or equally on each side of the border.[6] Additionally, in the PAT-TIEN Toolkit for Inter-Cultural/Cross-Border Project Management the authors not only discuss similar approaches for leading collaborative work, but become efficiently prescriptive in module 6 of their toolkit and lay out the key competencies of a cross-border project manager. This includes competency classifications, such as *Knowledge based competencies, Methodological competencies, Personal and Social skills, and Communication skills.*[10] All of the survey statements in our current study can be found within and in support of the *Personal/Social* and *Communication skills* sections of this comprehensive toolkit.

Past qualitative work as well as our findings suggest that *trust* is perceived as key to success amongst the border collaborative's members and that a collaborative process and structure is needed to address any number of shared cross-sector issues.[11-14] Extant literature reports that the process variables of trust building, commitment, shared understanding, and face-to-face dialogue are at the core of collaborative leadership.[3, 6, 8, 14-15]

Use for Training Activities

Providing training for present and future border collaborative leaders and actors is key to succession planning and the continuation of impacting the overall health and wellness of any border region.[6-8, 10] Combined with current published cross-border reports and toolkits, the survey instrument from this study could be adapted or used in various ways to support leadership training in a cross-border context. This could include, but is not be limited to the following: Having a training cohort of current or aspiring leaders in a classroom context take the survey and then use the individual or aggregate results in the class session as a tool for discussion for the entire group or in smaller groups; trainees could take the survey and utilize it for introspective purposes (What do trainees/leaders feel is most important in developing a cross-border health collaborative and what are their own personal strengths in those identified leadership approaches?); and trainees could use the survey in a case study scenario and apply the survey statements to a fictitious or existing border collaborative and informally assess any evolving leadership issues to be addressed.

LIMITATIONS

Limitations exist with this study, and future work should focus on addressing sampling, response rate and internal reliability.

Sampling

While the sample size for this initial survey is adequate for this step in the process, for the next iteration of this survey instrument we want to increase the

sample size of the respondents to approximately 300 to 500 as this would satisfy literature recommendations for a more developed research tool.

Response Rate

With an overall response rate of 23%, this will not be adequate for future survey instrument utilization. With this low response rate future implications on the quality of the data received an biases may be present. Additionally, a short data collection period may have had an impact on this survey iteration and a future one will include a longer period of collection.

Internal Reliability

One of the concerns is that 2 of 5 factors (factors 3 and 5) have a reliability coefficient (Cronbach's alpha) scores <.70 (.69 and .59 respectively). As this is a first step in honing this survey, future instrument development should focus on rewording statements and or developing alternative statements getting at the same theme. Additionally, interpretation of factors defined by only 3 items is sufficient for this survey presently (with a reliability coefficient >.7); [16] but going forward we would look to add to the number of items in factor 4.

RECOMMENDATIONS and FUTURE RESEARCH

More research is needed to be done to identify and confirm the leadership approaches needed to lead and perform cross border health collaborative work in border regions. This current survey instrument should be developed further to enhance construct and internal reliability and also be able to generalize to other border regions around the world as indicated in the limitations section of this dissertation.

Additionally, future plans for this research could include validating the findings with a larger sample and including individualized respondent data and participant skills as well as developing a collaborative leadership assessment tool.

While this research has supported collaborative leadership theory and operational handbooks that guides this cross border work, future research should include validating the operational handbooks through evaluation and other means.

CONCLUSION

An initial/preliminary 20 statement survey instrument was developed with adequate construct validity as well as internal reliability to assist in the exploration of what leadership approaches are important in developing cross border health collaboratives. The findings from this study align with recently published cross-border toolkits from Europe and the US-Mexico border region that describe the manner in which leaders and actors should proceed in managing and developing projects and leading cross border collaboratives. Lastly, this study represents the first step in identifying those important leadership approaches and further development of this survey instrument is needed which will enhance construct and internal reliability.

REFERENCES

1. Chrislip, D. & Larson, C. (1994). Collaborative leadership, San Francisco: Jossey-Bass.

2. Chrislip, D. (2002). The Collaborative leadership field book – A guide for citizens and civic leaders. San Francisco: Jossey-Bass.

3. Miller, W. R., & Miller, J. P. (2012). Leadership styles for success in collaborative work.

4. Bailey, D. and Koney, K. (1996), "Interorganizational community-based collaboratives: A strategic response to shape the social work agenda," *Social Work. 41, (6),* 602–612

5. Agranoff, B. and McGuire, M. (2001). After the network is formed: Process, power and performance, in M.P. Mandell (Ed) Getting Results through collaboration: Networks and network structures for public policy and management, 11-29.Quorum Books: Westport, CT.

6. Denman, C. Working beyond borders: A handbook for transborder projects in health. El Colegio de Sonora, 2004.

7. Euro Institute. http://www.euroinstitut.org/wFranzoesisch/1-Qui-sommes-nous/in-english.php Date accessed June 2, 2016.

8. Centre for Cross-border Studies. http://crossborder.ie/ Date accessed June 2, 2016

9. Cooperation and Working Together for health gain and social wellbeing (CAWT)
   http://www.cawt.com/default.aspx?CATID=1021 Date accessed July 1, 2016

10. Transfrontier Euro-InstituteNetwork (TIEN). http://www.transfrontier.eu/
    Date accessed June 2, 2016.

11. Matthews CE III, Wooten W, Rangel Gomez MG, Kozo J, Fernandez A and Ojeda VD (2015) The California border health collaborative: a strategy for leading the border to better health. *Front. Public Health* 3:141. doi: 10.3389/fpubh.2015.00141.

12. Mattessich, P., Murray-Close, M. & Monsey, B. R. (2001). Collaboration: What makes it work? Saint Paul, MN: Amherst H. Wilder Foundation

13. Ansell, C & Gash, A., *Collaborative Governance in Theory and Practice*. doi:10.1093/jopart/mum032 Advance Access publication on November 13, 2007

14. Himmelman, Arthur T. "On coalitions and the transformation of power relations: Collaborative betterment and collaborative empowerment." *American journal of community psychology* 29.2 (2001): 277-284.

15. Bailey, D. and Koney, K. (1996), “Interorganizational community-based collaboratives: A strategic response to shape the social work agenda,” *Social Work. 41, (6),* 602–612

16. Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. Educational and Psychological Measurement, 66, 393-416.