

ABSTRACT

Title of Dissertation: EXPANDING HEALTH SERVICE DELIVERY IN ST.
MARC, HAITI: A CASE STUDY IN CAPACITY
BUILDING AND INFRASTRUCTURE DEVELOPMENT
WITHIN AN EMERGING COALITION
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The purpose of this study was to examine the perceptions and actions of a cross-sector, transdisciplinary group of collaborators as they worked to enhance health delivery services in the region of St. Marc, Haiti. Areas needing improvements in health service delivery include access, health administration, and sustainability. Using a systems thinking approach, the group addressed these areas of improvement with increased capacity building and infrastructure development. Members of the group of collaborators included various members of the St. Marc community who were previously conducting public health work individually, as well as members of the educational community and local government. The research design is a single, embedded, case study. Results indicate that stakeholders in the collaboration relied heavily on the establishment of strategic partnerships to reach the group's end goal. These strategic partnerships were formed based on interpersonal relationships and a collaborative willingness to serve the

community. Because of the formation of the collaboration, doors were opened for future partnerships, thus, transforming the coalition into an emerging system of collaborations and relationships focused on continued capacity building and infrastructure development. One immediate outcome of the study was the establishment of an educational program for para-professionals which includes a curriculum for administrative services. Implications of the study support the effectiveness of a systems thinking approach when expanding health service delivery in an area with weak infrastructure.

EXPANDING HEALTH SERVICE DELIVERY IN ST. MARC, HAITI: A CASE
STUDY IN CAPACITY BUILDING AND INFRASTRUCTURE DEVELOPMENT
WITHIN AN EMERGING COALITION

by

Shenell L. Tolson

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Dedication

“It’s been a long day without you my friend, but I’ll tell you all about it when I see you again.” – Andrew Cedar, Justin Franks, Charlie Puth, and Cameron Thomaz.

“Wish you were here.” – Me.

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Thank you to Marvin Saintpreux for your assistance in-country with Haitian Kreyol translation. Thank you to my dissertation committee: It is my sincere hope that one day, I too will be viewed in such high regard as I view each of you. Dr. Raymond Terry, thank you for your global expertise, the ability to navigate any part of the world through a Public Health lens, and being purposeful in exposing students to the global health arena through real-world experience and application; Dr. Lawrence Brown, for your unwavering dedication and commitment to the empowerment of Africans in the diaspora and the influence this has on me as a scholar and a human; and Dr. Dhierry Pierre-Louis, “*pou èd ou e kounye a, amitye ou, mwen rekonesan.*”

To my Chair, Dr. Sharon E. Barrett, when choosing a chairperson for a committee one is supposed to consider expertise and qualifications, accessibility, analysis styles and all the technical terms encompassed within a dissertation. This incredibly important choice can make or break this body of work. Thank you for being more than the technical portion of your role. When choosing a chair, I have chosen wisely. Thank you.

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Chapter 1: Introduction

Background

Haiti is situated in the Caribbean located on one-half of the island of Hispaniola. It is a small Caribbean island roughly the size of the state of Maryland, and it occupies the left portion of the landmass west of the Dominican Republic. At one point in history, Haiti was one of the most productive countries in the world, with its main exports being sugar and cotton (Brown, 2010). The country is rich in culture and pride and dedicated to its Christian faith. At any given time, one can be passed by on the street by a multi-colored transportation vehicle known as a “Tap-Tap.” Tap-Taps are the major mode of public transportation all over Haiti; each of them proudly displaying their love of their faith with various quotes and Bible verses meticulously scripted around the perimeter of the vehicle. Hair salons and barbershops are open, and the chairs are full at any given time during the week. Although, economically challenged, Haitians pride themselves in personal upkeep. This is especially true when making the trek to church and seeing everyone dressed in their Sunday best.

The population is approximately 10,746,000 or 824 persons per square mile and the life expectancy is approximately 62.4 years (Central Intelligence Agency [CIA], 2018). A healthcare comparison to the United States reveals stark contrasts; persons per physician: 4,000 (385 in US), infant mortality per 1000 live births: 59 (7.5 in US), maternal mortality per 100,000 births: 160 (12 in US), and yearly health care expenditure per capita: \$77 (\$2,765 in US). Health care delivery services in some areas of Haiti are not readily available to everyone who needs them. Barriers to access include poorly supported infrastructure, cost, and long distances to medical facilities (Community Health

Worker, personal communication, June 29, 2016). This study, using the systems thinking approach, sought to examine a work group as they collaborate to address the barriers to adequate health service delivery in the region of St. Marc, Haiti. This work group is a coalition of collaborators from various backgrounds of expertise who work together to expand health delivery services; which includes improving capacity building and infrastructure development in St. Marc. The group will be interchangeably referred to as a collaborative, a coalition, and due to its ongoing addition of members, an emerging system.

Diminished access to health services is derived from the weak infrastructure in Haiti. The resulting effects are poor health outcomes. Untreated chronic diseases are a burden to the healthcare system (Morgan, Zamora, & Hindmarsh, 2007). Patients who suffer from chronic illness are at greater risk for developing additional chronic illnesses throughout their lifetime; thus, increasing the prevalence of chronic disease within the population. The World Health Organization (WHO) recognizes the role of chronic illness worldwide. In 2005, it estimated 35 million deaths as being attributed to chronic illness with the expectation that number would increase by 17% over the following ten years. Haitians suffer from high incidence rates of communicable and non-communicable diseases; some of which are chronic. Expanding infrastructure in poorly supported areas such as St. Marc will create the capacity to expand access to health delivery services. This is tantamount to mitigating poor health outcomes in the area.

Poverty is a key contributor to the health outcomes of Haitians. It dates back centuries to when the French imparted a colonial tax in exchange for the country's freedom from slavery. This would equate to approximately \$21 billion in today's market

value. The tax was paid for more than a century, from 1804 to 1947 (Henochsberg, 2016). This tax, “The Independence Debt,” drained the Haitian treasury of its capital. After being ravaged by war and cut-off from export markets, the Haitian economy could not generate enough revenue to support the debt. This led to other economy generating attempts such as the over-production and taxing of agriculture (Phillips, 2008), which also failed to resolve the financial instability of the country.

Today, Haiti is known as the poorest country in the western hemisphere (Dowell, Tappero, & Frieden, 2011). With an income per capita of just \$250, it is also considered one of the poorest countries in the entire world (The World Bank, 2016). Deforestation is another issue that arose resulting from the country’s debt. This continues to indirectly affect the country’s health care situation because it impacts the country’s environmental infrastructure. What was once a country blanketed with vegetation has now been reduced to approximately three percent tree cover (Dolisca, McDaniel, Teeter, & Jolly, 2007). Two secondary contributors, aside from the enormous debt, have been designated as the cause of deforestation. The first is the need for fuel production. The second, is the clearing of land for agricultural purposes (Stevenson, 1989). The use of wood for fuel is typically practiced by the impoverished, as they most likely do not have access to alternative fuel sources such as gas and/or electricity. Deforestation changes the topography of the landscape making it more susceptible to natural disasters—the impact of strong tropical storms is far greater when there is a lack of tree cover.

Haiti has been the epicenter for natural disaster occurrences in the history of the Caribbean. In the past ten years alone, Haiti has experienced multiple natural disasters that decimated areas across the country. In 2008, the country was hit by four tropical

storms: Fay, Hanna, Ike, and Gustav (Masters, n.d.). In 2010, a massive earthquake resulted in a death toll reported between 220,000–300,000 with an estimated 1.5 million Haitians being displaced across the country (CIA, 2018). The earthquake resulted in the destruction of crucial infrastructure such as the National Palace and Parliament. Later that year, a massive cholera outbreak introduced by United Nations volunteers quickly spread throughout the country (Pallardy, 2016). Previously, experts had not reported cholera in the country for decades. The devastation of the outbreak was magnified by the lack of sanitation, clean water, and health infrastructure. This is a direct effect of the earthquake itself and the lasting effects of the colonial tax. According to Pallardy, cholera has affected nearly 1 million Haitians (770,000) and as of 2016 has claimed more than 9,000 lives. To date, Haitians are still protesting that the United Nations take responsibility for the Cholera outbreak and remediate the affected areas (see Appendix A).

In 2017, there were an estimated 38,000 Haitians who were still displaced seven years after the earthquake (Cable News Network [CNN], 2018). In 2016, Haiti was met with yet another disaster in hurricane Matthew. The results of the flood damage were exacerbated from the previous deforesting of the country and the lack of infrastructure (see Appendix B). By excessively cutting down trees for fuel, the soil had nothing to hold on to. The harsh winds and rain from each of the tropical storms caused serious damage in the form of extensive flooding, erosion, and landslides (The World Bank, 2017). The flooding, erosion, and landslides resulted in repeated damage to agricultural land, buildings, and personal residences with each storm that followed. This has left the Haitian people displaced and without the infrastructure to support access to important

resources, such as healthcare services. The earthquake left many hospitals unsuitable for use (Pallardy, 2016). While incidence rates of disease increased throughout the country, access to health services decreased significantly. Due to the minimal presence of infrastructure, it has been nearly impossible for Haiti to recover as a country or provide the level of health services necessary for its people.

Overview

Haitians suffer from high incidence rates of preventable infectious and non-communicable diseases (Center for Disease Control and Prevention, 2018). Table 1.1 lists the top 10 health issues in Haiti as interpreted by the CDC from the Global Burden of Disease (GBD) study. The Global Burden of Disease study measures health problems of 195 countries and territories that prevent people from living long, healthy lives (Institute for Health Metrics and Evaluation, 2018). In addition to historical problems that affect the country's health, Haiti also has a low literacy rate. The literacy rate in Haiti is 60.7% (CIA, 2018). As a result, follow-up and maintenance by patients who are illiterate and may not be able to read the prescription or after-care instructions is difficult. Not being able to read the prescription bottle or directions from the doctor can lead to return visits or a relapse of the original ailment (i.e. infections, stomach issues, etc.).

Table 1.1.

Top 10 Health Issues in Haiti

Rank	Disease
1	Cardiovascular Diseases
2	Diarrhea/ Lower Respiratory Tract Infection (LRI)/Other
3	Neoplasms
4	HIV/AIDS & Tuberculosis
5	Diabetes/Urology/Blood/Endocrine Diseases
6	Neonatal Disorders
7	Unintentional Injuries
8	Chronic Respiratory Disorder
9	Transport Injuries
10	Other Non-Communicable Diseases

Note. The top 10 health issues causing death between the years 2007-2017. Adapted from “Haiti Top 10 Causes of Death,” by the Center for Disease Control and Prevention. Adapted from: <https://www.cdc.gov/globalhealth/countries/haiti/default.htm>. Copyright 2018 by the University of Washington.

Specific Aims

Lack of infrastructure has stifled the capacity to provide health delivery services to the people of Haiti. This exploratory case study will examine an emerging system that is poised to address access and administrative issues in the current health delivery system by increasing capacity building and implementing infrastructure development in the region of St. Marc. This research contributes to the body of knowledge by addressing gaps in the literature with respect to applying a systems thinking approach to an emerging system to be used as a tool for capacity building and infrastructure development to expand health delivery services.

Various stakeholders are coming together to enhance the infrastructure. The emerging system includes the following stakeholders: The Yonide Pierre Foundation, which has been hosting transient or “pop-up” clinics that provide health care services throughout Haiti; The African Methodist Episcopal–Service and Development Agency (AME-SADA), which previously has provided infrastructure in the form of new roadways to inaccessible areas, as well as building a new clinic in a remote mountain area of Haiti; The Université Publique de l'Artibonite aux Gonaïves which will serve as the educational facility to train paraprofessionals in preparation for community health outreach; The Ministry of Health and local government officials; local benefactors who will assist with funding and resource pools, and various clinical staff.

Significance of the Study

Each of the stakeholders in the emerging system has been working independently within their own area of expertise to address specific health delivery issues within the community. Examining a collaborative of this magnitude using the systems thinking approach has never been executed in Haiti. This emerging system is the first of its kind; and the implications from this case study may lead to a model that can be replicated in communities with similar needs in other parts of Haiti and the world. This exploratory case study will identify stakeholders who are in the position to create a unique opportunity to impact health service delivery and access by enhancing infrastructure at the community level. If the emerging system is successful, it has the potential to influence policy and implement expanded infrastructure at the national level in Haiti. Global implications could lead to unique opportunities to impact health care access and delivery of services in other countries.

Chapter 2: Review of the Literature

The purpose of this study was to understand key stakeholders' perceptions of the status of health delivery services and examine how members of the stakeholder group worked together to enhance the current health service delivery system to be more effective and operational in St. Marc, Haiti. The previous chapter introduced background information including historical epidemiology and environmental data to gain a greater understanding of health issues in Haiti and how they became so dire. This chapter will cover the review of the literature which includes various attempts made by public health coalitions in third world countries to implement long-term public health interventions. The review also includes an examination of theories and frameworks commonly used as driving forces in public health application. This chapter reflects the major bodies of research that helped inform this study which are: (1) Systems thinking (2) The World Health Organization (WHO) Health Systems Framework; (3) The Community Coalition Action Theory (CCAT); and (4) Interorganizational Relations Theory (IOR). The chapter also introduces a new concept, cross-sector transdisciplinary collaboration.

Systems-Thinking

Systems thinking was first coined by Barry Richmond in 1987. It has since been defined and re-defined over the years to describe how parts of a system work together over time within the context of the larger system. For this case study, systems thinking will be used to scaffold what is already known in the public health arena about interorganizational relationships. Applying the systems thinking approach to interorganizational relationships will highlight the disadvantages of previously deployed initiatives (e.g. archetypal constraints). Archetypal constraints are inadvertent variants

that become hindrances to one or more parties within a collaborative effort. These variants could cripple the organization's outcomes, thereby rendering the initiative at its core, ineffective. Instead of the conventional, linear approach to public health issues, systems thinking examines the entire system while working to get to the root cause of a problem. Systems thinking helps clarify why certain issues that are tackled by conventional means do not always end with the necessary resolve. For example, a conventional method to curtail crime in certain areas may be to apply more stringent prison sentences. Heavy prison sentences do not address the core issues that are the basis for crime laden areas. In these instances, criminals are sentenced heavily and once their time has been served, released back into society to the same circumstances (Stroh, 2015). Therefore, there is a high likelihood of the cycle perpetuating itself. Systems thinking admonishes the applicator to be cognizant of the fact that the relationship between a problem and its cause is sometimes indirect and not always obvious (Stroh, 2015).

As systems thinking is a holistic approach, it is understood that it is not discipline specific. Cross-sector transdisciplinary approaches can be used to guide problem solving and program development, leading to the effectiveness and sustainability of complex systems such as health care (Gray, 2008). A review of the literature reveals that previous global health delivery plans have been based in theory, have utilized novel concepts, and have relied on multiple organization participation, but some have not been largely successful in terms of sustainable solutions to third world health delivery systems; such as the case with health service delivery issues in St. Marc, Haiti. Coalitions have failed for a myriad of reasons including the incidental set-up of barriers to other partners within

the collaboration and antithetical visions (Burgess, 2007; Wolff, 2001). Although not considered a failure, a major identified weakness among coalitions was a lack of trust between government and non-governmental organizations (Biesma, Brugha, Harmer, Walsh, Spicer, & Walt, 2009). Utilizing the systems thinking approach will be helpful in examining the interorganizational relationships within the coalition from a holistic viewpoint. It may also help bridge the gaps in sustainability of social based health programs, because the focus will be the core issues in the breakdown of the health services delivery system.

Members of the coalition will be integrated into the system and must work together to understand each other's role in the collaborative as well as understand the relationships between the issues surrounding health service delivery. Varying roles of individuals within the collaborative include medicine, psychology, education, and social work; but also includes members of industry and the local government. The systems thinking approach supports the examination of root causes of the issues with health delivery services and strategic planning carried out by the various stakeholders. Strategic planning and evaluation within this coalition will take place continuously and is focused on quality public health and education, economic, and business strategies for vulnerable populations.

Cross-Sector Transdisciplinary Collaboration

Cross-sector collaborations involve public and private partnerships that work together to solve a problem and reach a common goal. Bryson, Crosby, and Stone (2006) argue that complex public problems are more effectively dealt with across different sectors of expertise. For example, when examining cross-sector relationships on Area

Agencies on Aging (AAAs), it was concluded that AAAs, who had informal partnerships with a broad range of organizations, boasted significantly lower hospital readmission rates. These cross-sectional partnerships were also a factor in overall health care spending (Brewster, Kunkel, Straker & Curry, 2018).

Transdisciplinary research can be described as an integration of academic and nonacademic stakeholders (Pennington, Simpson, McConnell, Fair & Baker, 2013). When combined, a new approach, cross-sectional transdisciplinary collaboration is formed. This new approach is the embodiment of applying systems thinking to the coalition. “An interdisciplinary approach removes barriers, but a transdisciplinary approach additionally seeks to create a new, unified direction with a focus on solving problems, engaging a broad range of stakeholders outside academia” (Takeuchi, 2014). In a cross-sector transdisciplinary collaboration, the academic and nonacademic stakeholders participate in resource sharing and information exchange. Information exchange in this context involves capturing the perceptions of different stakeholders based on their niche within the group, while simultaneously encouraging the understanding of and value of the other roles within the group. This knowledge exchange includes creating strategies for capacity building and infrastructure development while focusing on the core issues with health service delivery in St. Marc, Haiti.

Transformative learning is a key process for synthesizing knowledge across disciplines. It involves the self-reflection of individual beliefs and practices as previously known by considering new experiences (Taylor, 2017). When collaborators of diverse backgrounds engage in high-priority problems, transformative learning across all disciplines within the group can occur. This can lead to new conceptualizations and

innovative thinking (Pennington et al., 2013). To enhance knowledge translation, the team should be transdisciplinary and comprised of expertise from various backgrounds (Archibald, Lawless, Harvey, & Kitson, 2018). In the case of St. Marc, this includes a team to facilitate building physical infrastructure; a team to train community health workers (CHWs) and run the mobile health units; and a team dedicated to funding the project with its needs (medical supplies, permits, etc.).

The Conceptual Framework

The conceptual framework for this study is based upon the process of using the holistic approach of systems thinking. Figure 2.1 depicts the conceptual framework of this study. Through cross-sector transdisciplinary collaboration, an emerging system (the coalition) will be created. Then, by addressing four core issues of the current delivery system which are also components of a sustainable health services system (access, capacity building, infrastructure development, and sustainability), the emerging system can work towards the goal of expanding the health service delivery system in St. Marc, Haiti.

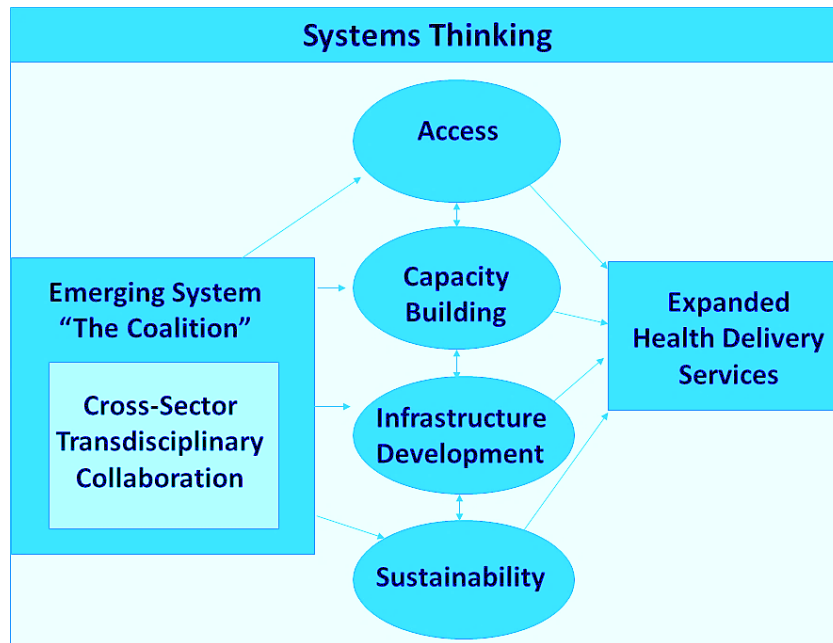


Figure 2.1. The Conceptual Framework

WHO health systems framework. The components of this framework are core concepts that can be applied to the emerging system in St. Marc, Haiti. The WHO Health Systems Framework is based upon six building blocks: 1) health services that deliver safe, quality health interventions when needed; 2) a fair and efficient health workforce that works towards providing the best outcomes possible; 3) a health information system that distributes reliable health system performance and health status; 4) essential medical products such as vaccines and technologies that are scientifically sound and cost-effective; 5) a good health financing system to protect people from financial catastrophe; and 6) leadership and governance that ensures that strategic policy frameworks are put in place and accountability. Figure 2.2 depicts the building blocks and the goals and outcomes of this international health systems framework.

Table 2.1 describes four core issues with health service delivery in the case study that will be used to examine the emerging health services system in Haiti, each of which contributes to a sustainable health delivery system. The components include: Access, Infrastructure Development, Coalition/Capacity Building, and Sustainability. Examining the linkages of these four sub-components as they relate to the emerging system adds a “systems-thinking” approach to this study as they are the core issues to current health service delivery.

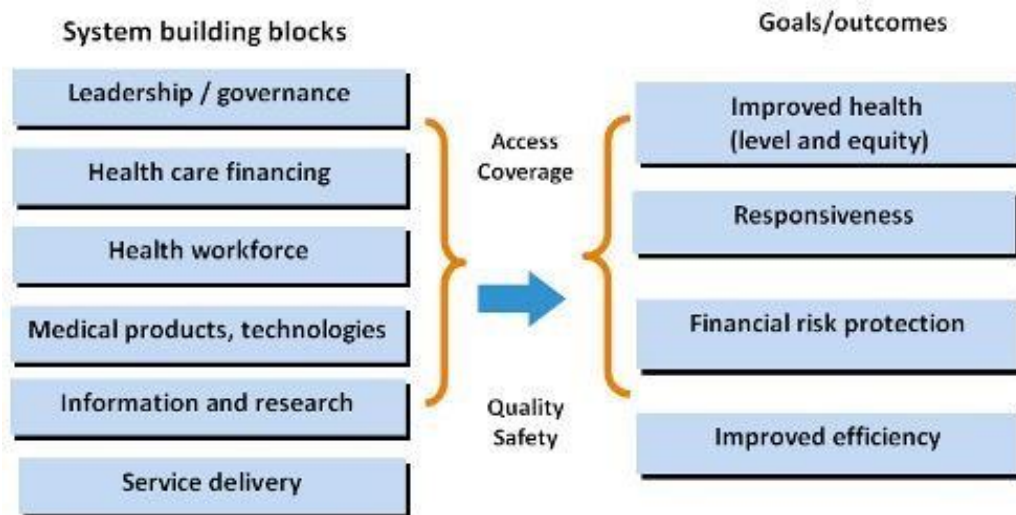


Figure 2.2. The WHO Health Systems Framework, Adapted from “Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and Their Measurement Strategies,” by The World Health Organization, p.vii. Copyright 2010 by the World Health Organization Press.

Table 2.1.

Four Components of a Sustainable Delivery System

Topic	Summary	Authors
Access	Access is not limited to financial barriers	(Penchansky & Thomas, 1981)
Infrastructure Development	Infrastructure development increases value to areas previously without the capacity to build. The impact of infrastructure contributions can be quantified. Public infrastructure can be an engine for growth for products and health services.	(Wyszewianski, 2002) (Bossel, 1999) (Wang, 2006) (Agènor, 2009) (Khan, 2014)
Coalition/Capacity Building	Utilizing a coalition for capacity building can be used in a myriad of diverse settings ranging from communities to clinical settings.	(Frieden, 2013) (Crisp et al., 2000) (Madsen, 2016)
Sustainability	Preventing chronic illness and reducing its prevalence is tantamount to sustaining a health care system. There are varying, but specific indicators for sustainable development for communities, regions, and countries. Using a pragmatic approach promotes conversation on related experiences.	(Schell, 2013) (Morgan, Zamora, & Hindmarsh, 2007) (Berawi et al., 2017) (OECD, 1993)

Interorganizational relations theory. Relationship management theory offers characteristics of relationships that may be used to understand the ability of myriad types of organizations to work together toward a common goal (Aldoory, Bellows, Boekeloo, & Randolph, 2015). The theory dates to the 1960's with respect to how environment influenced organizational behavior (Butterfoss, Kegler, & Francisco, 2008).

The emerging system in St. Marc can be described by the characteristics of an action or promotional network within the theory of interorganizational relations in that the system will share pooled resources to fulfill a concerted action. In the case of this emerging system in St. Marc, that specific action is infrastructure development, which will lead to the capacity to build a sustainable health service delivery system for the region.

Community coalition action theory. The Community Coalition Action Theory is part of the Interorganizational Relations Theory. This theory is used to build community collaborations that are actively engaging one another to address community issues via capacity building (Butterfoss et al., 2008). Crisp, Swerissen, and Duckett (2000) identified four approaches to capacity building; the top-down method, the bottom-up method, the partnerships approach, and the community organizing approach. The partnerships approach involves the building of or strengthening of partnerships within a community (Crisp et al., 2000). Formed partnerships between members of the community with the same vision but varying expertise provides a multifaceted approach to tackling any issue, because each entity is uniquely qualified to address the problem. Wolf (2001a) states, “community coalitions are incubators for innovative solutions to large problems facing not only their community, but also the nation as a whole” (p. 168). The CCAT is based on fourteen constructs (see Figure 2.2). Implications from this theory can be used to explain or predict improved organizational structure, function, and effectiveness (Lansang & Dennis, 2004; Butterfoss et al., 2007; Glanz, Rimer, & Viswanath, 2008; Wolff, 2001b).

Building a strong team of collaborators increases the success of the implementation plan (Lansang & Dennis, 2004). This is particularly true when building coalitions within developing countries. In these countries, funding is not the sole determinant of successful collaborative efforts. Rather, the time and energy put into human resources is more crucial to building successful coalitions; that is, the empowerment of individuals and organizations. Time and energy placed into human resource development will address ongoing challenges encountered by the coalition as they persist and change over time (Lansang & Dennis, 2004).

Table 2.2.

The 14 Constructs of the CCAT Model

Constructs	Propositions
Construct 1: Stages of Development	This includes each stage of the capacity building process from, forming the community coalition to the implementation of the work, incorporating new members, etc.
Construct 2: Community Context	These factors will help or hinder how the coalition will be able to build the capacity to influence the programming.
Construct 3: Lead Agency/Convener Group	The leader or head of the coalition groups is usually where the funding will come from.
Construct 4: Coalition Membership	All members are made up of groups who are willing to come together to resolve the health issue at hand. The coalition functions well with diverse group members with varying levels of community influence.
Construct 5: Operations and Processes	How the group decides to move forward with resolving the issue via communication and decision-making is important. Having diverse membership ensures that each group has a unique niche within the coalition and can operate within their area of expertise.

(continued)

Table 2.2.

The 14 Constructs of the CCAT Model (continued)

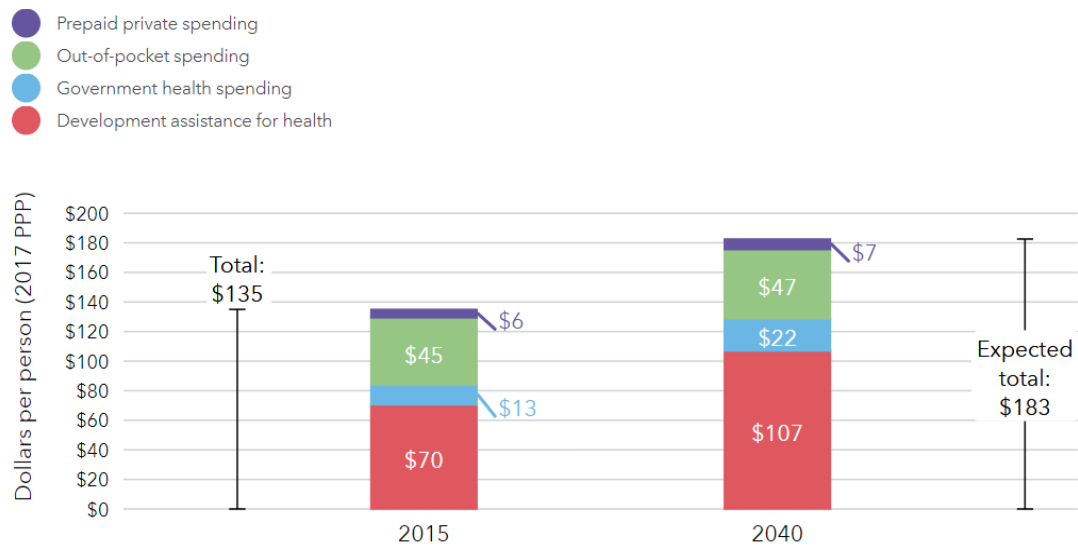
Constructs	Propositions
Construct 6: Leadership and Staffing	Includes paid staff and/or volunteer members of the group that help with the function of the coalition. Volunteer members may come from a rotating pool (such as students) while paying members for their services could add a layer of economic empowerment within the community.
Construct 7: Structure	Formal agreement between groups that indicates the roles and processes of the coalition. This will also include the mission statement or vision for the coalition.
Construct 8: Pooled Member and External Resources	Incoming funds that will be used to support the mission of the group such as grants and donations.
Construct 9: Member Engagement	The specified work performed by members of the group.
Construct 10: Assessment and Planning	The planning stages of the scope of work before the implementation stage
Construct 11: Implementation of Strategies	The planned scope of work in action that will help create change in the community
Construct 12: Community Change Outcomes	Outcomes that can be measured within the community that include policies and practices
Construct 13: Health and Social Outcomes	Measurable changes in health outcomes within the community
Construct 14: Community Capacity	Identifiable characteristics within the community that address social and public health problems.

Note. The fourteen constructs of the community coalition action theory. Adapted from “Mobilizing Organizations for Health Promotion,” by K. Glanz, B.K. Rimer, and K. Viswanath (4th Ed.), *Health Behavior and Health Education: Theory, Research, and Practice* p.349. Copyright 2002 by Butterfoss and Kegler.

Access

In 1981, Penchansky and Thomas characterized access into the 5 A’s which are affordability, availability, accessibility, accommodation, and acceptability. Each characteristic is of equal importance, with none able to stand on its own. Together, these characteristics are all encompassing; creating an environment that allows access to care. These characteristics extend to both the patient and the health care provider.

Affordability is determined by cost. If the patient cannot afford medical services, they will not seek care. Figure 2.3 depicts annual healthcare expenditures in Haiti for the year 2015 with a projection for spending into the year 2040. Most Haitians pay out of pocket for medical services due to the direct pay system, which means that payment is due at the time of service (Alfred, 2012). Keeping in mind the previously mentioned \$250 per capita income, affording healthcare is difficult for many Haitians.



*Figure 2.3. Expenditures per person on health care in Haiti. The health spending information is shown by spending source in the year 2015 with a projection of expenditures for the year 2040. Adapted from “Institute for Health Metrics and Evaluation (IHME). *Financing Global Health 2017: Funding Universal Health Coverage and the Unfinished HIV/AIDS Agenda*. Seattle, WA: IHME, 2018” by The Institute of Health Metrics and Evaluation. Copyright 2018 by the Financing Global Health Database.*

Availability and Accessibility will be explained together as they can be described as having a synergistic relationship, in that having neither, contributes to perceived barriers to access in Haiti. Healthcare services delivery is not always available when needed. Services could be located hours outside of the residential area. When services are available, arranging travel to get to them poses significant hardship for some

(Schwitters et al., 2015). Logistically, accessibility to healthcare in Haiti is often as simple as the ability to physically get to the medical facility.

Accommodation adds another layer to access. Posted times of services and requiring scheduled appointments may not be viable options for some. Long wait times can also pose issues; particularly, if a patient travels from far away or must rely on scheduled transport to make it to the facility. Lastly, acceptability plays a role in access in that the patient may not be satisfied with the methods of health services or vice versa (Wyszewianski, 2002). This could discourage patients against return visits for future medical needs and has the potential to spread distrust for the provider among the community. Conversely, if the health care provider has an experience that they deem unacceptable, it could dissuade other clinicians from providing much needed health care services to that area, leaving the population without the necessary medical staff and eventually the commencement of patients self-managing untreated health issues.

In general, Haitians suffering from the prevalence of untreated diseases (both communicable and non-communicable) are experiencing inequity by lack of access. Inequities in healthcare are often discussed in terms of race and its relationship to socio-economic status. In Haiti, the target population is 95% Black and 5% Mulatto and White (CIA, 2018). Therefore, race is not a contributing factor. Instead, the lack of access seems to be an on-going result of the destabilized economy, which has seen no relief since the implementation of the colonial tax imparted by France in 1804. Barriers to the 5 A's of access may be mitigated by developing the capacity to implement alternative health care service providers and by enhancing the current health service delivery infrastructure.

Sustainability

Sustainability is defined as the ability to “maintain; keep in existence; keep going; prolong” (Webster, 1962). What is sustainable development? Although there are several definitions, The World Commission on Environment and Development (1987) defines it as, “economic development that meets the needs of the present generation without compromising the ability of future generations to meet their own need” (p. 41).

Sustainability is a dynamic concept that should adapt as societies change; including any changes in cultural norms and values (Bossel, 1999). As such, there are a multitude of constraints placed on societal development. With growth comes change; with change comes the potential for reduced or restricted access to previous practices of societal norms. For example, at one point in time it was generally viewed as acceptable to hang clothes on a line outside to dry after washing. However, today, depending on where you live, this practice is taboo and often prohibited in specific residential areas.

Like cultural norms, sustainable infrastructure development must also be adaptive to changes in society as it grows. This is particularly applicable to interorganizational relations within collaborations and the community, as these relationships are expected to evolve over time.

The literature suggests that successful coalitions are able to survive when they addressed six key areas: (1) innovation to develop the evidence base for action; (2) a technical package of a limited number of high-priority, evidence-based interventions that together will have a major impact; (3) effective performance management, especially through rigorous, real-time monitoring, evaluation, and program improvement; (4) partnerships and coalitions with public- and private-sector organizations; (5)

communication of accurate and timely information to the health care community, decision makers, and the public to effect behavior change and engage civil society; and (6) political commitment to obtain resources and support for effective action (Frieden, 2014). These indicators for success were taken into consideration when examining the emerging system identified in this case study.

Sustainability, however, is not limited to these areas. Successful efforts towards capacity building in developing countries are dependent upon several factors. In a study of health program capacity for sustainability, Schell (2013) and colleagues identified nine core domains that affect a program's capacity for sustainability. These domains are: political support, funding stability, partnerships, organizational capacity, program evaluation, program adaptation, communications, public health impacts, and strategic planning. Wangari Maathai (2010) addresses one of these domains (funding stability) when describing the issues of third world countries, specifically Africa, that receive aid from outside sources and become dependent upon them, admonishing that, ". . . donors' money can further corrode responsibility" (p. 69). This is one of the barriers within the current health delivery system in Haiti. Mathai further states that it is the responsibility of the people to empower themselves after the donations from public and private sector organizations start to run low or run out, because relying on foreign aid is not sustainable. When discussing the empowerment of the community and sustainability, public health should also be taken into consideration. This includes government investment in the people including basic health, clean drinking water, and proper sanitation (Maathai, 2010).

Typically, a case study addresses the “how” and “why” of a problem. For this study, the problem is finding a path towards capacity building and infrastructure development in a third world country. The “why” is because of the diminished capacity for infrastructure in the area. The “how” will examine the innerworkings of the coalition as they move towards expanding health services in this environment.

The data collected in this study examined three questions:

- How do stakeholders involved in an emerging system describe the current state of health delivery services in Haiti?
- How do stakeholders involved in an emerging system describe their experience in a collaborative effort?
- How do stakeholders describe the intended impact of this newly emerging system?

Chapter 3: Methodology

Study Design

This study is a single case study, with an embedded design (Yin, 2009). It is single in that the unit of measurement is the key stakeholder group (the emerging system) and it is embedded in that it is supported by previously existing theories; the Community Coalition Action Theory and the Interorganizational Relationship theory. The methodology of this case study will describe how the research questions were addressed.

This study explored the process of how an emerging system of collaborators worked together to implement infrastructure development and capacity building in St. Marc, Haiti. For this study, systems thinking involved integrating the stakeholders into a group of cross-sector, transdisciplinary collaborators to address the core issues with health delivery services. The group is cross-sector in that they are pooling their resources together towards the common goal of enhancing health service delivery. The group is also transdisciplinary in that it is made up of individuals from varying backgrounds of experience and expertise. A single-case design examines a rare or unique circumstance; such is the case of the emerging system in St. Marc. The embedded component addresses the portion of the research that will be testing the existing theories CCAT and IOR.

The methodology of this case study focused on identifying the collaborators' perceived core issues of the current health delivery system and the actions taken by these key stakeholders to enhance the infrastructure and capacity building surrounding the system. This included identifying collaborators' niche roles within the coalition,

identifying gaps in healthcare access, analysis of the resources needed for capacity building and infrastructure development, and the implementation of programming to enhance health service delivery. All nine domains that affect a program's capacity for sustainability: political support, funding stability, partnerships, organizational capacity, program evaluation, program adaptation, communications, public health impacts, and strategic planning were incorporated into open-ended interview guides prepared for the stakeholders.

The CCAT, developed by Butterfoss and Kegler (2002), provided the existing theory for bringing various stakeholders together to form strategic partnerships. This theory was applied in tandem with the IOR to examine the capacity to build relationships between key stakeholders and the community, how these relationships transformed into a newly emerged system, and how that system has expanded its health care delivery system reach within the St. Marc region of Haiti.

Study Sample

There are seven key stakeholder groups represented in the emerging system. This stakeholder group is the major source of data collection. Participants who were identified as key stakeholders were purposefully selected (non-probability sampling) based on their participation within the coalition that is being referred to as this “emerging system.”

Inclusion criteria included:

1. Participants' input in the various programs and activities concerning infrastructure development within the area and
2. Participants' availability and willingness to be interviewed.

The rationale for choosing individuals as key stakeholders was based on their unique niche in the community and the work they performed in their area of expertise. Members of the emerging system include medical and non-medical professionals that each have a specific perspective as it pertains to the needs of the infrastructure necessary to implement the desired health services delivery system specific to the St. Marc region. The key stakeholders include: AME-SADA, The Yonide Pierre Foundation, The Université Publique de l'Artibonite aux Gonaïves (UPAG), The School of Community Health and Policy at Morgan State University (MSU), The Action Missionnaire Evangelique d'Haiti group (AMEVHA), the local government (St. Marc), The Haitian Ministry of Health, and various CHWs (volunteers, paraprofessionals, medical professionals on-site in St. Marc, Haiti).

AME-SADA is the African Methodist Episcopal Church Service and Development Agency and is headquartered in Washington, DC, USA. Their aim is to improve the quality of life in Africa and the Caribbean with a mission that states, “helping people help themselves.” Although, their program areas include health, education, and infrastructure, their niche in this study is specific to creating physical infrastructure (AME-SADA, 2018). Recently, this organization completed construction of an outpatient clinic in Delice, Haiti as well as a newly constructed roadway for residents in the mountains to utilize for daily travel (see Appendix C). Previously, before the road construction, traveling one way up or down the mountain to get to the main road took six hours. After the road construction, residents can make the trip in approximately three hours.

The Yonide Pierre Foundation is a non-profit group of community volunteers that has been hosting transient or “pop-up” clinics that provide health care services throughout Haiti to vulnerable populations. Thus far, these vulnerable populations have included the needy, street children, and those with reduced mobility (Day, 2017). The volunteer groups provide a wide range of services including but not limited to ophthalmology, gynecology, and general health screenings.

The Université Publique de l’Artibonite aux Gonaïves (UPAG) is an educational institution founded January 5, 2007 and located in St. Marc, Haiti. It is a public university with approximately 1400 students and 80 professors. Faculty hold advanced degrees at the master’s and doctorate levels. Although the university currently offers bachelor’s degrees to its student body, it plans to offer advanced degrees soon. The school offers four majors which are Education, Administration, Accounting, and Nursing/Health. Funding comes from the government and student tuition. The languages spoken are French and Kreyol (Auguste, 2016).

AMEVHA is a Christian missionary group that focuses on providing medical mobile clinic services. Their focal areas include rural parts of Haiti that are not easily accessible to vehicles. They also provide social-economic services (AMEVHA volunteer, personal communication, April 24, 2018). The Office of the Mayor and the Ministry of Health are responsible for the local governance within St. Marc and general health of the people of Haiti, respectively. Various community health workers and medical professionals will rotate throughout the region; some workers will be permanent, others will not. CHWs interviewed during this study were not guaranteed to be working with the group permanently.

Morgan State University, founded in 1867, is a Carnegie-classified doctoral research institution providing instruction to a multiethnic, multiracial, multinational student body and offering more than 100 academic programs leading to degrees from the baccalaureate to the doctorate (About Morgan, 2019). The vision of the School of Community Health and Policy (SCHP) is to be an integral part of the community, working to achieve optimal health. The Morgan State University School of Community Health and Policy's mission is to develop a corps of health professionals committed to transforming urban communities by promoting health and reducing health inequities (School of Community Health and Policy, 2019).

The Ministry of Public Health and Population in Haiti is the government arm responsible for formulating and implementing the National Public Health Policy. The focus of the institution is to ensure an efficient, adequate, and accessible universal health system that reduces morbidity and mortality. The guarantee that it offers to all Haitian citizens is, “. . . without distinction the right to life and health and to provide them, in all local authorities, with the appropriate means for the protection, maintenance and restoration of their health (“Le Ministere,” 2018).

Three stakeholders that originally agreed to participate in the study were lost to attrition. The remaining participants of the key stakeholder group included: a pharmacist; a CHW serving as an emergency medicine medical professional; an internal medicine medical professional; a CHW serving as an optometrist, an educational professional at the Université Publique de l'Artibonite aux Gonaïves; and a local government representative for the region of St. Marc, Haiti.

The most recent census on record was conducted in 2003 and listed the population as 160,181 inhabitants within the region (“Saint-Marc,” 2017). Figure 3.1 is a map of Haiti. The circle on the map is the research site for this study.



Figure 3.1. Map of Haiti. The region of St. Marc is circled. Adapted from “Political Map of Haiti,” by Nations Online, 2018. Copyright 2008-2019 by NationsOnline.org.

Instrument

Two interview guides were created for this study. One interview guide was prepared for the medical professional stakeholders (see Appendix D). The interview guide prepared for the medical professional stakeholders included (16) open-ended questions. A separate interview guide was prepared for the non-medical professional stakeholders (see Appendix E). This interview guide included (11) open-ended questions. An alignment matrix was created for both guides to ensure that all three research questions were adequately addressed in the instruments (see Appendices F and

G). In addition to the research questions, both interview guides covered topics including access to health care services, capacity building, collaboration, operations and procedures, infrastructure development, sustainability, and policy.

Data Collection Process

To reduce bias, data was collected and analyzed from three different sources (see Figure 3.2). The three sources were one-on-one interviews with the key stakeholder group, observations of the key stakeholder group and the St. Marc community, and archival data developed by the key stakeholder group. Interview data collection began in April 2018 and was completed by July 2018. Observational data of the St. Marc Community was collected during the period of April 20-28, 2018 while the participant observer was in Haiti. Archival data includes notes/minutes from meetings, teleconferences, and e-mails dating back to the year 2016. All data collected has been stored and secured in a locked file cabinet. The data will be kept for a period of 10 years and may be used for future longitudinal studies that may be conducted as follow-up for program evaluation and sustainability.

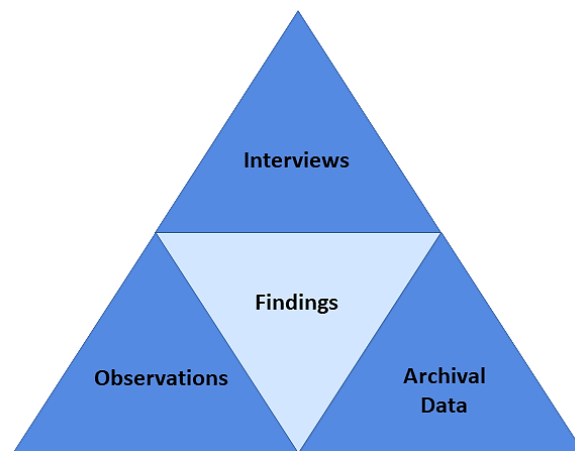


Figure 3.2. Graphic depiction of the triangulation of data.

Interviews. One-on one interviews using an open-ended interview guide were conducted with each of the key stakeholders. Each interview was audio-recorded. Participants were asked to review and sign a consent form outlining the guidelines for their participation before the interviews. No stakeholders were compensated for their participation in the study. Stakeholders were assured that their responses would remain anonymous and would be presented in aggregate form. The interview questions addressed components of the existing theories (CCAT, and IOR). Questions for the medical professionals were tailored towards their opinions based on their medical expertise. Questions for the non-medical professionals were tailored in the same manner. Both interview guides maintained the integrity of the study and of the group in that the domains of interest were covered in each guide. Topics covered in the interviews included access to health care services, capacity building, collaboration, operations and procedures, and policy. The interviews also incorporated questions that addressed access, infrastructure development, sustainability, as well as each stakeholder's perceived role within the collaborative.

Observations. The participant observer recorded daily observations while in Haiti. Such observations included the day to day life of the residents of St. Marc in their normal environment. Best efforts were made to be as minimally intrusive as possible to the natural flow of the environment so as not to disrupt routines or inadvertently cause deliberate deviation from normal activities. Members of the community were not considered key stakeholders. Therefore, this data was not included in the aggregated stakeholder responses. However, observations of community members did add to the richness of this study. Observing social norms of the people of St. Marc provided the

opportunity to briefly examine the “why” of various health outcomes in the area. These observations also served as additional sustenance to the key stakeholder responses, as the participant observer was able to experience the culture and environment of the area and garner a better understanding of the context of stakeholder’s experiences first hand.

Likewise, observations of the key stakeholder group were also documented throughout the case study. This information was used to compare the responses provided by the key stakeholders during their one-on-one interviews.

Recorded observations included behaviors and actions among the group while all stakeholders were together in Haiti as well as during teleconferences and other off-site meetings that the participant observer was present for throughout the study. As stated previously, recording observational data provided contextualization to key stakeholder’s responses. It also reduced the proclivity to impose theories or concepts that could have been a poor fit with the perceptions of the stakeholder group.

Archival data. Meeting minutes and notes from in-person meetings, official documents, and teleconferences as well as e-mail threads that took place during this case study were considered archival data. Stakeholders were not asked to keep a journal during the study. However, after the signing of the MOU, which made the first strategic partnership within the collaboration official, stakeholders were asked to write a summary documenting their experiences throughout the process of coming together with the other stakeholder members. Their written summaries also included a brief statement about future expectations of collaboration given the momentum of the group and partnerships post MOU signing.

Data Analysis Plan

Case studies themselves are typically not representative of a “sample” and therefore are unlike experimentation procedures. In a case study, the goal of the investigator is not to make a statistical enumeration, but to expand or generalize theory (Yin, 2014). For the purposes of this study data was analyzed using qualitative analysis software by:

1. Transcribing the audio recorded interviews into raw transcripts,
2. Member checking the responses to the interviews with the stakeholders to ensure the validity of the responses,
3. Aggregating stakeholder responses and coding them using QDA Miner, a qualitative text analysis software from Provalis Research, and
4. Analyzing coded data using WordStat, a qualitative content analysis software package, also under the Provalis Research umbrella.

QDA Miner is a mixed-methods analysis tool that can be used to code and annotate documents such as interview or focus group transcripts. WordStat is a text mining analysis tool that allows unstructured data to be categorized and can statistically analyze data for relationships between categories or other variables including but not limited to responses to open-ended questions and interview transcripts. Using the two programs together provides the ability to show relationships between analyzed content to structured information both categorically and numerically as well as provide a more statistical approach to interrater reliability. WordStat uses the Jaccard Index also known as the Jaccard similarity coefficient to measure the similarity of sample sets. As discussed previously, observational, and archival data were also collected to add more depth and context to the aggregated responses of the stakeholder interviews.

Chapter 4: Results

Although not considered members of the original key stakeholder group, two members of non-governmental organizations, a member of Le Group Merian and a member of Cessac expressed an interest in participating in the efforts of the collaborative. They were interviewed as part of the case study. Their answers were included in the aggregated data collection.

Raw data collected from the interviews were analyzed using the qualitative software package ProSuite by Provalis research. The results were reported in aggregate form. A text mining analysis of all aggregated responses given in the one-on-one interviews provided the visual representation of the coalition in the form of word clouds. The size of the word indicates the frequency with which the word was used and signifies its importance to the emerging themes. Tables in this section display the themes that emerged during the one-on-one interviews based on keyword responses from the stakeholder group. Relationships between keywords and stakeholders are displayed in monochromatic heat maps, where the lighter color indicates the stronger association. The word cloud shown in Figure 4.1 below is representative of the overall view of the coalition with reference to the focus of the collaborative efforts of the emerging system.



Figure 4.1. A visual representation of all aggregated interview responses from the coalition. This word cloud represents the common vision for the emerging system.

Research Question One

How do stakeholders involved in an emerging system describe the current state of health delivery services in Haiti? Poverty exposes multiple barriers to health care access. Some patients cannot afford the low-cost hospitals available to the poorest in the community. A coalition member recounts:

There's a possibility that you won't be seen. There are small community clinics that are available. Most of them require a very, very *[sic]* small amount of money to be seen. But without any money at all, you know, those who have jobs, those who have some means of income are likely to be able to receive health care. But an overwhelming majority of people don't have the funds to be able to receive healthcare. They would have to, a lot of times, the free clinics are all that they have access to. So, when a mission team comes, they're full. And so, it's an all-day process. People are lined up around the building to be seen. (Internal Medicine Professional, personal communication, April 21, 2018)

When discussing the location of hospitals and wait times, one medical professional recounted an emergency birth in the back of a vehicle on the way to the hospital. A local resident in the neighborhood walked from their home to the doctor's residence because his wife was in active labor. It was approximately 10 o'clock at night. The distance from the man's house to the doctor's was a 7 to 8-minute drive. When they arrived to pick up the wife and take her to the hospital she was already crowning. There were complications with the birth (umbilical cord was wrapped around the neck of the baby and the baby stopped breathing), but the baby was delivered safely in the vehicle before they arrived at the hospital. When they did arrive, they found a crowd of people waiting to be seen. Although the hospital was understaffed, the mother and newborn

were able to be taken in and cared for. Details on how or why they were accepted in the hospital with a crowd of waiting people were not discussed.

This incident reinforced three things pertinent to infrastructure development. The first, is the need for more local medical facilities near residents of the community who don't have access to their own transportation. At 10 pm, securing transportation otherwise is nearly impossible. The second, is the need to expand emergency services in the form of a 24-hr 911 system, or the like. If the doctor had not been available and not had access to a vehicle, the birth could have resulted in a different outcome. The third, is the need for increased staffing in hospitals. Even at 10pm, there was a crowd of people waiting to be seen by a medical professional. The assumption is that they have been there for quite some time, as long wait times are a societal norm for hospitals according to the respondent. This is particularly true if the hospital is a charity or low-cost hospital. The need for hospital staff has been echoed in the emerging themes of the interviews about health administrators, but the recounting of this incident reinforces the need from the vantage point of a medical staffer.

Stakeholders in the medical field discussed high volumes of patients seeking medical care at the mobile clinics. One stakeholder explains how seeing hundreds of patients in one day is typical once word spreads among the community that a clinic will be coming to their area. They also explained the rationale for moving the clinic to different locations during the clinic "tour" of the area:

We will have people that have to walk. The most I've heard someone have walked is about 2 hours to come to our clinic. And I don't have to walk those hills in Haiti, but they are no joke; a 2—hour walk is no joke. I mean you're hiking. So, because of that when we do our clinics, we're not in one place. We will go to a church in an area and set up and run a clinic there for 2 days. That allows people that live close to the area to come to it and then we'll go somewhere that's what about 20, 15 [*sic*] miles away and set up shop there, and now we'll allow another couple folks [*sic*] that are in that region to come in there, and there is some overlap. So, sometimes people come back. But for the majority of the people. . . the folks in that region know that they don't have to go 30 miles by foot to get to us and that we'll have a clinic that'll be close enough to them that they can come out that way. It's important because the whole idea is to bring medicine to the people that can't get it. If you don't, they do without. (Emergency Medicine Professional, personal communication, June 06, 2018)

This stakeholder's experience substantiates the need for more mobile and transient clinics in the area to support to patients in need of care. The volume of patient visitors correlates to the information supplied by other stakeholders as they describe the long wait times at local hospitals and the inability of some patients to receive treatment. Hill et al, came to similar conclusions with reference to long wait times for patients seeking treatment (2014).

At one of the local orphanages an outbreak of internal parasites had become prevalent amongst many of the children. Intestinal issues such as parasites are among the top 10 health issues in Haiti. They are a frequent occurrence and completely preventable.

Causes include but are not limited to the mishandling or improper preparation of food.

In this case, the stakeholder describes the specific cause of the outbreak:

What's happening is with the children is a lot of abdominal pain that's been kind of going around. . . I believe that we're dealing with a worm infestation. It's a strong matter of public health. We're trying to get the kids to understand the importance of wearing shoes and why, and the relationship between the shoes and their health. Of course they're children and so it's hard for them to get the connection; and so we're trying to get the people who work with them, the staff. . . the importance of, the kinds of hygiene, the shoes— many of them don't understand that without the shoes and the eggs the parasites get into the skin through the foot and then they become infested with worms. So, we've been having a little bit of an outbreak here. We've been fortunate enough to get some medication to start and that's going to be given on a recurring cycle, even prophylactically. (Internal Medicine Professional, personal communication, April 21, 2018)

Stakeholders expressed the need for public health initiatives in the community. These initiatives include training community health workers to be able to go into their local areas educating the population on public health measures such as hygiene and other behaviors that aid in discouraging preventable diseases.

Adherence to medicine directions is another significant health issue with patients. Some patients have trouble paying for prescriptions and as a result end up rationing them. For example, if your prescription calls for 20 tablets of medication, but you can only afford to pay for 3 tablets, then, you go to the local pharmacy and purchase the three

tablets you can afford. In other cases, perhaps a patient has received an entire course of prescription for the month. Instead of taking it as prescribed, the patient may alter the dosing and take it as needed to stretch out the number of tablets received to make the prescription last longer.

One member of the coalition described the phenomenon as not necessarily derived from a cost of medication standpoint, but more so from an income standpoint:

From a US dollar standpoint, you may not see it that way. But from a Haitian Goudou dollar standpoint it's expensive for them because they don't make that much money, right [*sic*]. But I'll give you the equivalent in the US. Let's say you're a family of 5 and that household makes \$30,000 a year; which is not unusual, right [*sic*]. And then you have a kid who needs, you know, insulin and you could buy those insulin injections. That's expensive for that family, because you could be looking at a couple of hundred dollars per month, and that's just the medication. You haven't fed anybody, you haven't even put gas in your car to go buy the medication. So, Haiti has those kinds of constraints. The problem with Haiti is that is more prevalent in 80 to 85% the country because of the poverty they live in. In the US that may be concentrated in certain areas. I'm not gonna [*sic*] say in urban only because you can go into the Appalachian Mountains and find people that live very, very poor; much the same way. And we see them, patients, people coming back. . . you're asking why they didn't buy it and they just can't afford it. They are rationing it. They are supposed to take it twice a day but they're taking it once every 2 days because they're trying to make it last.

(Emergency Medicine Professional, personal communication, June 06, 2018).

Finally, although in agreement with the other stakeholders with the other issues that were discussed in the interviews, one stakeholder mentioned the affect the environmental issues had on the community. Trash pick-up was a major issue. The stakeholder mentioned the need for “receptacles on the streets for community use” and that there should be a regular pick-up and emptying of the trash in those receptacles. The stakeholder went on to mention that they hope that encouraging the residents to take pride in their community will also encourage them to have more pride and self-responsibility in taking care of themselves. They championed the idea of community health workers in the region that could go out into the different neighborhoods and educate residents on safe behaviors that could lead to a decrease in the incidence of preventable diseases. Mobile clinics were also discussed. This was in part due to the need for medical treatment, but also to encourage follow-up with public health education and preventive measures. The stakeholder also suggested billboards and community signage in public places such as street corners and near the trash receptacles. In general, this stakeholder looked forward to seeing the new graduates working in the clinics and hospitals, and in the community; and hopes that a partnership with the local government will take place in the future with an environmental scientist from Morgan State University to assist with refuse and remediation.

Twelve questions on the interview guide were designed to align with this research question. Responses to these questions from both medical and non-medical stakeholder groups resulted in the following themes: Medicine and Disease, Health Care, Collaborative Efforts, Mobile Clinics, Public Health, and Ailment and Resources which are detailed in Figure 4.2.

Key stakeholders in the study reveal their perceptions about the current state of health care in St. Marc, Haiti as currently insufficient to meet the needs of the people that it services. In reference to research question one, stakeholders overwhelmingly agreed (Jaccard Index/Similarity Coefficient = 100%) that improvements to health care were particularly needed in two areas: treating/reducing the incidence of specific diseases and increasing available resources. Respondents with medical backgrounds frequently mentioned the lack of medications like antibiotics to treat simple infections, daily multi-vitamins for general nutrition, and overall lack of access to and/or understanding of basic health information.



Figure 4.2. A visual representation of aggregated interview responses to research question one.

Observations during data collection about research question one shed light on what the root causes of the most prevalent health issues in Haiti could be, as highlighted by the CDC. This data also mirrors background information from the reviewed literature concerning the lasting effects of the historical economic destabilization of the country. Observational data from the transient clinic, decommissioned clinics, the environment, and other confounders provided clearer picture of the factors that contribute to the status of health service delivery.

Transient clinic. The mobile clinic set-up took place in Grand Fond, a city a few kilometers east of the St. Marc region. A more accurate description of the clinic set-up is a transient unit as there was no mobile vehicle with medical staff and supplies servicing the area. The clinic space was located on church grounds which was approximately a 30 to 45-minute drive from the main road. Patients attending the clinic came from all over the community, some walking more than two hours to be seen. Those who could afford to pay a driver arrived at the clinic by moto (motorbike). The moto took them as far as they could go before walking the remaining 45 minutes or so to get the clinic. Those who could not afford a moto ride arrived by foot. Grand Fond is a rural and mountainous area. Patients who traveled from the side of the mountain opposite the clinic location took short cuts (when they were permitted) through neighbors' yards, etc. to reduce their travel time of about 45 minutes to get to the clinic. Most made the trip dressed in their Sunday best which could be described as dresses and skirts, slacks, and hard bottom shoes. Typically, this is not ideal clothing for long walks or hiking up and down mountain terrain.

Medical personnel utilized the available spaces as needed for the various procedures. There were make-shift exam rooms for physicals and gynecological examinations. An open space under a group of shade trees served as the triage area where patients waited their turn to be seen by a medical professional. During their wait, a medical staffer or community health worker took vital signs and temperatures. On the day of this clinic there were a small group of practitioners available to see patients. This small group consisted of an ophthalmologist, a general practitioner, a gynecologist, pharmacy workers, and the private group who hosted the clinic, AMEVHA or Action

Missionnaire Evangelique d'Haiti. The AMEVHA group was founded with the purpose of providing social-economic services and medical mobile clinic services. As their focus is mainly areas in Haiti that are rural and typically not vehicle accessible, in some cases, not only to the patients walk to get to the clinic location, but the care providers must also traverse the terrain by foot; sometimes up to two hours while also hauling medical supplies. Materials that are often necessary to conduct medical procedures and that doctors typically have in their offices were unavailable.

A pharmacy was set-up in one of the church rooms in another building on the property. Medicines on hand were large gallon sized jugs of multi-vitamin syrup, antacids, vitamin C tablets, antivirals, antibiotics, Tylenol, and eye drops. Major ailments that monopolized the pharmacy inventory were skin rashes, gastrointestinal disorders, hypertension, and urinary tract infections. The need for medicines to treat these illnesses during the clinic was so high that a donation was collected by members of the collaborative so that a medicine run to the “big pharmacy” could be made. Unlike in the United States, prescription medications can be purchased at any time from the pharmacy and in bulk without a prescription. Both literacy and health literacy are an issue among the people attending the clinic. In the pharmacy, those tasked to dispense the medicine review the directions with the patients and then circle numbers and draw indicators on the containers to indicate when to take medication. The visiting pharmacist in the collaborative group assisted in the pharmacy as needed but mostly observed the innerworkings of the CHWs as they set-up their system of dispensing medicine. The flow of the pharmacy was efficient. The medicine was dispensed in donated, recycled medicine bottles and liquid containers. Community Health Workers wrote indicator

marks and numbers on the medicine packages to assist patients that were illiterate and unable to read the instructions. Patients were asked to repeat dosing instructions to ensure they understood how to take the medicine once they got home.

For patients who can read, they are prompted to read the directions on the container back to the dispenser to ensure understanding of how the medication is to be used. Some Elderly patients remain at the clinic after they have been seen and treated for their ailment. This is due to a lack of understanding that receiving the medication is the culmination of their medical visit. Signs about cholera prevention and other common illnesses are hung in the exam rooms and in the pharmacy. The pictures are large and there are few words; indicators of the low literacy level as well as direct visual marketing for efficiency during patient triage.

Members discussed the lack of medical records on file and how this causes issues with returning patients. Medical history is typically recorded to detail allergies, previous ailments, basic demographic information, etc. For a returning patient, lack of medical history could lead to misinterpretations on whether a patient is getting better from previous treatment or lead to incorrect dosing with chronic medications (Redelmeier, Tu, Schull, Ferris, & Hux, 2001). Members of the medical team within the collaboration discussed how administrative issues affect their ability to provide quality health care, their varied experiences with mobile clinics and preventable disease outbreaks, as well as how poverty directly affects the populations they serve. Medical records also contain valuable information for minors and the elderly such as a “personne responsable” or the person responsible for the patient. An elderly patient at the eye exam station whom at a glance was presumed to be in her 80s gave the doctor her age as 63. She traveled from

outside Grand Fond, alone, from at least 1 hour away by foot. She had no one with her to corroborate her true age or assist her throughout the triage process. This presented issues with her treatment and was expected to also cause issues with her follow-up.

During the clinic in Grand Fond the crowd of patients in need of health services for the day totaled approximately 80 people. This was considered a low turn-out.

Therefore, the need for participation of the members in collaborative was not as great as other clinic days. However, within the group of collaborators, the participation of the medical staff in the coalition was of greater need than the non-medical professionals.

One of the doctors in the emerging system, lent his own ophthalmic equipment to the eye doctor so that he was able to provide better care to those that needed his services. Later, the optometrist thanked him and indicated that having that piece of equipment available when they participate in future pop-up clinics would be very helpful in that exams would be able to flow more smoothly, and they can be performed more thoroughly. This supports aggregated stakeholder responses concerning the need for resources.

Non-medical professionals in the group used the opportunity to observe the flow of the clinic notating areas of the system that could be improved by either infrastructure and equipment or by increased personnel. Members of the coalition sat with members of the AMEVHA to discuss future partnerships that included access to medical supplies and funding. The proposed Memorandum of Understanding (MOU) between the UPAG and MSU was also discussed. Once solidified, AMEVHA would become an official partner under the MOU. This would give AMEVHA access to resources from other partners

within the collaborative. This new partnership creates the capacity for AMEVHA to expand their reach throughout the community.

While the clinic was winding down and the last patients were being seen, a member of AMEVHA provided a mini tour of the grounds where the clinic took place. This included visiting a piece of land that had a water that had been closed off and chained. For an unknown reason, members of the community contaminated the potable water rendering the well unsafe to drink from. AMEVHA would like to provide another water source. The estimated cost to dig another well in the same area is approximately \$200,000 USD; a financial barrier to the group. By joining the collaborative, AMEVHA would increase the likelihood of receiving local government funding for the well. The potential new partnership also introduces the potential for new community relationships with land developers. Particularly, AME-SADA, the entity who facilitated the construction of the mountain road which gave greater access to residents who needed to traverse the mountainous terrain.

Members of the collaborative agreed that efforts to address the medical access and medication issues could be executed by forming a coalition, but also indicated that the government should share some of the responsibility of providing health care services and investing in the people. Respondents further supported their perceptions of the government's role in health care by discussing the failure of the fee for service pay system. The average Haitian does not have a health insurance policy as it is considered a luxury afforded by the wealthy. Therefore, to be seen by a health care professional, all fees need to be paid up front before health services can be rendered. If a patient cannot pay for services, they do not receive care. Stakeholders describe government

responsibility as a more financially feasible option rather than to expect the burden of affordability to be garnered by the patients whom are already impoverished. Strength of association between responses was defined by key words including but not limited to clinic, supplies, care, money, ailment, and government as displayed in Table 4.1.

Health care in and of itself was the second most popular topic (Jaccard Index/Similarity Coefficient = 85.71%) during one-on-one interviews that took place among the stakeholders about research question one. Members of the coalition discussed health care in terms strengthening of infrastructure, stating that training professionals and paraprofessionals to fulfill the needs of poorly staffed hospitals and clinics is important for improving the quality of services received. Most public hospitals have manpower crises. The Ministry of Health is responsible for placing administrators who run the hospitals. Typically, these placements are health professionals trained and educated to provide healthcare services and not trained in how to run the administrative aspects and or manage the human resources processes. Stakeholders describe the mishaps that arise with lack of administrative personnel as leading to missing and/or incomplete patient medical histories and poor record keeping. Doctors assuming the role of Administrator as well as provider staff leads to increased wait times and inefficient triage processes. Members of the collaborative who are also medical personnel recall patients complaining of waiting upwards of two days to be seen at a public hospital. Figure 4.3 shows the similarity in responses from stakeholder interviews as a heat map. In reference to research question number one stakeholders are in general agreement with how they describe the status of health care in St. Marc, Haiti.

Table 4.1.

Emerging Themes Based on Keyword Responses During Stakeholder Interviews to Research Question One

Theme	Keywords	Unity	Freq	Cases	% Cases
Resource Ailment	Resource; Ailment; Administrative; Care; Clinic;	0.291	32	7	100.00%
Health Care	Supplies; System; Infrastructure; Health; Health Care;	0.266	31	6	85.71%
Coalition Government	Coalition; Government; People; Community; Care; Money; Health; Medical; Access; Public; Public Health	0.367	139	7	100.00%

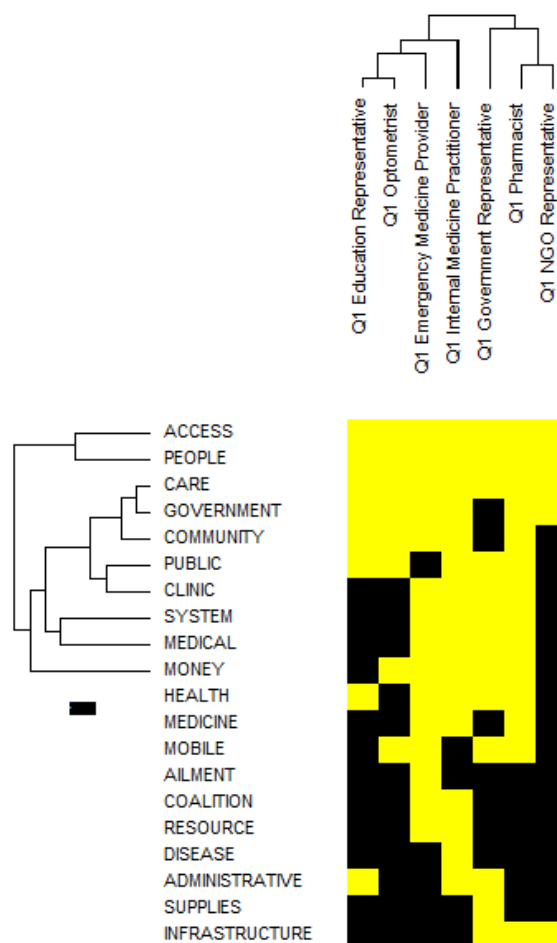


Figure 4.3. Heat map displaying the relationship between stakeholders and key words in interview responses to research question one.

Decommissioned clinics. Multiple clinics within the region were out of service. In some cases, the medical equipment was left behind. The labels attached were from other non-governmental agencies who previously provided funding for the upkeep and staffing of these buildings. The buildings themselves were still in working condition and were move-in ready for the next set of medical professionals. While on a tour of one of the clinics, it was explained that the reason for the shut-down was largely due to a lack financial support from the government. Essentially, the clinic was operating on community support and non-governmental organizations that began providing resources

such as medical equipment. The clinic staff was not a resource provided by the organizations and consisted of available local medical professionals. The clinic lacked the quantity of personnel to keep it running efficiently. This resulted in longer wait times for treatment and a reduced number of personnel in specific treatment specialties. Subsequently, patients stopped patronizing the clinic due to the long wait times for care and treatment. Without patients to be treated, the donations began to go to other areas to clinics with greater needs. This resulted in a reduction of “business” for care providers, which translates to less pay. This led providers to seek more gainful employment. Subsequently, the cycle continued in a positive feedback loop until the reductions in resources became so grave, the clinic became unsustainable and was eventually shut down.

The environment and other confounders. Unemployment is high in Haiti. This disparity is clearly seen in St. Marc, although parts of the region are doing considerably better than other areas of the country. There are many private vendors along the side of the road. The streets become crowded with vendors weaving their way in between vehicles to sell their goods when traffic stops. Items for sale include food, clothing, gadgets, and suitcases; to name a few. The heat of the day brings about water and other cold beverage vendors into the street. In front of homes are temporary store front set-ups. These private vendors serve goods such as full meals, medicine, and cigarettes. It appears that each person is their own boss. The tenacity with which they attempt to sell their goods gives the impression that the sale of these items is their sole source of income.

There is a serious lack of infrastructure; specifically concerning sanitation and water quality. The streets are riddled with litter of various types. For example, bottled water is available, but a more affordable option is the single serve water packaged in small plastic bags. Both containers can be seen discarded on the side of the road along with styrofoam food containers, food scraps, diapers, and the empty containers of household/industrial cleansers. There are no trash receptacles in sight. The trash is tossed out of car and truck windows or casually dropped on the sidewalk by pedestrians once its contents have been consumed. Some of the refuse is remediated by foraging goats. The rest visibly ends up in waterways and clogs drain systems. Walking barefoot is not a safe option, but it is a common occurrence; particularly among children. Certain street corners serve as make-shift landfills where community trash is piled in heaps. Along the side of the major roads leading out of the city and into the more rural areas are large trash mounds which are disposed of by fire. This brings a clearer understanding of the prevalence of respiratory and intestinal parasite health issues.

Restaurants do not serve many raw fruits or green vegetables. A salad with a meal consists of a slice of tomato and one or two leaves of iceberg lettuce. The average meal is either meat or fish with a side of starch such as plantain or rice and beans. This diet correlates to the prevalence of diabetes among the population. Some private land is good for cultivating but it scarce in the city. The earthquake that hit Haiti in 2010 was devastating for food resources. However, food security issues in Haiti began much earlier; in the 1990's when the Clinton administration (United States) initiated policies that would ease tariffs on food imported into Haiti such as rice. This damaged Haiti's ability to feed its people because it made imported foods cheaper to bring into the

country. This caused divestment from local farmers and crippled the local agriculture business. After the earthquake, food donations from foreign aid continued the divestment from local farmers. Subsequently, Haiti has become almost completely dependent on its food supply from foreign aid. Approximately 50% of the food supply is imported. Approximately, 80% of its rice, a major staple is also imported (Katz, 2010).

Those who live in less rural areas do not seem to find ways to mitigate the poor land surrounding their homes. Although the land itself is not suitable for growing food they do not seem to make use of the refuse around them to grow foods in makeshift pot gardens. Residents with homes in rural areas boast their own fruit and nut trees on the property. The group stopped at two private residences along the road trip into St. Marc. Each time, the home owners took pride in offering our delegation fresh produce from their yard trees. These private oases consist of coconuts, plantain, banana, several species of mango, and other fruits such as quinep and soursop. Some also grow their own cucurbit and leafy vegetables and raise their own livestock for family consumption.

Public restrooms do not have adequate hygiene items, mainly soap and toilet paper, but also including running water. It was not uncommon to visit a restroom in a restaurant and see a large barrel of water near the sink where a ladle was present for dipping out clean water and washing your hands either over the sink or into another bucket. If washed over another bucket, the second bucket was then used to flush solid waste down the toilet. Open, stagnant water is a breeding ground for mosquitoes and the diseases that they carry with them such as Malaria, Chikungunya, and Zika viruses which are prevalent in Haiti. In public structures without glass doors or windows, it was not uncommon to see mosquito larvae in the clean water barrels. Conversely, the more

expensive the restaurant (typically those situated within hotels) the more likely the experience would include running water, toilet paper, soap, and paper towels.

Poor water quality and sanitation has been an issue in Haiti since 1900 (Gelting, Bliss, Patrick, Lockhart, & Handzel, 2013). This is not long after the implementation of the independence tax imposed on the country by France. “Haiti is the most underserved country in the western hemisphere in terms of water and sanitation infrastructure by a wide margin; only 69% of the population has access to an improved water source and 17% had access to improved sanitation facilities in 2010” (Gelting, et al., 2013, p.665). Although, the tax played a role in the economics of supplying proper clean water access, foreign aid relief from multiple groups such as the Pan American Health Organization (PAHO) and the United States Agency for International Development (USAID) contributed to remediation. This aid was thwarted by political distress stemming from the toppling of the Duvalier “Baby Doc” regime in the late 80’s. The political instability scared off other would be benefactors for fear of contributing funds to a politically unstable climate. Help for Haiti’s clean water initiative didn’t resurface until the mid-2000’s. However, those efforts were overshadowed by the growing Human Immunodeficiency Virus (HIV) epidemic. At that time, Haiti became recognized for having the highest HIV prevalence in the Americas (Gelting et al., 2013).

In a water screening experiment that took place between 2012 and 2013, researchers found that 37% of screened water sites tested positive for fecal coliforms. After hurricane Sandy, these numbers rose to approximately 51% (Widmer et al., 2014). Providing alternatives for human waste disposal will be taxing. In a pilot study executed in Cap Haitien, an urban area north of St. Marc, researchers concluded that implementing

public and/or household waste containers to collect bathroom waste would tally at approximately \$24, 000 or roughly \$0.66 per pound of feces for a 13-week period. Household expenses were steeper, tallying at approximately \$19,000 or \$0.96 per pound of feces for the same collection period (Tilmans et al., 2015).

Environmental disasters such as earthquakes and tropical storms have exacerbated the poor soil quality issue in Haiti. Soil quality is directly related to water quality in that there are microorganisms that live in the soil which are responsible for removing pathogens from the ecosystem. These specialized organisms are tantamount to the first line of defense of water quality and ground water contamination. It is important to recall that Haiti already suffers from soil quality issues due to mass deforestation because of the historical economic destabilization imparted on the country by France and its independence tax. The lack of these organisms in the soil leaves shallow waters vulnerable to diseases and infestation. Many areas in Haiti host shallow water aquifers and water sources. This is particularly true for the areas of lime and shale near the border shared with the Dominican Republic (Wampler, 2011). During the tropical storm season, hurricanes spread water from shallow aquifers and causes additional disease outbreaks. Recent disasters such as the major earthquake of 2010, and the hurricanes in the subsequent storm seasons that followed have caused Haiti to see an increase in the spread of water-borne illnesses. Such has been the case with the Cholera outbreaks across the country after being introduced by Nepalese United Nations relief volunteers. Wampler (2011) of Grand Valley State University who has been studying Haiti's water quality since 2007 suggests that the geology and land make-up of the country will allow water-borne pathogens to be persistent in the environment. Wampler believes that the issue of

water quality is so critical that Haiti's limited resources should be diverted to water sanitation over vaccinations.

Research Question Two

How do stakeholders involved in an emerging system describe their experience in a collaborative effort? Nine questions on the interview guides were designed to align with this research question. Responses to these questions from both medical and non-medical stakeholder groups are depicted as a visual representation detailed in Figure 4.4. In general, stakeholders expressed excitement about being a part of the collaboration.

Interview responses to research question number two reveal four themes; the government system, collaborative resources, health care, and infrastructure development. There was unexpected theme carryover from question one as detailed in Table 4.2. This was unexpected because unlike research question one, research question two is directed specifically to each stakeholder's perceptions about their specific role in the coalition. Therefore, there was little expectation for similarity within this group of responses. However, when asked to describe their perceptions about being a part of the coalition, participants' thoughts about the government's role in the health delivery system remained a common theme. Respondents indicated that the government has a responsibility to the health of its people; a humanitarian role. The importance to have government buy-in with disseminating health messages to the community was heavily emphasized. While each stakeholder understands their role within the coalition, it was equally expressed that the government should also understand the importance of the role it plays in the health of the community. Keywords that support this theme include but are not limited to system, money, coalition, public, disease, health care, and development. Key stakeholders'

responses referencing government responsibility were just as strong and as similar as they were in research question one (Jaccard Index/Similarity Coefficient = 100%).



Figure 4.4. A visual representation of aggregated interview responses to research question two.

Table 4.2.

Emerging Themes Based on Keyword Responses During Stakeholder Interviews to Research Question Two

Theme	Keywords	Unity	Freq	Cases	% Cases
System Government	System; Government; Money; Coalition; Clinic; Public; Workforce; Community;	0.398	28	7	100.00%
Collaborative Resource	Collaborative; Resource; Medical; Community; Mobile; People; Health; Administrative; Public;	0.446	17	5	71.43%
Health Care	Access; Government; Disease;	0.444	76	7	100.00%
Development Infrastructure	Health Care; Development; Infrastructure; Workforce; Medicine; Access; Mobile	0.414	20	6	85.71%

Members of the coalition agree that the common goal for the collaboration is improving the health delivery services for the people. Both the medical and non-medical professionals communicated the importance of having access to healthcare and medicine for treatment. General views expressed by the coalition also included a desire to have the local government more invested in the health of the community. Suggestions for government support included financial investments that make running the clinics and hospitals more economically possible. Additional suggestions for government involvement included public campaigns for preventive health support to motivate communities. Stakeholders expressed the importance of individual responsibility for personal health outcomes and a specific need for more trained individuals to staff the clinics and hospitals. These trained staffers include both medical and administrative personnel. An explanation of individual responsibility for personal health outcomes included the importance of self-care and common-sense notions such as frequent hand washing.

Stakeholders had varying responses for approaches to capacity building and infrastructure development in the area (Jaccard Index/Similarity Coefficient = 85.71% and 71.43%, respectively). Respondents described infrastructure as not just physical hospitals and clinics, but also included administrative infrastructure within the hospitals and clinics. Figure 4.5 shows the similarity in responses from stakeholder interviews by a heat map. Overall, responses indicated three things: 1) stakeholders are aware of and confident in their perceived roles within the emerging system, 2) the capacity to implement the initiatives of the coalition exists, and 3) stakeholders believe the initiatives will be further enhanced by the MOU between the two universities (UPAG and MSU).

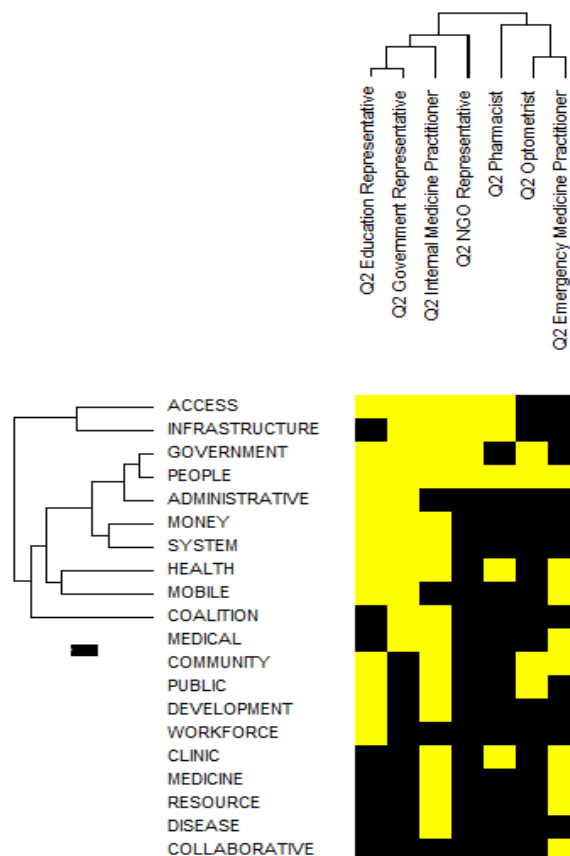


Figure 4.5. Heat map displaying the relationship between stakeholders and key words in interview responses to research question two.

Capacity building. One of the major outcomes that emerged from addressing research question two was the increased ability for organizations within the collaborative to facilitate the increase knowledge and skills of the potential health care personnel in the area. These improvements are the beginning stages of being able to expand health delivery services. Capacity building of this nature was executed via the building of partnerships and providing education and workforce development opportunities.

Partnerships. Members of the coalition see themselves in unique positions within the emerging system. Respondents reported their perception of the role of the educational system is to provide health administration education and training as one

solution to health delivery systems issues. This was a major contributor to the establishment of the memorandum of understanding between Morgan State University and Université Publique de l'Artibonite aux Gonaïves. In addition to helping the Haitian university develop a public health administration curriculum, Morgan State University was also requested to assist in creating more mobile health clinics as an alternate means to health delivery services. Under the MOU, medical and related health professionals, as well as non-governmental, faith-based organizations, and key community leaders affiliated with the university would contribute to curriculum development; which would in turn facilitate the training of the new medical staff (nurses and pharmacy technicians). Discussion of the formation of a partnership with MSU and UPAG first began in 2017. These discussions took place with then university President, Father Roldano Auguste and included background knowledge about the UPAG's educational offerings and how Morgan could be of assistance with the nursing, and health management programs with a specific focus on public health. In 2018, Father Auguste was promoted to a higher office within the Ministry of Education. His replacement, Dr. Jean Odile Etienne became the collaboration's new point of contact. Dr. Etienne welcomed the partnership with Morgan State University and quickly set forth to put the formal collaboration in motion. After multiple visits to the UPAG campus and several discussions, the decision to finalize the formal agreement between the two universities was complete. An English, Kreyol, and French version of the document was drafted to be fully understood by both parties and for archival purposes (J. Etienne, personal communication, April 26, 2018).

Future potential partnerships that will fall under the MOU could include the Yonide Pierre Foundation, which would increase the availability of health delivery services to

remote areas via mobile clinics; The Farmer's Alliance, which would enhance agricultural success in the regions; and the Senat de la Republique d'Haiti (The Haitian Senate), which would increase government investment within the community (F. Stuppard, personal communication, July 11, 2017).

As of June 6, 2018, the emerging system of collaborating organizations has been officially established (see Appendix H). This was solidified with a Memorandum of Understanding (MOU) signed by President David Wilson of Morgan State University and Dr. Jean Odile Etienne, President of the Université Publique de l'Artibonite aux Gonaïves. The scope of the partnership includes 8 major agreements:

1. The exchange of students between schools;
2. The exchange of faculty members for the purposes of teaching, research, or hosting faculty and students for the same purposes;
3. The joint development of public health courses, and public managerial and policy initiatives;
4. The organization of joint seminars, conferences, and workshops;
5. The exchange of academic program materials;
6. The collaboration with private and NGOs to provide community mobile health services;
7. The development of joint research and publications; and
8. The participation in a Study Abroad program by students enrolled at either university.

Through an indirect partnership with other global organizations such as Unite for Sight, Morgan State University has been able to distribute medical supplies to the Action

Missionnaire Evangelique d’Haiti and The Yonide Pierre Foundation groups. Although this partnership originated with organizations within the St. Marc region, future partnerships have the potential to be established as far-reaching as The Justinien University Hospital in Cap Haitien (L. Brown, personal communication, July 6, 2017).

The signing of the MOU between UPAG and MSU has also given breath to other potential cross-sector collaborations with other HBCUs such as Claflin University. There is potential to continue expanding health delivery services in Haiti through public health information systems. Ideas that support creating a public health information system that could help facilitate work to improve public health include GeoPoll surveys using cellular devices to assess patient health concerns, setting up syndromic surveillance systems, and working with Sam Roberson (Claflin University) to establish GPS mapping of public health infrastructure throughout the country (L. Brown, personal communication, July 6, 2017).

Education. Morgan State University’s School of Community Health and Policy has and will continue to provide support and advisement in the establishment of the Public Health Administration/Policy Development Program, as well as the Nursing Program at UPAG. Students and staff from both universities will participate in the exchange of information and education programs. As a result of this collaborative partnership, within the very near future (two to three years), UPAG will be conferring diplomas/degrees to its first graduating class under the MOU. The graduating class will be inclusive of public health Nurses, Managers, Community Health Educators, Health Informatics Technicians, Pharmacy Technicians, and Environmental Health Technicians. There are now fifty students registered for the nursing program at UPAG.

An indirect result of the MOU between MSU and UPAG are two additional partnerships. The first is a newly forming international partnership or consortium made up of six local universities that met in St. Marc, Haiti during the fall of 2018. These universities came together to meet with students and staff from each of the respective universities to create a crisis management program. Dr. Etienne (UPAG) will be spearheading this initiative. The second is the Leadership Institute which will be headed by Dr. Alex Charles. It will be an educational program designed to train paraprofessionals as technicians in emergency preparedness, prepare CHWs to assist the community with nutritional support, and prepare CHWs to assist the community with follow-up to medical care and treatment they have received after visiting a hospital or clinic. Paraprofessionals enrolled in these programs will earn the equivalent of an Associate's degree in their respective fields. The Leadership Institute may also serve as a feeder program into UPAG or one of the other local universities that offer four-year degrees. This will provide a sustainable pipeline of paraprofessionals into higher education and subsequently, into the workforce.

Workforce development. The graduates of the UPAG hospital administration program will provide the support staff necessary to keep clinics and hospitals running efficiently. New graduates will be essential for currently operating hospitals and clinics as well as the future clinics that plan to open. These staffers will be qualified to implement record keeping systems and other support services to enhance the effectiveness of healthcare delivery services in the area. With the implementation of an enhanced nursing program and new public health program at UPAG through MSU, the

university will be able to become a feeder school for experienced medical professionals and paraprofessionals into the St. Marc health care community.

Infrastructure development. Another major outcome that emerged from addressing research question two of the study is the enhancement of basic foundational services to the St. Marc region of Haiti. Local government showed an interest in the MOU between UPAG and MSU and how that partnership would benefit the infrastructure of St. Marc. Members of the coalition met with the Mayor, staff members, and environmental specialists. Topics discussed include waste management, urban planning (city management plan), public health education initiatives, reforestation, and environmental restoration. The increased development of infrastructure emerging from this case study can be categorized as physical infrastructure, social infrastructure, and sanitation.

Physical infrastructure. Re-opening decommissioned clinics in the St. Marc area is less economically taxing than building all new clinics. One of the decommissioned clinics visited during the study is expected to open in the summer of 2019 (see Appendix I). Construction on the clinic located in the mountains of Delice has already been completed by the AME-SADA with the construction of a third clinic set to begin in Lanzaç. While construction of new roadways in remote areas has not begun, there are discussions on next steps to begin the next phase of expansion.

In addition to re-opening decommissioned clinics, deploying more medical staff to remote areas and setting up mobile clinics is another enhancement to the physical infrastructure of the area. One member of the medical team expressed the following about their role in the coalition:

So, for me, again when I first decided to come along, I had no expectations other than to try to help and to see what other areas of Haiti in terms of healthcare mobile clinics were ongoing. That's really my biggest focus. I wouldn't necessarily say a passion, but I would say focus. Just trying to bring health care to areas that are primarily underserved; where mobile clinic / health clinics can fill gaps for people outside the hospital's ranges. . . so I think the group's effort, I'm very impressed with it from an educational standpoint. What do I see myself in it?. . . I'm not a desk type of person. I'm a doer so my interest is really to go and practice medicine not to sit around and talk about it and say here's what I like to do why don't we try this. I can say that I could bring ideas to the table, but I like to jump into things that are functional and if they're not then we can take what's working and make it better and make it more efficient. So, my goal overall is if these clinics that we've come across become sustainable and they actually look like they may need resources such that other doctors come in at different times to try to help you out then that's where I see my role.

Another member spoke to their excitement with joining the ranks of medical personnel who are already working in the clinics and hospitals in the St. Marc area:

Absolutely! I've been a (sic) just retired after 39 years of medicine and although I'm retired from being employed and getting a formal salary, I don't ever want to stop practicing medicine. So, I would very, very much love to participate in a health care delivery setting even in terms of infrastructure development. There's a lot going on that I've learned about in all the years that I've been coming to Haiti. There's an Adventist hospital. There's a trauma hospital. The University of Miami has

several sites here. It's been encouraging for me and exciting for me to see what's already been taking (sic), what's already happened.

Local government would like their participation with the collaborative to include activities such as adding more medical equipment to the hospitals and clinics. This also includes increasing the presence of mobile clinics to rove about remote areas and the ability to make medications more readily available to the patients. When asked how they envision the enhancement of physical infrastructure to the area one respondent replied:

More medical equipment. It's not available to them they say they have to go to the pharmacy and get them at very expensive prices. . .the mobile clinics are very important for the population because a lot of them don't really have the health (sic) and at least the mobile clinics will come to them and they're happy for that because they know that it's difficult when they go to the hospital. They will be properly treated. So, the mobile clinics are very helpful (personal correspondence, local government official, April 26, 2018).

Social infrastructure. The local government expressed that it would like to be more involved in public health campaigns in the community to encourage self-accountability. These campaigns would include signage and billboards about the importance of hand washing and safe sex practices, environmental issues such as community responsibility and proper trash disposal, as well as community reforestation efforts. Local government also emphasized the need for more mobile clinics to go out into the community to reach residents that would otherwise not be seen by a medical professional. This includes the use of community health workers and fostering healthy relationships between health professionals and the community.

One member of the coalition shared personal reasons for wanting to be a part of the collaborative, and how their personal impact as a member of the coalition would have a social effect on both the community and the coalition:

Because I'm interested in historical disparities, historical issues of oppression, and disenfranchisement I feel like that's somewhat of a personal calling, and the responsibility as a person who has the ability as a resident of a country with the means to do it, and this is a great place where there is already a lot of people already working. So, it fits with me not having had any experience at this point just to grasp on to learn as I attempt to navigate this new aspect of what I'm doing with my life. . . Well, the most obvious one would be just in devising; developing training programs for pharmacy personnel. . . I have a Master's degree in theology so at times, asking questions that bring people to understand what's informing their motivations, what is shaping, what's animating, and what their stated goals are. . . If they're really bringing honor to what they're saying; that kind of thing (sic).

Sanitation. The local government also expressed the importance of tackling environmental issues such as proper trash disposal. The population was reported as ~350,000 and overpopulated with growth exhibiting that of a J curve. For every 100 inhabitants, approximately 85 live in the city, hence the overpopulation issue. With the population growing so rapidly, the Mayor's office sees the following specific issues that need to be addressed:

- Waste Management (current sanitation system is not sufficient for the population capacity)
 - lack of trash trucks

- lack of fork lifts
- the need for upgraded trash collection system
 - equipment for enforcement
 - partnerships with other companies
 - recycling programs and incentives
 - composting programs and incentives
- food safety issues within the community (food borne illnesses)
 - potential re-opening of community slaughter house businesses

Research Question Three

How do stakeholders describe the intended impact of this newly emerging system? Interview responses varied in reference to the impact of the various efforts of the coalition. While some member responses focused on specific action items such as deploying more mobile clinics into the community, others focused on government relationships and expanding partnerships to other organizations in an effort to support the sustainability of the group's efforts. Ten questions on the interview guide were designed to align with this research question and are detailed in Table 4.3. Responses to these questions from both medical and non-medical stakeholder groups are depicted as a visual representation in Figure 4.6.

The group is clear on the on the expectations of the emerging system. Stakeholders unanimously view outcomes from the coalition as providing an increased capacity to build, re-open, and staff clinics as well as increase support of mobile and transient clinics in the area (Jaccard Index/Similarity Coefficient = 100%) as displayed in Table 4.3. Other outcomes include reducing the incidence of preventable diseases

(Jaccard Index/Similarity Coefficient = 71.43%); increasing health care resources to decrease the incidence of disease (Jaccard Index/Similarity Coefficient = 28.57%); and focusing on public health initiatives in the community (Jaccard Index/Similarity Coefficient = 85.71%). Although when viewing Table 4.3 it appears that the coalition does not believe that reducing the incidence of disease is a core value of the group, when reviewing the relationship between keywords and stakeholders on the heatmap in Figure 4.7, you can see the medical professionals of the group have a strong correlation to this theme. Additionally, the relationship between their keywords is strong, indicating that not only were their responses aligned by theme, they also expressed their perceptions in the same way, using similar or identical vocabulary.

Coalition members described their overall experiences as positive and look forward to continuing the work of the collaborative. One member offered the following:

I think the collaboration is excellent. I had always heard about these types of things in the periphery but had never seen one really being massaged and worked and at least understanding what it took to develop it. I'm very impressed because it's a lot of pavement walking to make it happen. I'm serious. . .It's a different kind of hard work and has a lot of value into it. (Emergency Medical Professional, personal communication June 2018).



Figure 4.6. A visual representation of aggregated interview responses from research question three.

Another member opined on their perception on how to increase the presence of public health initiatives in the community:

I believe that the government has to take a more humanitarian role. The Department of Health has to understand the importance of health messages, of providing the people with health care and understanding why. The governments, the people in power need to understand what their role is in in peoples' health. . . That looks like taking some of these messages, the cigarette messages off, out. Most of the billboards. . . The billboards that I've seen promotes cigarette smoking. The whole public health; the whole matter of public health entails training developing; being able to begin from the ground up. We have us. We had a strong presence of doctors without borders we had mercy ships and all those kinds of things; outside countries coming in to provide these kinds of services. With the benefits of the government helping, I believe there needs to be a very, very prominent push to have young

people enter into health care on all aspects of health care (personal correspondence, internal medicine professional, April 21, 2018).

Table 4.3.

Emerging Themes Based on Keyword Responses During Stakeholder Interviews to Research Question Three

Theme	Keywords	Unity	Freq	Cases	% Cases
Medicine Disease	Medicine; Disease; Economy; Hospital; Trauma; Money; Supplies; Coalition;	0.231	48	5	71.43%
Mobile Clinics	Infrastructure; Mobile; Work; Government; Clinics; Haiti; Mobile Clinics;	0.279	77	7	100.00%
Clinic Time	Clinic; Clinics; Time; Coming; Mobile; Able; Care; Health Care;	0.352	139	7	100.00%
Health Care	Health; Care; Access; System; People; Public; Government; Health Care; Health Care Access;	0.368	272	7	100.00%
Resource Ailment	Resource; Ailment; Collaborative;	0.241	9	2	28.57%
Public Health	Workforce; Development; Community; Public; Hospital; Money; Mobile; Public Health;	0.289	49	6	85.71%

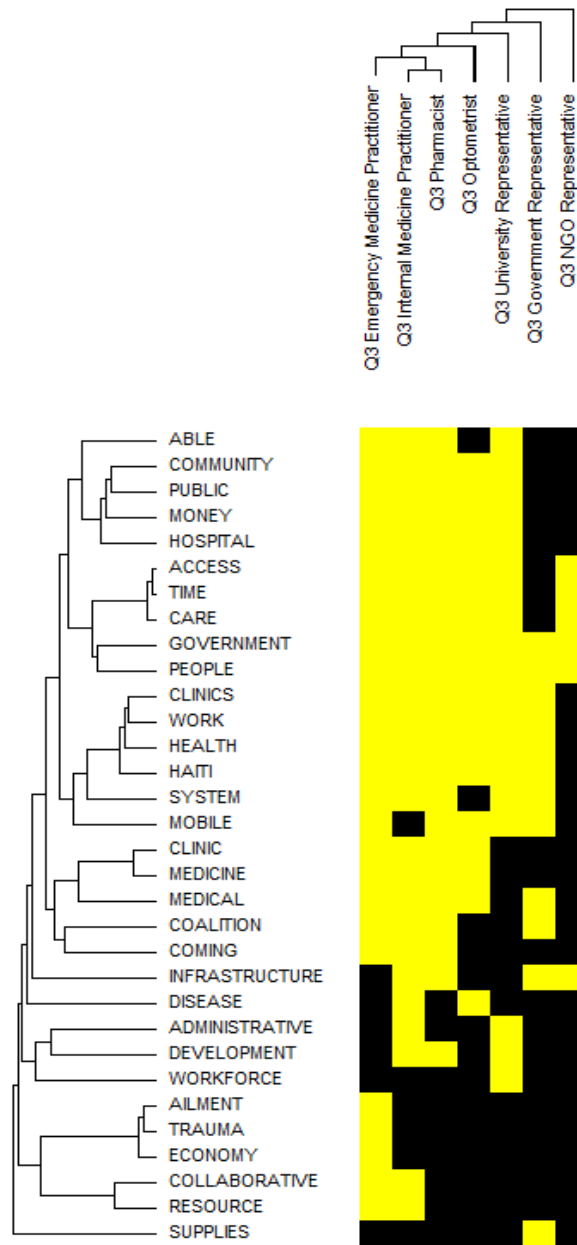


Figure 4.7. Heat map displaying the relationship between stakeholders and key words in interview responses to research question three.

Chapter 5: Discussion and Conclusions

Discussion

The activities of the key stakeholder group, referred to in this study as the “emerging coalition” involved critical planning phases and application experience in the study’s focal region which is St. Marc, Haiti. Stakeholders within the emerging system met often, through various communication strategies including in-person group meetings, teleconferences, and e-mail. Recorded member interview responses revealed a correlation between keywords used by the collaborative when discussing their perceptions of the current state of health delivery services, their role in the collaborative, and their expectations of the impact the collaborative will have in the St Marc area. This supports the narrative that the stakeholders shared similar visions for success with respect to the three research questions this case study sought to address. It also supports the concept that utilizing a coalition for capacity building can be used in a myriad of diverse settings ranging from communities to clinical settings (Frieden, 2013; Crisp et al., 2000; and Madsen, 2016).

Critical planning phases in conjunction with the application experience resulted in several emerging outcomes. The most prominent outcome by the end of this case study being an official Memorandum of Understanding between Morgan State University and The Université Publique de l'Artibonite aux Gonaïves. Through this partnership, other relationships have formed, thus expanding the capacity of the emerging system. The expansion of the emerging system also increases the capacity of health service delivery to areas of Haiti outside of the region of St. Marc. This also greatly increases the on-going

infrastructure development collaborations between inaugural and new partners joining the collaboration.

The purpose of this study was to understand key stakeholders' perceptions of the current status of health delivery services in St. Marc, Haiti and how members of the stakeholder group worked together to enhance the current system to be more effective in the delivery of health services. Haiti is an extremely impoverished country. It is known as the poorest country in the western hemisphere. As such, resources are limited, particularly when it comes to health care. Poverty makes access and affordability a major barrier to receiving health care treatment. Haiti health care runs on a fee for service system. Stakeholders revealed that to be treated, most patients must pay out of pocket expenses. This frequently results in patients attempting to visit the more affordable public hospitals or local clinics. However, location and lack of resources contributes to the various barriers to access to health care in this area. Traveling to a public hospital may be difficult due to the distance of where residents live with reference to remote areas outside of the city. Findings in St. Marc were like that of Penchansky & Thomas (1981) in that financial issues are not the only barriers to access. This was seen at the mobile clinic in Grand Fond. Many of the patients that were seen at the clinic walked a minimum of 45 minutes to get to the site. Others walked upwards of two hours to be seen.

The impact of infrastructure contributions can be quantified. The current infrastructure of the health delivery system in St. Marc poses many barriers to access; specifically pertaining to health care administration. Public hospitals are often understaffed and over crowded, resulting in long wait times, and inefficient processes.

Local clinics were also reported as understaffed and/or undersupplied with medical equipment and medications. This is largely due to lack of resources, including administrative staffing which results in local clinics often becoming decommissioned. This also results in inefficient administrative policies.

Various methods were used by the collaborative to address these specific health service delivery issues in the St. Marc region. To address issues surrounding access, the collaborative supported mobile clinics that traveled to remote areas within the region. The mobile clinics functioned as mini health centers, offering a range of medical services such as wellness screenings, eye exams, gynecological screenings, and a myriad of acute care services. These clinics were roving entities that traveled to areas of the region with populations that would otherwise go unserved. The clinics also provided a little to no cost alternative for prescription (such as antibiotics) and over the counter medications (such as multivitamins) to members of the community. There is a high incidence rate of both communicable and non-communicable diseases in Haiti. Extrapolating from CDC data, approximately 40% of the listed diseases prevalent in the area are preventable. As detailed in the observational data, lack of proper sanitation and water quality infrastructure greatly contribute to these diseases. Additionally, patients often do not have the background to enforce healthy behaviors and best public health practices within the community. Expanding health delivery services in St. Marc requires that this core issue be addressed in tandem with the other issues being addressed by the coalition. The expectation of adding preventive care to the current system includes reduced incidence rate of disease, which may eventually lead to decreased prevalence of disease. Reducing the prevalence of disease is important, particularly when the area has a low rate of cure,

which is the case in St. Marc. Implications may include fewer visits to the health care provider, thereby lessening the strain on the overall health delivery system. In this case, strain on the system can be defined as the diversion of resources (funding, supplies, and manpower) from an already resource poor area. This is a similar concept to Morgan et al. (2007) as well as Schell (2013), and Berawi et al., (2017) wherein they deduced that preventing chronic illness and reducing its prevalence in the community is tantamount to sustaining a health care system.

Public infrastructure can be an engine for growth for products and health services (Bossel, 1999; Wang, 2006; and Agènor, 2009). To address issues with respect to decreased administrative staff, an administrative training program was developed. The administrative training program is a direct result of an established partnership between two members of the collaborative; Morgan State University (MSU) and The Université Publique d'Artibonite aux Gonaïves (UPAG). Within the partnership, Morgan and UPAG will participate in the exchange of students and faculty for the purposes of the joint development of public health courses and initiatives including the training of community health workers, health administrators, and Health Youth Leadership programs. Graduates of these programs are expected to fill the employee gaps in understaffed hospitals and clinics within the region as well as participate in community health outreach as needed. The ability for trained medical staff to be present in the community on a regular basis will reduce the need for long distance travel to hospitals and clinics and will circumvent this particular barrier to access for some residents in this area. Additionally, with the community outreach portion of this initiative, community health workers that are specifically trained to educate on basic public health safety

practices will have a greater ability to reach larger sections of the communities in which they live, in this manner spreading public health education more efficiently and effectively within the community. In turn, the community will begin to develop a trust for health workers as these workers will be trained representatives from their own communities; while they are simultaneously actively participating in the reduction of preventable diseases in their area through the local public health programming they will be receiving.

To address issues with the lack of medical equipment available for the mobile clinics, members of the collaborative reached out to affiliates within their networks to acquire donated items that were either new or in good working condition. At the time of the study, that equipment included medical devices with the intended use for eye exams and various over the counter pain relief medications and vitamin supplements. It is important to note that donations of equipment, medications, and the like have been in kind due to the partnership being in its beginning phases of implementation. However, this initiative will not be a dependency situation. The goal is to make Haiti (St. Marc) self-sufficient in that this new system can sustain itself. Entering into paternalistic relationships with foreign aid organizations was one of the impetuses of the creation of this emerging system. Although the early stages will be dependent on donations to get the system on its feet, future evaluations will focus on the sustainability of the system in that workforce development will include not just the training of paraprofessionals to staff the medical centers, mobile clinics, and hospitals; but will also train personnel in the maintenance of medical equipment and building engineering. Trained personnel will eventually include technicians and mechanics that will be trained for positions in the

health care system that include maintenance of mobile clinic vehicles and medical/lab equipment, masonry, HVAC, and computer programming/electronic medical recordkeeping. This will greatly contribute to the enhancement of the health system's infrastructure. This will support program sustainability in that it will provide jobs locally as well as reinforce the system by having trained professionals to keep the equipment and buildings up and running. With specific reference to low-fee pay for treatment centers, more efficiently running centers should lead to improved patient wait times. Improved patient wait times should increase the ability for treatment centers to run at capacity, thus generating increased income for the facility. In time, with the initiative running treatment centers at capacity, the income generated from a steady stream of patients should render the treatment centers financially sustainable no longer at risk of shutting down due to lack of patients or funding.

Conclusion

A review of the data collected throughout the process of forming the collaboration included meeting minutes and notes, e-mail traffic among members of the collaborative, as well as notes and commentary from conference calls. Data within this collection of information shows that the group was heavily focused on strategic partnerships. These partnerships included forming relationships with other organizations, gaining access to resources such as medical equipment and other supplies, and providing the infrastructure for education and workforce development. Members of the collaborative traveled to several parts of the country to establish these strategic partnerships including Deschapelles, Caberet, Gonaïves, St. Marc, Lenzac, Les Cayes, Grand Fond, Cap Haitien, and Port-Au-Prince, Haiti.

Multiple meetings between the Office of the Mayor and the coalition took place between 2017 and 2018. Topics of discussion included reforestation efforts to prevent further erosion damage from water run-off and flooding during hurricane events as well as investing in paved roadways. During the visits across the country, the coalition was able to engage in the operation of multiple mobile/transient clinics and visit the site of future partners such as the Go Haiti Orphanage in Port-Au-Prince and the AME-SADA mountain clinic in Delice, Haiti. The MOU between UPAG and MSU is the foundation from which all future partnerships will evolve. From this strategic partnership all other interorganizational relationships to date were formed. The goal is to maintain these strategic partnerships and add others over time. The increase in partnerships will facilitate the expansion of health service delivery to other parts of Haiti.

As previously described, cross- sector transdisciplinary collaboration involves resource sharing and the exchange of knowledge and information within a collaborative made up of members of varying disciplines. In this case study, cross-sector transdisciplinary collaboration included strategies for capacity building and infrastructure development. With respect to the emerging system of collaborators in St. Marc, Haiti, this new approach to transdisciplinary research has been the embodiment of systems-thinking. Thus far, the collaborative has been successful in capacity building by focusing on the core issues surrounding health service delivery in St. Marc. The coalition has already begun to see immediate outcomes after initiating partnerships that will have exponential growth and development in the St. Marc region, encouraging education and training, and supporting workforce development based on the formed partnerships. With respect to infrastructure

development, the coalition is currently discussing future projects to get decommissioned clinics in the area back up and running. There is also discussion of constructing additional roads to make travel to hospitals and clinics easier for residents from remote areas.

Daunting public health cases require joint team effort from academic researchers, clinical, and public health practitioners to identify and implement sustainable solutions that work in the real world (Ammerman, Smith, & Calancie, 2014). Using a systems thinking approach to establish a coalition with the purpose of expanding health delivery services in a third world country has been to date, successful. This coalition is the first of its kind in St. Marc, Haiti and is unlike other NGOs who also participate in public health work there. In just under two years, the coalition has collaborated to launch an official partnership that has resulted in the expansion of two academic programs. One of those of those programs will be graduating its first class of professionals in the year 2020. From one strategic collaboration between two universities numerous partnerships in the St. Marc region have been formed with other health service organizations. After seeing the productivity of the local partnerships taking place, other organizations have started to show interest in joining the coalition. The emerging system of collaborators is on its way to establishing multiple partnerships throughout the country.

Major findings of this study support the application of the systems thinking approach to expanding health delivery services. Emerging outcomes of utilizing this approach include formerly established partnerships that have led to increased capacity building and infrastructure development. Having a diverse group of stakeholders within a collaboration is important when addressing public health using a systems thinking

approach. Using a systems thinking approach, while other members are contributing to the expansion of health delivery by increasing capacity, building physical infrastructure in the form of new clinics or re-opening decommissioned clinics, and building systems infrastructure by training professionals and paraprofessionals to fill under staffed positions, the medical professionals in the collaboration addressed the problem from a different perspective; which was to treat the prevalence of disease within the community and implement preventive care into the system. The collaborative is addressing core issues within the current health services delivery infrastructure, instead of focusing on specific outcomes.

For the purposes of this practice-based study, using a cross-sector transdisciplinary collaborative approach to form this coalition provided the opportunity to examine the relationships within an emerging system that set forth to increase capacity building and to develop infrastructure in an area that is resource poor. Within this coalition, all entities outside of UPAG and MSU are considered cross-sector partnerships. Each entity is from a different professional background, with niche specific resources that contribute individual expertise as a collaborative group. Data collected from this exploratory case study may be extrapolated to a replicable global health model. Countries with similar demographics and health outcomes may find that using the systems thinking approach as it was applied here will give similar results. Furthermore, the results of this study may serve as the foundation to longitudinal data collection; which in turn may provide greatly needed sustainability data that can be used for future research and best practices for implementation of this system of health care delivery. With respect to cross-sector partnerships involving other Historically Black Colleges and Universities

(HBCUs), Morgan State University can serve as the model for replication, as the MOU with UPAG has set the tone for additional collaborations whether they be with other schools or additional cross-sector transdisciplinary collaborations in the expansion of health service delivery.

Future research. Future research on this cross-sector transdisciplinary group of collaborators should include a 5-year follow-up and evaluation of the implemented programs including graduates of the administrative and community health programs as well as their subsequent placement in the workforce. Evaluation measures should also include a record of patient capacity and generated income to medical treatment centers affected by the emerging system. Additional evaluation should be given to each emerging outcome as an annual audit of the collaboration. Emerging outcomes can include but are not limited to changes in the recorded local incidence rates of communicable and non-communicable diseases, number of patients serviced at mobile clinics, and residential attendance at local public health education programs within outreach communities. Follow-up could include the measurable impact of the emerging outcomes on health delivery services and the effects on health policies in the St. Marc region.

Sharing of emerging outcomes. The coalition is still an emerging system. Therefore, the outcomes presented as research findings in this study are not finalized and are on-going. Sharing the findings of this study with various public health groups such as the American Public Health Association and the National Association of Health Services Executives is expected. The dissemination of the findings may be in the form of papers published in archival journals, conference papers, exhibits and presentations, and

workshops respective to those organizations. This study is taking place outside of the United States. Therefore, the results may also be interesting to other public health advocates in the global health arena.

Entities such as the G4 Alliance, which is an international organization of surgeons who travel the globe performing surgeries for the underprivileged may also be interested in the findings of this study. In 2015, the World Health Assembly, hosted by the WHO voted unanimously that Universal Health Care must include coverage in four areas which are: surgical, anesthesia, trauma, and obstetrics (About the G4 Alliance, 2018). The vision of the G4 Alliance is to provide access to surgical care to eighty percent of the world by the year 2030. Implications from this study and the model may prove valuable to this study of general health care delivery on a larger, global scale about how surgical access is delivered. The G4 Alliance and its member organizations are already in collaboration efforts with local governments and key stakeholders around the world to build the capacity to provide national surgical plans. Although St. Marc does not have the infrastructure in place to support the initiatives of G4 currently, the outcomes of this emerging system are on-going. The capacity to build this type of infrastructure is expected to improve as the collaborative expands its partnerships and the region grows more sustainable to support this type of infrastructure.

The Global Health Council is an organization made up of a diverse group of cross-sector collaborators that engage with the global health community. Their advocacy arm focuses on meeting with government leaders and other institutions to keep global needs visible and seek investment into global health policies and budget. This group also works with partners in the global health community to emphasize the importance of

funding global health missions and other important requests from global health organizations. Sharing the results and data with this group may facilitate funding opportunities in other areas of the world where this model can be replicable and sustainable (Global Health Council, “Our Members,” 2015).

PATH is an international, non-profit organization dedicated to global health innovation. This group participates in both partnerships and advisement to various groups that promote the acceleration of global health equity (PATH, “About” 2019). This platform is directly correlated to the purpose of this study. PATH develops partnerships locally as well as internationally helping to improve infrastructure and supply systems. This includes cross-sector relationships with varying institutions such as businesses, investors, and grassroots organizations. Local leaders help to attract members of the community to be trained as skilled health workers. The model utilized in this study may be valuable to this group as they continue to improve infrastructure in areas with similar health outcomes as St. Marc.

Finally, The Black Doctoral Network may find interest in the outcome of this study. The Black Doctoral Network is an organization of graduate students and professionals with terminal degrees across various disciplines. The organization also includes sub-groups divided by research interests. Because this study is being conducted in a majority black country, and the current pan-Africanism movement is becoming increasingly popular among African-Americans in the diaspora, the results of this study may draw more visibility among black scholars; which could lead to increased interest and funding opportunities for future research in this area.

Limitations. Limitations to this study include the use of observational data collection. Although helpful in painting a clearer picture of why results may present themselves as they have, observational data is subjective and open to observer bias. Additionally, this data set is small with reference to key stakeholders. Although the data collected may result in a model for infrastructure development in other countries with similar demographic, economical, and health backgrounds, the data collected with this stakeholder group may not be readily generalizable to the stakeholders in all countries within these groupings. Lastly, the interviews were conducted using open-ended questions and were semi-structured; in that each question served as a prompt before the stakeholder shared their personal perceptions of the coalition and the current status of health care access in St. Marc. The answers provided by the stakeholders are opinions based on personal experiences within the emerging system and may not necessarily translate to the same perceptions and experiences of stakeholders in other coalitions within countries that have similar socio-economic and health outcomes.

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Appendix A

A Sign Protesting the United Nations Cholera Epidemic

Infected volunteers from the United Nations brought Cholera to Haiti during the aftermath of the Earthquake in 2010. The impact of the spread of the disease had been so severe that Haitians actively protested the presence of the United Nations until they claimed responsibility for the spread of the disease. This is a banner hung across the middle of a busy street in the urban area of Port-au-Prince in April of 2017.



Appendix B

Erosion

In June of 2017 the participant observer visited areas heavily impacted by flooding in the St. Marc area. This is an example of the lasting effects of deforestation and mass agriculture as a result of the economic destabilization of Haiti when France imparted the “Independence Tax” in response to the Haitian revolution to end slavery. The lack of tree cover has left parts of the land vulnerable to erosion after heavy rains and the tropical storms that pass through the country during their annual hurricane season.



Appendix C

A Newly Constructed Road Through the Mountains of Delice, Haiti.

This roadway was completed in 2017 by the AME-SADA. Previously, traversing the mountain to reach the city would take mountain residents approximately six hours going one-way. With the construction of this re roadway through the mountains, the time has been reduced by half; making the trip closer to three hours.



Appendix D

Interview Protocol – Medical Professionals

Interview # _____

Date _____/_____/_____

Script

Good Morning/Afternoon. My name is Shenell Tolson. Thank you for agreeing to this interview. I am conducting research that is exploring how a community coalition can be used to expand health care delivery services to St. Marc, Haiti. You have been chosen to participate in this interview based on the work that you are currently doing within the community.

With your permission, I would like to tape our conversation so that I can be sure that everything you say has been recorded accurately. There are fifteen questions that I would like to ask you. The interview should take approximately 1 hour to complete. However, you will set the pace. There is no correct or incorrect answer to any of the questions. You do not have to answer any questions that make you uncomfortable. You may stop the interview at any time. Any data reported will be in aggregate form.

May we begin?

Interview Questions:

1. Can you describe your role in your organization?
2. Would you like to be a part of a coalition to help expand health care delivery system in St. Marc?
3. What role would you like to have your organization play in a coalition?
4. How would you describe the current status of health care access in St. Marc?

5. Of the medical colleagues that you work with on a daily basis, how many of them participate in mobile health clinics?
6. What kind of medicine do you practice on a daily basis?
7. What ailments do you typically see when you participate in mobile clinics?
8. How often do you service the same patients at these clinics? For the same ailment? If yes, why do you think this happens?
9. What types of services do you provide at the mobile clinics? Are these services abridged or full service?
10. How many patients do you see that come from outside the region for treatment? From how far away are they coming?
11. Why is it important to have access to health care in St. Marc?
12. In your opinion what role does the local government have in providing access to health care? How can this task be accomplished?
13. How does the current direct pay system for healthcare delivery services work? In your opinion is this system effective?
14. In your opinion, what would be the ideal delivery system for health care access in St. Marc?
15. In your opinion, how would an effective coalition work?
16. Is there anything you would like to add?

Appendix E

Interview Protocol – Non-Medical Professionals

Interview # _____

Date _____/_____/_____

Script

Good Morning/Afternoon. My name is Shenell Tolson. Thank you for agreeing to this interview. I am conducting research that is exploring how a community coalition can be used to expand health care delivery services to St. Marc, Haiti. You have been chosen to participate in this interview based on the work that you are currently doing within the community.

With your permission, I would like to tape our conversation so that I can be sure that everything you say has been recorded accurately. There are nine questions that I would like to ask you. The interview should take approximately 30 minutes to complete. However, you will set the pace. There is no correct or incorrect answer to any of the questions. You do not have to answer any questions that make you uncomfortable. You may stop the interview at any time. Any data reported will be in aggregate form.

May we begin?

1. Can you describe your role in your organization?
2. Would you like to be a part of a coalition to help expand health care delivery system in St. Marc?
3. What role would you like to have your organization play in a coalition?
4. How would you describe the current status of health care access in St. Marc?

5. How did you make decisions about the needs of the people within St. Marc?
6. Why is it important to have access to health care in St. Marc?
7. In your opinion what role does the local government have in providing access to health care? How can this task be accomplished?
8. How does the current direct pay system for healthcare delivery services work? In your opinion is this system effective?
9. In your opinion, what would be the ideal delivery system for health care access in St. Marc?
10. In your opinion, how would an effective coalition work?
11. Is there anything you would like to add?

Appendix F

Research Question/Instrument Alignment Tool - (Medical Professionals)

Interview Question	Research Question 1 (State of Health Delivery Services)	Research Question 2 (Experience in A Collaborative Effort)	Research Question 3 (Describe Intended Impact)
Role in Org		✓	✓
Desire to Be A Part of Coalition		✓	✓
Role Your Org Plays in Coalition		✓	✓
Current Status of Healthcare	✓		
Med Colleagues That Do Mobile Clinics	✓	✓	
Medical Expertise		✓	
Common Ailments Seen at Mobile Clinics	✓		
Repeat Patients	✓		
Services Provided at Mobile Clinic	✓	✓	✓
Distance Patients Traveled	✓		✓
Importance of Health Care Access	✓	✓	✓
Government Role in Access to Health Care	✓		✓
Direct Pay System	✓		
Your Ideal Delivery System	✓	✓	✓
Coalition Effectiveness	✓		✓
Additional Info			

Appendix G

Research Question/Instrument Alignment Tool - (Non-Medical Professionals)

Interview Question	Research Question 1 (State of Health Delivery Services)	Research Question 2 (Experience in A Collaborative Effort)	Research Question 3 (Describe Intended Impact)
Role in Org		✓	✓
Desire to Be A Part of Coalition		✓	✓
Role Your Org Plays in Coalition		✓	✓
Current Status of Healthcare	✓		
How Do You Make Needs Decisions	✓	✓	
Importance of Health Care Access	✓	✓	✓
Government Role in Access to Health Care	✓		✓
Direct Pay System	✓		
Your Ideal Delivery System	✓	✓	✓
Coalition Effectiveness	✓		✓
Additional Info			

Appendix H

The Signing of the Memorandum of Understanding

On June 6, 2018, President Etienne of the Université Publique de l'Artibonite aux Gonaïves and President David Wilson of the Morgan State University, along with their constituents gathered to sign the Memorandum of Understanding. This solidified the formal partnership between the two universities. Pictured left to right is: Dr. Jean Odile Etienne of UPAG and Dr. David Wilson of MSU.



Appendix I

Decommissioned Clinic

A photograph of the inside of a decommissioned clinic in St. Marc (June 2008).

This room is part of the labor and delivery ward. In the decommissioned clinics, most of equipment and medical supplies were left behind. In this photo are cribs, an exam table, and an adult hospital bed. Not all has been lost with the closing of the clinics. Some of the equipment can be cleaned and/or repaired for use when the clinics re-open.

