

Examining the Role of International Service-Learning in American Medical Education: A
National Exploratory Study

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Dedication

I dedicate this work to my best friend, my partner, my husband: Daniel Sopdie. I simply could not have done any of this without you.

Abstract

There is a recent rise in demand for international rotations in medical school, during which U.S. schools send medical students to another country for an immersive educational experience, but there is little research surrounding the characteristics, ethics, and institutional support for these types of rotations. This study examines the types of international rotations that exist in medical education in the United States and its territories as key avenues for international service-learning (ISL) by investigating the key characteristics of international rotations and the structural and programmatic features necessary to support such rotations; the barriers and facilitators to the advancement of ISL from the perspectives of stakeholders within medical education who design and implement international rotations (i.e., faculty, staff, administrators); broader contextual factors that might influence a medical school's decision to include ISL in its medical program; and whether relationships exist between components within a medical school or institutional environment and the inclusion of international service-learning components performed during international rotations.

This study utilizes a mixed methods design with an exploratory approach. Quantitative data were collected through a survey that was sent to all 185 *MD*- and *DO*-granting medical schools in the United States and its territories that had full accreditation status as of July 2018, which had a response rate of 31%. Qualitative data were then collected through 15 interviews with international rotation coordinators that had also responded to the survey. Inductive and interpretive methods were used to analyze data.

Key findings from this study provide highly contextualized guidance to scholars and practitioners interested in the transformative potential of service-learning, or any other reform effort in medical education, and the organizational components necessary to sustain such efforts. Results in this study demonstrate the variety of ways in which international rotations are designed and implemented across medical schools. Design aspects of international rotations depend greatly on safety considerations, components required for academic credit, student considerations such as level of experience, and the agency or motivation of the international rotation coordinator to include certain components as part of international rotations, such as pre-departure orientation or post-travel debrief and reflection. Formal structures and processes are shown to help support international rotations, integrate international rotations more formally into medical school curricula, and strengthen partnerships with community host sites. Issues of funding and timing a student could perform an international rotation during the four-year program were most influential to student participation as well as to design decisions regarding planning and implementation of international rotations.

Barriers to planning and implementing international rotations include cost and safety challenges as well as challenges to meet student expectations during the design of international rotations. Other barriers included challenges to integrating international rotations into broader medical school curricula, such as finding faculty or school leaders to support international rotations. Elements that helped facilitate international rotations

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included high student interest, convenient opportunities to develop community partnerships, and international rotation coordinators' personal experiences and motivation, such as passion or personal mission to inspire students or promote health equity. Broader contextual and environmental aspects that could drive or deter a medical school's participation in international rotations included the various perceived benefits and disadvantages associated with international rotations and additional contextual factors within and surrounding medical schools held great influence in a medical school's decision to engage in international rotations. Factors that drove medical schools to participate in international rotations included student demand, addressing changing workforce demands, and broader environmental drivers, while factors that deterred a medical school's participation were related to a lack of structures or processes in place or the length of time a medical school had been open. Aspects within a medical program were found to influence the inclusion of international service-learning components in international rotations, such as a medical school's mission, length of time international rotations had been offered at a medical program, presence of sites in lower-income countries, and whether international rotation coordinators held joint appointments or affiliations with other offices.

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CHAPTER 1

Introduction

As tuition costs for higher education rise and employers critique college graduates' lack of preparedness for the workforce, the value and impact of higher education are being questioned by a broad range of stakeholders. In professional education programs, such as medical education, scrutiny is especially high given the projected shortage of health professionals to address diverse healthcare needs in society (Association of American Medical Colleges [AAMC], 2015). The purposes of medical education institutions, like for all institutions of higher learning, are continually scrutinized and evaluated for their value. Students, politicians, and the public ask: how can an educational program best prepare its students to meet societal, industrial, and global needs? How can students develop into civically-engaged citizens who are able to interact with a diverse and changing global society? Like all institutions of higher education, medical education is asked to demonstrate greater accountability for the funds it receives, improve the quality of education to compete globally, and increase access and equity. Medical education is challenged to improve educational strategies to better connect medical students to the communities they will serve. In general, however, there is a lack of knowledge surrounding *how* to most effectively transform medical education in a lasting and meaningful way.

Common criticisms of medical education institutions echo many of these questions. Scholars have argued that current educational approaches inadequately prepare

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students to serve patients with diverse cultural backgrounds (Gregg & Saha, 2006); that curricula is no longer relevant to current practice challenges (O'Neil, 2000); that traditional clinical learning does not more broadly teach the civic and advocacy roles of physicians (Irby, Cooke, & O'Brien, 2010); and that current research and service do not lead to sustainable outcomes on students or communities (Boelen, 2002). Learning that promotes active engagement in communities and emphasis on social accountability is one approach that is gaining popularity to address many of these concerns (Boelen, 2002; 2008; Mann, 2011). Medical education has seen an expansion in the use of community-based educational strategies, with a notable increase in the demand for international education experiences in particular (Lasker, 2016a). External forces affecting higher education such as internationalization and globalization have also contributed to the rise in international education experiences in medical education (Plater, 2011). Additionally, global experiences often address the preceding criticisms more effectively than learning that takes place in domestic settings (Bringle & Hatcher, 2011; Jones & Steinberg, 2011; Tonkin, 2011).

Together, these contextual factors have resulted in an increase in the education strategy of international service-learning (ISL) in medical education. Scholars have argued that ISL can integrate professionalism, cultural competency, and an awareness of global health systems into training to serve a changing social landscape (Lasker, 2016a). In addition, international experiences have been found to expose students to a broader

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range of disease pathology and alternative health systems and are associated with heightening students' awareness of cultural and socioeconomic factors of health as well as strengthening clinical and language skills (Hartman, 2017; Jones & Steinberg, 2011; Lasker, 2016a). Regardless of the perceived benefits of engaging future medical professionals in international education experiences, there are a number of issues regarding the current use of ISL in medical education, including the potential harm that medical students who may have all of the necessary experience and skills needed for international health services might inflict on host communities, intentionally or unintentionally.

In recent years, scholars have begun to examine the risks to the communities that host ISL programs in health and medical education and described responsibilities of both institutions and individuals to ensure ethical experiences (Hartman, 2017; Reisch, 2011). Studies have documented ISL activities in which medical students chose to pursue clinical experiences that were harmful to community members, undermined local health infrastructure, and performed illegal and unethical activities under the guise of providing medical service (DeCamp, 2007; Hartman, 2017; Lasker, 2016a; Sullivan, 2016). Hartman (2017) and Reisch (2011) also described the dangers of medical students superseding local medical practitioners: medical students do not hold credentials like in-country physicians, often do not speak local languages, and create a dependency on international visitors that can lead to perceptions of incompetence of in-country medical

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practitioners. Faculty and students may be at risk of doing more harm than good if they are not aware of the critical issues of the use of service-learning in international settings.

Due to rising student interest and the belief that ISL can contribute to addressing many of the critiques of medical education, medical schools in the United States can experience pressure to provide and even expand ISL without having a comprehensive understanding of how to create and support mutually beneficial relationships with ISL partners in host countries and the sending institutions in the United States. Although many studies document the outcomes for students in service-learning or international service-learning, few studies explore the institutional perspectives within the sending institution in the United States, including organizational factors and the perspectives of stakeholders within medical schools.

Approach and Positionality

My interest in ISL efforts in medical education stems from experiences that I have had both as a working professional in a medical school and as a student who has experienced international education programs in health-related settings. I have been fortunate enough to experience an international education program that was co-designed by both the sending institution and the host institution, in which ethical principles and concerns of mutual benefit were evident through every aspect of the partnership.

Although the experience focused on global health, there was no direct service of any type involved, but the immersion in community settings through site visits and teaching led by

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host faculty impressed upon me the transformative potential of international and community-based education.

As a practitioner, I have been in the position of helping design international experiences in medical education and have observed the unique contexts and pressures that have led to the increase in demand for international experiences. I have seen students demand to perform service activities outside of their scope in the name of learning and heard shocking stories from scholars and practitioners in which students have unintentionally caused harm to host communities. I have also seen professionals and scholars take great care in designing international experiences, whether they include service components or not, to ensure that the host community experiences benefit along with students. Seeing and experiencing the tensions, pressures, complexity, and potential for immense risk or benefit sparked my interest in how service-learning can be used in international settings to promote learning in health professions education, and my professional experience encouraged me to widen my lens to include perspectives from organizational studies to focus on the role that institutions and institutional actors play in designing and implementing such programs.

As a researcher informed by these perspectives, I sought to design a study that was grounded in context and would ideally produce findings that could be applied by scholars and practitioners. My research questions stemmed from an extensive review of literature and careful consideration of calls that scholars before me have made regarding

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the topics and methods of research needed to study service-learning in medical education, as well as from conversations with many others in this field who explained their daily work and their questions and concerns about the use of service-learning in medical education. My positionality therefore affects both my design and interpretation of findings to tend toward contextualized and pragmatic information that I hope can be useful to scholars and practitioners who study or work in medical education or any other health professions field interested in using experiential pedagogies.

Purpose of Study

The purpose of this study is to examine international service-learning (ISL) programs in medical education in the United States. More specifically, it examines: how international rotations in medical education are designed and implemented; describes the forces that promote and impede the implementation of international rotations from the perspectives of stakeholders within medical education institutions excluding students; and explores larger contextual factors that influence a medical school's participation in ISL. The lack of data on the impact that ISL has on medical education institutions and their stakeholders, such as leaders, faculty, and staff, makes it difficult to justify directing institutional resources to promote and sustain long-term service-learning partnerships that are reciprocal and mutually beneficial (Furco & Miller, 2009; Gelmon, Holland, Morris & Driscoll, 2000; Holland, 2009). Many studies on service-learning are performed by advocates and tend to focus on the student outcomes as a result of ISL experience (Eby,

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1998), and studies on service-learning, particularly in health fields, often fail to examine how service-learning initiatives impact institutions and faculty instructors (Gelmon et al., 2000). American models of ISL also tend to emphasize the impact on students over other factors (Tonkin, 2011). In light of these conditions, this study focuses on the perspective from the individual holding the organizational role that designs or implements ISL for medical students, often called a coordinator of international rotations, and the organizational factors that affect a medical school's participation in international service-learning.

Research Questions

Much of the existing research on ISL focuses on student outcomes with little attention to other perspectives within the medical education institution (Eby, 1998; Gelmon et al., 2000). Therefore, in this study, I exclude students from what I refer to as “institutional stakeholders,” and instead focus on gathering perspectives from other institutional constituents in medical education; the staff and/or faculty who plan, implement, and maintain ISL programming in U.S. medical schools are the focal point of my study. These positions are often classified in medical schools as “rotation coordinators” or “international rotation coordinators.” For the purposes of this study, I use the term “international rotation coordinator” or “IRC” to refer to faculty or staff who hold these organizational roles. Oftentimes, professional academic staff or faculty in a coordinator position play a pivotal role in the design and implementation of educational

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activities. As the person who manages daily activities related to the program, this role is often familiar with the institutional factors, resources, student perspectives, and can act as a “gatekeeper” to community partnerships (Weerts & Sandmann, 2010, p. 643).

For this study, I use the definition of service-learning proposed by Seifer (1998), who stated that service-learning is

a structured learning experience that combines community service with explicit learning objectives, preparation, and reflection. Students engaged in service-learning are expected not only to provide direct community service but to learn about the context in which the service is provided, the connection between the service and their academic coursework, and their roles as citizens. (p. 274)

Thus, “international service-learning” (ISL) is defined as service-learning activities that take place across national country borders. For the context of this study, “home country” refers to the country in which the sending institution is located in the United States or its territories, and “host country” refers to the country in which the medical student is placed for the ISL experience. For example, a medical student of any citizenship may attend a medical school in Puerto Rico, which would be considered the “home country,” and ISL would take place if that student left their home institution in Puerto Rico for a placement in a host country that is not in the United States or its territories.

The following questions guide this study:

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- 1) What do coordinators of international rotations identify as key characteristics of international rotations in U.S. medical schools?
 - a) What are the foundational structural and programmatic components that are necessary for international rotations?
- 2) What do international rotation coordinators identify as barriers and facilitators to implementing international rotations in U.S. medical schools?
 - a) What do international rotation coordinators identify as factors that drive or deter participation of a U.S. medical school in international rotations?
- 3) Is there a relationship between certain components in the medical school or institutional environment and a medical school's inclusion of international service-learning in international rotations?

This study features a mixed methods sequential approach beginning with a survey of IRCs situated in medical schools in the U.S. and its territories followed by interview components, as described in detail in Chapter 3. Answers to these research questions will provide information regarding transformational pedagogies such as service-learning and their use in international settings in medical education, and contextual factors that might promote or prohibit efforts to incorporate service-learning and influence decisions made at a medical school to incorporate international service-learning into educational programs.

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Conceptual Framework

There are many facets of ISL in medical education that demand further exploration. This study focuses on addressing gaps in the literature that have been identified as important perspectives to explore related to ISL; namely, institutional perspectives of leaders, faculty, and staff who work in ISL programming. This study also situates medical schools within the context of the encompassing higher education institution and explores organizational factors within the medical school and higher education institution that promote or inhibit ISL. Janke (2013) argued that examining an organizational level as opposed to an interpersonal level provides insights about why partners remain together or how ISL relationships can be maintained when individuals leave an organization. Additionally, focusing on an organizational level can also provide information about how decisions are made, how actions are performed by organizations, and can also help practitioners become aware of new approaches to planning or managing ISL programs (Janke, 2013).

This study adapts concepts from Bronfenbrenner's (1979) ecological systems model to follow a conceptual framework that situates medical education institutions in a broader system, context, and ecological system of education. The model is also useful for exploring organizational factors that may act as levers of change within United States medical schools. The ecological systems model was developed by Bronfenbrenner in 1979 to describe human development in relation to broader environmental factors.

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Bronfenbrenner explicated the levels of the ecological model including the *microsystem* (structures with which an individual had direct contact), *mesosystem* (structures providing interaction between the structures in the microsystem), *exosystem* (larger social system in which the individual exists), and *macrosystem* (overall patterns of ideology or organization that characterize a given society). See Figure 1 for an adapted model following ecological systems theory to situate medical schools within a broader organizational environment. In this model, the IRC is placed at the center of the system as the focal point of the study and the institutional agent with knowledge of and influence over the international rotations at their medical program.

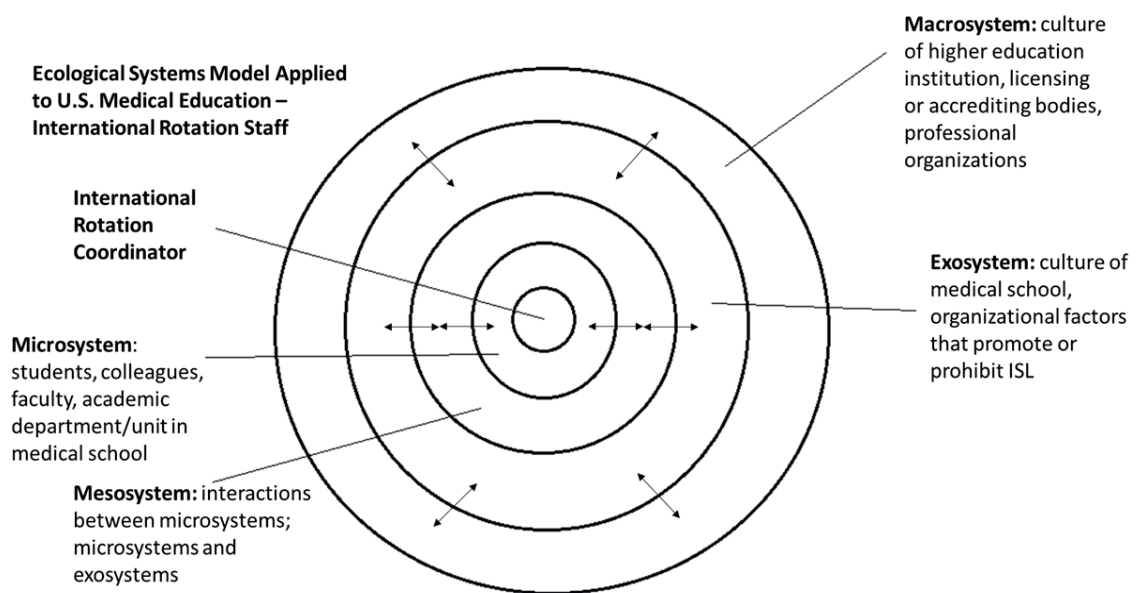


Figure 1. Ecological systems model applied to U.S. medical education

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Significance of Research

Service-learning has surfaced as a strategy used to address several of the criticisms of medical education. At the same time, incorporation of service-learning practices can raise additional concern if students, faculty, and practitioners are not informed about current research detailing potential harms of service-learning. Recent research studies are shedding light on the perspectives of the ISL host community perspectives and are challenging some of the established practices that have long been the norms in service-learning programming (Ritz, Beatty, & Ellaway, 2014). Theories and practices that have guided the use of service-learning in medical education should be re-examined in light of these new perspectives to ensure that medical students are not only receiving the best education to prepare them to serve patients, but that this education is designed to minimize harm the host community might incur as a cost to hosting students in community-based learning experiences.

Additionally, while the transformative potential of service-learning has been asserted for a number of disciplines and fields of inquiry, it has not yet been realized in the field of medical education, both for hosting communities and sending institutions. Despite calls for reform, medical education institutions seem to have a history of reform without real, lasting change (Bloom, 1989; Ludmerer, 2012). Service-learning strategies are used at many institutions, but it is debatable if service-learning has transformed the traditional environment of medical education, or whether service-learning can be

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effectively implemented and sustained in medical education institutions in the most ethical manners that maximize benefits to both the medical student and the host community.

Scholars who have examined service-learning in the health professions have noted the need to incorporate a larger systemic lens that considers organizational perspectives, including infrastructure requirements and institutionalization of new practices (Butterfoss & Kegler, 2015; Janke, 2013; Seifer, Shore & Holmes, 2003) and the process of organizational change (Furco & Holland, 2013; Holland, 2000). To date there has been no comprehensive review of organizational change as it relates to service-learning in the health professions. In the current context in which the use of ISL in medical education is under scrutiny, it behooves institutions that use ISL to be aware of the current scholarship on ISL in health professions education, aligned with the context and culture of medical education and the higher education landscape.

Other scholars have called for studies of service-learning or ISL in medical education to include descriptions of program structures, faculty perspectives, and more specific information regarding course type, duration, service activity, funding, and characteristics of community partners (Tonkin, 2011; Stewart & Wubbena 2014; 2015). Tonkin (2011) also suggested that an examination of what brought ISL into being and what factors have determined its growth as a useful avenue for research to explore.

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To this end, this study focuses on organizational change, transformational pedagogical strategies in service-learning, and ethical practices of ISL in medical education to provide useful insights for institutions that send medical students abroad for ISL experiences. The findings from this investigation identify the variety of ways that international rotations are designed and implemented in medical education in the United States as well as the barriers and facilitators to implementing ISL, all from the perspectives of non-student stakeholders within medical education institutions. The findings provide insights into the set of contextual factors that influence a medical school's decision to incorporate ISL in its programs.

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CHAPTER 2

Review of Literature

A review of service-learning in medical education requires an interdisciplinary approach that can incorporate perspectives from education, medicine, organization development, student development, critical studies, and more, depending on the viewpoint of the writer (Stewart & Wubben, 2015). Incorporating organizational change literature with the study of service-learning practice broadens the scope and provides an important context for understanding the role of service-learning as an innovative pedagogy in medical education and the factors that contribute to institutional change in relation to the use of international service-learning. To understand these factors more fully, it is important to consider the topics of the history of medical education and the basis for reform, the use of service-learning and international service-learning as pedagogical strategies aimed at transforming medical education and their inherent advantages and disadvantages, the need for educational approaches in medical education to be informed by the most current research on ethical practices of international service-learning, and theories of change and stability that guide reform and transformation efforts in medical education.

The bodies of literature on these topics are expansive and represent distinct fields of scholarship. To situate the present study, I focus on sources that provide a historical overview of the major relevant concepts and selected empirical studies that are representative of research performed in these fields. Rather than provide an exhaustive,

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systematic review, I instead highlight areas of intersection across the topics and focus on foundational knowledge and more general understanding that any scholar or practitioner interested in international service-learning and reform in medical education can apply to their research or practice.

Setting the Context: Medical Education

Medical schools are some of the most restricted, traditional, and powerful education entities and represent a distinctive part of higher education (DasGupta et al., 2006). Data from the Liaison Committee on Medical Education (LCME), the accrediting body of medical education programs recognized by the United States Department of Education, indicated that as of September 2018, there were 151 accredited public and private schools granting a Doctor of Medicine degree and 34 leading to a Doctor of Osteopathic Medicine degree (Liaison Committee on Medical Education [LCME], 2018). Medical schools must carry out their own specific mission and simultaneously must be responsive to the larger mission of their respective institutions (Smith & Whitchurch, 2003). Medical schools are typically organized under a broader academic health center which includes other educational programs in the health professions. Organizational members can be confronted by conflicting demands and are challenged to align disparate policies for a wide range of stakeholders, and faculty are often pressured to prioritize research or clinical care over education (Grochowski, 2003).

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Medical education also holds its own historical social contract with society, similar to the social or civic purposes or land-grant mission of higher education institutions. Scholars have described medical education's contract with society as the trust provided through professional autonomy, self-regulation, and status of medical schools in response for altruism, professional competency, and integrity contributed by physicians in public service (Gadon & Glasser, 2006; McCurdey et al., 1997; Wasylenki, Byrne, & McRobb, 1997). This implied commitment links the institutions with their surrounding communities (Ritz et al., 2014). Some argue that the social contract is under threat, evidenced by a decline in public funding (Foreman, 1994), and others claim that reform leading to greater social accountability will strengthen the contract (Boelen, 2008).

Questions about the social relevance of higher education in general have been proposed for decades, and scholars have argued that higher education institutions have a responsibility to engage with social challenges (Kerr, 1983). In 1972, Clark Kerr and the Carnegie Commission studied the role of medical education in the United States, and the commission argued that the health professions field had the greatest contributions to make to higher education and to society (Kerr, 1972). However, Cox, Irby, Cooke, Sullivan, and Ludmerer (2006) wrote that medical education is grounded in the higher education culture, which formulates knowledge in value-neutral terms and largely ignores the "moral orientation required for successful practice in medicine" (p. 1,341).

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Medical education as a field also has a historical tradition of reform. Starting in 1910 with the publication of the Flexner Report, which defined standards of medical education that led to accreditation practices, many state licensing boards, foundations, and national organizations have organized to standardize training across the nation while constantly incorporating scientific advances (Beck, 2004; Grochowski, 2003). However, Grochowski (2003) argued that the early 1900s were the “last years in which substantial change in the basic structure of medical education occurred” (p. 13). Reform at that time established a classroom-based model of education with two years of basic science and two years of clinical science, which still exists today. Although there have been radical changes in medical practice, technology, and biomedical science that have prompted curricular reform initiatives over time, the teaching and learning experience remains remarkably unchanged (Bloom, 1989; Stewart & Wubbena, 2014). Stewart and Wubbena (2014) argued that pedagogical strategy in medical education has changed only slightly over time, and that lectures remain the dominant teaching strategy.

This history of reform without change has persisted, despite the social contract (Bloom, 1989; Ludmerer, 2012). Reports calling for reform have regularly demanded that medical education institutions should serve the health needs of society, but educational delivery methods lag behind the pace of those changing societal needs (Ludmerer, 2012). Change is not as simple as adopting a new pedagogical strategy, especially in medical education.

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For example, formal regulations such as regulatory or legislative changes as well as pressures of accreditation or professional bodies can force or permit change in medical education (Ginsburg & Tregunno, 2005). Guidelines related to clinical practice are also often created by stakeholders in medical education, but rarely lead to lasting change (Mittman, Tonesk, & Jacobson, 1992). Political and social forces also hinder changes in medical education. Culture, conflicting stakeholder interests, or inertia from faculty can prevent change in medical education (Ginsburg & Tregunno, 2005; Grochowski, 2003; Lane, 2007). Lane (2007) argued that individuals in medical fields are generally skeptical of educational change because of the conservative culture and socialization processes that reproduce that culture. Occupations, including medicine, that involve a long period of education and apprenticeship can promote the maintenance of stable attitudes, norms, and values which are continually reinforced through professional meetings, continuing education, and informal curriculum such as socialization (Hafferty, 1998; Hafferty & Franks, 1994; Schein, 2004). Socialization is a powerful, stabilizing force in medical education that can lead to uniformity of members and a culture that resists change (Ginsburg & Tregunno, 2005; Hafferty, 2016; Renn & Jessup-anger, 2008).

Paradoxically, advances in science and medical practice have occurred and continue to occur at a rapid pace. Neufeld, Khanna, Bramble, and Simpson (1995) posited that traditional educational practice in medical education was sclerotic due to efforts by faculty to maintain some familiarity and stability in the profession. Leadership

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and faculty have the capacity to transform medical education course by course, or, alternatively, maintain the incumbent order (Counte & Kimberly, 1974; Oblinger, 2010). Proposals to change the educational process may be perceived as challenging the credibility of their own training and previous teaching (Chauvin, 2002; Cuban, 1997). Faculty in medical schools, trained in the scientific process, also often require methodically supported hypotheses to make decisions regarding change of practices in an evidence-based culture, and there is not yet enough data to support that changing the educational process will lead to better physicians (Grochowski, 2003; Lane, 2007).

Bloom (1989) stated that whenever calls for reform occurred in medical education, curricula are assumed to be the best instrument for change, which is costly both in terms of money and faculty time (Ludmerer, 2012). Curricula control the teaching of knowledge, skills, and values in medical education, and are inherently responsive to external forces such as the American Association of Medical Colleges, the Liaison Committee on Medical Education, or other accrediting or licensure bodies (Genn, 2001). Formal curricula as a strong driver of change in medical education institutions has been studied by many scholars interested in medical education reform (Boyde, 1983; Bland et al., 2000; Lane, 2007). While faculty in medical schools are often called upon to create reform through educational delivery, many have little or no exposure to pedagogy or andragogy and tend to operate through the educational paradigm of lectures and classroom-based learning through which they themselves learned (Lane, 2007).

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There are other forces that promote or impede change in medical education, such as globalization, changing healthcare laws, and government financial support for medical education. Society has reinforced cost-control policies, technological advancements, and specialization, which shifted the focus away from community-oriented primary care perspectives (Bloom, 1989). Although some scholars argue that medical education should abandon the social contract metaphor (Harris, 2016), there is a widespread call for medical schools to demonstrate strengthened commitment to their surrounding communities (Christakis, 1996; Harris, 2016; Hodges, Maniate, Martimianakis, Alsuwaidan, & Segouin, 2009; Parboosingh & Hawkins, 2003). Some critics believe that medical education fails to prepare students to serve patients with diverse cultural backgrounds or that curricula is no longer relevant to current practice challenges. (Gregg & Saha, 2006; O'Neil, 2000). Still other scholars argue that traditional clinical learning does not teach broader civic and advocacy roles of physicians (Irby et al., 2010), and that current research and service do not lead to sustainable impacts on students or communities (Boelen, 2002).

Broad calls for reform include the demand for more global health education opportunities, as well as to integrate cultural competence, professionalism, and awareness of international health systems into training to serve a changing social landscape (Drain, Primack, Hunt, & Fawzi, 2007; White, 2016). Returning to community-oriented education (Garcia-Barbero, 1995; Stewart & Wubben, 2015) and a focus on training

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physicians that are prepared to serve disadvantaged communities (Beck, 2004) have also been recent areas of emphasis. In addition, despite the resources dedicated to training medical students, there is a massive projected shortage of community physicians over the next 10 to 15 years (AAMC, 2015; Mehta, Hull, Young, & Stoller, 2013; Seifer, Hermanns, & Lewis, 2000), which means it is critical that medical education entities prepare graduates to address societal needs in the most effective manner.

These criticisms demonstrate that the current method of educational delivery in medical education may not effectively meet contemporary practice challenges and prepare physicians to serve an increasingly diverse patient population. Pedagogical strategies that can address these concerns through effective means should be explored; however, given the purported rigid culture of medical education, it will take more than implementing new curricula to reform medical education. To influence change in curricula, teaching strategies, faculty approaches, and student outcomes, medical education must consider reform on a number of organizational levels within the broader higher education ecosystem (Bronfenbrenner, 1979). In addition, for the reforms to be effective, the efforts must account for the distinct culture of medical schools within the larger higher education landscape (Holland, 2000). Other disciplines have used service-learning to reform curricula and teaching practices and have built service-learning practices into the larger institutional ecosystem (Martinez-mier, Soto-rojas, Stelzner, Lorant, Riner & Yoder, 2011). Given the need for such reform in medical education,

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service-learning might also demonstrate potential as a pedagogical approach that can enhance and possibly transform medical education.

Service-Learning as a Transformational Pedagogical Strategy

Pedagogy that promotes active engagement in communities and transformative experiences for students has been proposed as an approach to address many of the criticisms of medical education (Boelen, 2002; 2008; Mann, 2011). Service-learning is one such educational strategy, and features community-based experiences and structured academic learning (Seifer et al., 2000). This section will first review service-learning use in higher education, where it has been widely adopted and studied empirically, and then follow with a review of service-learning in medical education, which is a limited body of research. This section will conclude by emphasizing the relevance of service-learning as a pedagogical strategy in medical education before exploring principles of change that relate to implementing new strategies in medical education.

Service-learning in higher education. Service-learning is an active learning pedagogical strategy that pairs community-based experiential education with structured learning in which community service follows explicit learning objectives, adequate preparation, and reflection following the activity (Seifer et al., 2000). The concept of service-learning is elucidated in a number of different theories across several disciplines. The theories most often referenced are David Kolb's theory on experiential learning and John Dewey's educational theory, which state that experience is the foundation of

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learning and service provides an authentic context for application (Bringle & Hatcher, 2000; Dewey, 1938; Giles & Eyler, 1994; Kolb, 1984). Dewey proposed that learning is an ongoing reconstruction of experiences through continuous learning that lends academic abilities to community and social concerns (Dewey, 1938). Kolb built on Dewey's theory, creating a cycle of learning that included experience, reflection, thinking, and acting (Kolb, 1984). Scholars have also cited the work of Paolo Freire as a more radical approach to experiential education that places learning in the context of social analysis and political transformation of society (Crabtree, 2008).

Student development theories are also often used in service-learning research (Bringle & Hatcher, 2000), as well as biopsychosocial and ecological systems models (Reeb & Folger, 2010; Van de Ven, 2007) that consider the holistic and environmental aspects of the student experience. Service-learning is a socially embedded strategy, and the design often reflects different assumptions, norms, and ideologies (Bringle, Clayton & Hatcher, 2013). Crabtree (2008) highlighted that experiential learning involves greater opportunities for learning than traditional classrooms and no matter the theory used to guide the experience, reflection is key. However, Crabtree (2008) also highlighted in a review of literature on international service-learning that experiential learning theories often prioritize students' learning and student transformation rather than social transformation within the community. Service-learning, on the other hand, attempts to provide mutual benefit to communities in addition to the students and focuses on creating

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new kinds of egalitarian relationships between students and external stakeholders (Crabtree, 2008).

There are different approaches to service-learning that can be employed in designing, implementing, or assessing service-learning. Clayton, Bringle, and Morrison (2010) examined relationships in service-learning as either exploitative, transactional, or transformational. Butin (2003) argued that conceptualizing service-learning as an innovation allows scholars to examine component parts, production, and implementation in terms of efficacy, quality, efficiency, and sustainability. Butin also proposed additional perspectives through which to view service-learning. A cultural perspective can provide a macro perspective, while a political perspective views service-learning in light of competing constituencies, power imbalances, allowed or silenced perspectives, and negotiations of agenda. In a post-structuralist perspective, service-learning can be viewed as an innovation that constructs, reinforces, or disrupts societal norms (Butin, 2003).

Viewing service-learning through different lenses or conceptual frameworks can influence the discourse surrounding the use of service-learning and its objectives. For example, service-learning can also be viewed through guiding frameworks of social justice approaches or critical approaches to influence student outcomes (Dharamsi et al., 2010). Dharamsi et al. (2010) found that a social justice framework was particularly useful in introducing the health advocate role to medical students.

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Service-learning methodology can also be categorized as either critical or traditional. Mitchell (2008) argued that a social change orientation, acknowledgement and addressing of power imbalances, and the development of authentic relationships between partners help to distinguish between critical service-learning and traditional service-learning programs that do not address power and systems of inequality. Benigni Cipolle (2010) and Minkler, Pies, and Hyde (2015) defined critical service-learning as an examination of power relations in a situation or context. Critical service-learning allows students to question underlying assumptions of race, gender, and class as well as understand connections to dominant ideologies (Benigni Cipolle, 2010; Minkler et al., 2015), and can be used as a tool to solve problems of social and political injustice (Mitchell, 2008). Utilizing critical service-learning introduces a new set of intended results beyond student outcomes and also presents ethical dilemmas in creating partnerships, negotiating conflicting priorities, and deciding whose vision of common good is prioritized, all in light of power imbalance (Minkler et al., 2015; Mitchell, 2008).

Empirical evidence of student outcomes in service-learning. Service-learning is an experiential and transformative pedagogical strategy that is widely used in higher education with a variety of student learning outcomes (Dharamsi et al., 2010; Eyler, Giles, Stenson, Gray, 2001). A number of student outcomes have been empirically linked to service-learning in studies on health professions education as well as education in general that are relevant to addressing social accountability, such as development of

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citizenship, intercultural competence, and social justice, among others. Several domains of student outcomes related to service-learning have been documented in the literature in thematic areas of civic, personal, academic, and career outcomes.

Studies have found changes in civic, social, or personal attitudes toward self, learning, civic engagement and citizenship, or development of ethical and moral character following service-learning activities (Battistoni, 2013; Brandenburger, 2013; Brandes & Randall, 2011; Bringle & Hatcher, 2011; Dharamsi et al., 2010). For example, a study performed by Brandes and Randall (2011) assessed pre- and post-test scores related to a students' sense of civic responsibility after a semester-long course that included a service-learning component, and provided evidence suggesting that service-learning experience could increase levels of civic action. Two separate reviews of research on service-learning that were performed to dictate future research agendas also found connections between service-learning and civic engagement. Battistoni (2013) posited, based on his review, that service-learning strategies could lead to civic learning outcomes when the service-learning experiences generated critical reflection, included community voice in the design phase, and close connections to curricular objectives of civic learning. Similarly, Brandenburger (2013) found in his review that service-learning had a positive effect on civic responsibility and orientation toward future service.

Academic skills, such as an increase in student capacity to develop, use, and refine knowledge and skills, have also been documented in service-learning literature

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about student outcomes (Celio, Durlak, & Dymnicki, 2011; Eyler & Giles, 1999; Fitch, Steinke, & Hudson, 2013). Celio et al. (2011) performed a meta-analysis of 62 studies on service-learning that included control groups and found that students who participated in service-learning programs demonstrated improvements in academic performance and achievement as measured by student grades and test performance. Service-learning has also been shown to strengthen skills useful to future careers, such as exposure to policy, advocacy skills, and leadership development (Beck, Chretien, & Kind, 2015; Cohen & Milone-nuzzo, 2001; Faller, Dowell & Jackson, 1995; Gruen, Campbell, & Blumenthal, 2006; Huddle, 2011; Long et al., 2011). For example, a focus group study of nine medical students performed by Beck et al. (2015) revealed that immersive community-service experiences performed at a medical specialty camp deepened students' motivation to pursue their careers in medicine and influenced their identity develop as a medical professional.

Service-learning also promotes critical thinking by requiring students to integrate and reconcile perspectives that can contradict each other, and leads to greater transfer of knowledge from one context to another (Eyler & Giles, 1999; Fitch et al., 2013). Eyler and Giles (1999), for example, focused on assessing cognitive outcomes that undergraduate students can gain through participating in service-learning through a study of over 1,000 students. They found evidence that transfer of knowledge as well as critical

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thinking ability was greater for students who had participated in service-learning courses than for students who had participated in courses without service-learning components.

Critiques of service-learning. A review of how service-learning is described in the literature also reveals a perspective that is critical of the guiding theories and principles of service-learning in practice, especially within medical education and other health education programs. Labonte (2015) argued that “an uncritical adoption of community rhetoric can, paradoxically, work against empowerment ideals that lie at the heart of many health practitioners’ intent” (p. 95). Deardorff and Edwards (2013) support Eyler and Giles’ (1999) findings that without critical reflection, students are at risk for perpetuating stereotypes and reinforcing ethnocentrism. Similarly, Kahne and Westheimer (1996) and Ritz et al. (2014) purported that there is a need to clarify ideological perspectives that underlie service-learning programs. Gardner, Schamess, Harper and Cora-bramble (2000) wrote that “...a huge disproportion in power and resources still separates the community sites from their university partners” (p. 31). Eby (1998) argued that the demands placed on the host location limit the ability of the service to address community needs at a structural level.

Butin (2003) critiqued the service-learning literature’s unquestioned assumptions that the processes and results of service-learning are universally beneficial to all involved. Butin proposed conceptualizing service-learning practice as technical, cultural, political, and poststructuralist. He demonstrated through a review of studies in which he

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viewed outcomes through a political lens of power relations that there is little empirical evidence that service-learning provides meaningful and long-term solutions for host communities and may in fact perpetuate and reinforce dominant deficit perspectives of others. Eby (1998) suggested that service is often awarded a noble and moral status, and therefore it is not popular to question assumptions or unintended effects of volunteerism. He also critiqued higher education's propensity to use service-learning and community engagement as a public relations tool. Furthermore, other scholars have suggested that at the end of the service experience, students may reflect on ethnocentrism or racism in harmful ways, or inappropriately criticize community practices based on a superficial understanding from a brief, fragmented service visit (Crabtree, 2008).

Another perceived limitation of service-learning programming is the absence or rejection of the community perspective in the majority of service-learning literature, and the need for research that critically examines the concept of mutual benefit and outcomes in host communities (Eby, 1998; Reeb & Folger, 2013; Sandy & Holland, 2006; Stewart & Wubben, 2015). Defining community is imperative to the design of service-learning, because principles of ethical and quality service-learning experiences dictate community involvement in the process of development and implementation (Bringle et al., 2013). Bloomgarden (2017) critiqued the lack of perspectives from host communities and argued that the field of service-learning has not systematically examined questions and challenges related to the design and implementation of longitudinal and meaningful

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impacts on community. The community perspective is largely absent in this literature review, reflecting a dearth of literature from the perspective of communities receiving service and omission of an examination of the concept of reciprocal knowledge or development of mutual partnership.

In healthcare settings, a community perspective of the partnership is vital to illuminate improvements or harms done to the community infrastructure of healthcare delivery (Hartman, 2017). Eby (1998) claimed that much of the research about service-learning was performed by advocates who were typically from academia and interested in the learning that occurs rather than the impact on the community. This critique is still relevant: although many other scholars have documented the need for research from the community perspective, few studies have actually included community as a lens (Brandenberger, 2013; Gelmon et al., 2000; Hunt, Bonham & Jones, 2011; Sandy & Holland, 2006).

Service-learning in medical education. In the context of medical education, service-learning can span the entire range of community activities, including research, clinical care, community service, community-based education, and community development (Calleson, Seifer, & Maurana, 2002). Strasser et al. (2015) argued that community involvement is a fundamental aspect of a medical school's missions of education, research, and development. By aligning learning objectives with community

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needs, students can learn about social determinants of health, health disparities and can develop skills necessary to practice in community settings (Strasser et al., 2015).

In medical education, the term “service-learning” is used almost just as often as the term “community-based.” Hunt et al. (2011) reviewed literature to understand the heterogeneity of educational activities in medical education and found that the term “service-learning” was often used to refer to identifying the needs of the greater community or involving community members in determining health priorities. In contrast, the term “community-based” was more often used to describe programs that placed students in community clinics under the mentorship of community faculty, although the themes of collaboration, partnership, and teaching about population health and systems-based practice were explored under both terms. The term “service,” used often in medical education, typically refers only to episodic volunteer-like activities, without reciprocal learning components (Stewart & Wubbena, 2014). Howard (1998) and Boyle and Overfield (1999) have also commented on the similar interpretations in the use of both “service-learning” and “community-based.” For the purposes of this study, I use the term “service-learning.”

Practices of community-engagement, including service-learning, have been adopted by medical schools to varying degrees. The overall culture of the institution in which a medical school is situated and the extent to which the institution supports community-engaged practices impacts the culture and practices of the medical school and

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medical education. Medical schools also can vary in culture and focus based on the broader institutional culture in which they are situated, or they may be independent and not situated within a broader higher education institution, even though all medical schools comply with national accreditation standards. The Liaison Committee on Medical Education, the primary accrediting body for medical schools in the United States and Canada, has endorsed the use of service-learning as an educational approach (Hunt et al., 2011; LCME, 2018), and there has been an increase in the number of professional and peer-scholar groups encouraging and promoting service-learning in medical education, such as fellowships, national membership organizations, and increased investments from funding agencies for community-engaged research and programming. (Horowitz, Robinson & Seifer, 2009; Seifer, 1998; Seifer & Sisco, 2006; Seifer, Blanchard, Jordan, Gelmon & McGinley, 2012).

Stewart and Wubbena (2015) described three common ways in which medical students are involved in service-learning: through elective-based courses, selection-based courses in which students must apply and be selected, and through requisite-based programs, in which students are required to enroll in service-learning courses that are linked to medical school curricula. In the systematic review performed by Stewart and Wubbena (2015), there was about an equal split between the three approaches in medical schools that offered service-learning courses. Medical schools often used service-learning

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for programs related to education and training, clinical based programs, and social justice programs.

Service-learning emerges as a reform because it differs from and enhances traditional medical education in a number of ways (Seifer et al., 2000). In traditional medical and resident education, emphasis falls heavily on meeting learning objectives related to competence or mastery of various concepts or procedures, while service-learning offers a balance between learning objectives and service. Service-learning also prioritizes reciprocal learning, as opposed to traditional models in which the student learns from an expert teacher or the student is seen as the expert in a community setting, although the teacher or instructor still plays an instrumental role in guiding student learning (Seifer et al., 2000).

Stewart and Wubbena (2015) also described the use of service-learning as a pedagogical method to reform medical curricula. Calls for greater accountability to social purposes, concerns of sustainability, institutionalization of change, and improved health outcomes contribute to the need of local partnerships in medical education (Freeman, Gust & Aloschen, 2009). In terms of curricular reform, one of the most commonly cited methodologies to promote social accountability is service-learning (Mahoney, Boileau, Floridis, Abi-abdallah, and Lee, 2014; Woollard & Boelen, 2012). Proponents of service-learning suggest that there is great capacity for transformative change in multiple dimensions of higher education, supporting its effectiveness as a reform. Bringle et al.

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(2013) claimed that service-learning has influenced the dimensions in academia that are most difficult to change, such as faculty work, promotion and tenure, curricula, organizational infrastructure and budget, student learning assessment, and community-campus partnerships.

Empirical evidence of medical student outcomes in service-learning. There is less empirical evidence related to outcomes of service-learning in medical education than in higher education generally. In a qualitative systematic review of service-learning in medical education conducted by Stewart and Wubben in 2015, only 32 articles were identified between 1998 and 2012; however, existing literature does provide support for the efficacy of service-learning as a pedagogy in medical education. Themes in existing literature can be categorized similarly across thematic areas of civic, personal, moral, academic, and career outcomes that are apparent in empirical studies on service-learning in general, as reviewed earlier.

Civic outcomes are often tied to a conversation about social accountability in medical education. Dharamsi et al. (2010), and Preston, Larkins, Taylor & Judd (2016) suggested that community service-learning nurtures a greater sense of social accountability in medical students than current classroom-bound and lecture-based learning do because it situates learning in diverse community contexts. In a study performed by Dharamsi et al. (2010), the authors focused on assessing dental students, faculty, and community partner experiences with a new integrated medical/dental

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program. Through a survey, focus groups, and individual interviews with 21 students who participated in the program, Dharamsi et al. found that students experienced a sense of social responsibility to marginalized groups and could better recognize the importance of community engagement to serve vulnerable groups in society.

At the organizational level, Preston et al. (2016) proposed a framework for socially accountable education practices in medical education based on different environmental contexts at medical schools. Through a multiple case study of 75 staff, students, and community members at four medical schools, Preston et al. traced how institutional environments in medical schools can contribute to pursuing a mission of instilling values of social accountability in students. Mounting evidence of the effectiveness of community engagement in teaching and student learning suggests that service-learning approaches could contribute to greater social accountability in medical education and support its credibility as a method aligned with addressing societal needs (Burrows, Chauvin, Lazarus & Chehardy, 1999; Hunt et al., 2011; Seifer, 1998; Seifer & Sisco, 2006).

In healthcare settings, service-learning also promotes professionalism and ethics, which are particularly important to healthcare careers (Smith et al., 2013). Service-learning has also been used as a strategy to strengthen interprofessional and teamwork skills in healthcare settings (Chavez-yenter, Badham, Hearld, & Budhwani, 2015; Dharamsi et al., 2010) and to promote intercultural competence (Smith et al., 2013). For

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example, Chavez-yenter et al. (2015) studied the benefits of service-learning in undergraduate public health education with a questionnaire administered to 43 students and found that students demonstrated higher self-assessed scores related to interpersonal and problem-solving skills. Another study by Smith et al. (2013) featured two case studies of community service-learning in medical education and highlighted how service-learning advances interdisciplinary teamwork, as evidenced in the case studies, by promoting a shared sense of purpose, moral orientation, and collegiality.

More specifically, studies of service-learning in medical education have found that service-learning experiences promote core attributes of duty and altruism as well as professionalism (Beck et al., 2015; Brush, Markert, & Lazarus, 2006), and that service-learning also promotes skills in collaboration and problem-solving that are needed to work in health care teams comprised of doctors, nurses, pharmacists, and other professionals oriented around the care of patients (Connors, Seifer, Sebastian, Bramble & Hart, 1996). Connors et al. (1996) proposed models for interdisciplinary learning through service-learning in health professions education after of a review of three health professions programs at different universities. The authors found that interdisciplinary interactions could promote tolerance for diversity and respect across the professions represented in the service-learning activities. Service-learning was also found to improve clinical skills such as history taking and physical examination skills in a study of 316

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medical students who provided service at a community clinic (Leeper, McCluskey, Leeper, Jackson & Snyder, 2013).

In addition, service-learning can lead to greater knowledge retention than traditional classroom-based education, as demonstrated in a randomized controlled trial in which 124 medical students were randomized into service-learning and non-service-learning educational interventions (Leung et al., 2012). Leung et al. found that knowledge was retained by students who had participated in service-learning for a longer period of time following the intervention than for the students who had not participated in service-learning. Additional studies of service-learning in medical education found these experiences can be personally transforming to learners and that “trainees learn to see people as ‘people’ and not solely as ‘patients’” (Seifer, 1998, p. 403). Burrows et al. (1999), for example, examined course feedback from freshman medical students who had completed 20 hours of required service-learning and found that students reported increased respect and compassion for others as well as a feeling of nurturing growth in those that were served.

Research on the use of service-learning in health professions education also suggests that when service-learning incorporates a social justice orientation, students can understand and work to change structural or institutional factors that contribute to inequitable conditions by enabling mutual capacity to address root causes of social disparity (Dharamsi et al., 2010). Dharamsi et al. (2010) and Galiatsatos, Rios, Daniel

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Hale, Colburn & Christmas (2015) found that service-learning enriches students' social responsibility toward marginalized groups in society, and Cashman and Seifer (2008), Chavez-yenter et al. (2015), and Hood (2009) have all discussed service-learning's strength as a strategy to achieve social justice change, particularly in health. Cashman and Seifer, for example, detailed the alignment between the goals of service-learning and the goals of public health to promote social justice as well as the importance of allowing students to apply theoretical knowledge in practice. Hood (2009) similarly traced the congruence between service-learning approaches and strategies to address social needs used in U.S. dental schools. Service-learning is also a useful strategy to teach students about social determinants of health and the needs of vulnerable populations, which is critical in health professions education (Dharamsi et al., 2010; Green, Bentacourt, & Carrillo, 2002). Lessons from these position pieces in other health professions can similarly be applied to medical education.

Scholars have also investigated how service-learning experience can lead to career choice in a service field (Borges & Hartung, 2007; Brandenberger, 2013; Brush et al., 2006; Jeffrey, Dumont, Kim & Kuo, 2011). Brush et al. (2006), for example, compared self-reported data from a graduating class of medical students that indicated commitment to service-learning and residency match results, and found that a strong service orientation could predict a medical student's selection of a primary care specialty as a career. Borges and Hartung (2007) similarly conducted a study of self-reported

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outcomes following a service-learning project performed by first-year medical students and found that a vast majority of students who completed service-learning experiences reported interest in working in settings where health professionals were underrepresented or in community settings. Similar studies investigating international service-learning have also revealed service-learning's capacity to reinforce career choices in underserved areas (Brown, 2011; Jeffrey et al., 2011; Jones & Steinberg, 2011). Such findings have implications for responding to the declining numbers of health professionals and projected shortage of community physicians.

Challenges for service-learning in medical education. Service-learning can be a challenging strategy to use due to the extensive variations it can take in form, structure, or definition. Practitioners and faculty must consider these variations, because “variation in the underlying ideologies and implementation of service programs can mediate positive outcomes” (Benigni Cipolle, 2010, p. ix). In medical education, scholars have found that variation in sequencing or setting can have significant impact on types of student outcomes (Benigni Cipolle, 2010; Bringle et al., 2013; Jones, Blinkhorn, Schumann, & Reddy, 2014). Student outcomes can also be affected by the amount and type of contact with service beneficiaries, as well as the frequency of activities and type or quality of reflection (Walter & Hyde, 2015).

In terms of setting, rural service-learning experience tends to lead to interest in serving in rural or other underserved communities upon graduation (Courran & Rourke,

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2004; Laven & Wilkinson, 2003; Meili, Fuller, & Lydiate, 2011). Meili et al. (2011), for example, conducted a study with 14 medical students that utilized written questionnaires and reflection prompts to explore the social aspects of medicine learned through service-learning, and found that these experiences encouraged altruistic behavior and future work in underserved areas. Other studies have found that one-time events, whether short-term or long-term, or ongoing placements can also affect student outcomes depending on the design of curriculum (Bringle et al., 2013). Much of the existing research is directed at exploring variation related to student outcomes. Based on the findings from their study, Stewart and Wubben (2014) also pointed out that the literature on service-learning used in medical education originates largely from the United States, although medical students are increasingly experiencing service-learning in international settings.

International service-learning in medical education. There is a growing body of literature that examines service-learning in international contexts and differentiates international service-learning (ISL) outcomes from those of domestic service-learning (Bringle & Hatcher, 2011; Jones & Steinberg, 2011; Tonkin, 2011). Scholars also make a distinction between international service-learning and global service-learning. Global service-learning refers to “systems and phenomena that transcend national borders,” while international relates nations and their relationships (Longo & Saltmarsh, 2011, p. 73). Some argue that learning to become a global citizen can happen both domestically and internationally as long as focus remains on intercultural and civic capacities and

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critical reflection through multicultural learning experiences (Hartman, 2017; Hartman & Kiely, 2014; Niehaus & Garcia, 2017). Others, for example, Drain et al. (2007) maintain that a local but global experience has only some of the benefits of working in international settings, because international settings tend to be more resource-poor and students are less reliant on diagnostic technology which promotes greater critical thinking. This review examines international service-learning because of the increase of its use in medical education as well as the unique, cross-border contexts and ethical considerations that shape how medical students learn and behave.

In general, ISL tends to take place when a developed country sends students to a developing country to provide increased resources and ideally meet needs that would otherwise remain unmet. In addition to the United States, many other countries use international service-learning in a variety of disciplines, although most models are based on North American approaches (Brown, 2011). International service-learning is an intersection of service-learning, study abroad, and international education that can produce outcomes that are not as effectively attained using other pedagogies or settings (Bringle & Hatcher, 2011; Jones & Steinberg, 2011; Tonkin, 2011). Research on international service-learning also accounts for power imbalances or colonialist overtones in developing countries (Bringle & Hatcher, 2011; Buck, 2011; Kahn, 2011; Lewin & Van Kirk, 2009), a critique of the American view of global citizenship and democracy

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(Bringle & Hatcher, 2011; Buck, 2011), and ethical considerations in providing service (Buck, 2011; Kahn, 2011).

Pressures of internationalization, globalization, scarcity, and market factors have largely shaped the role of service-learning in international settings (Hartman, n.d.; Plater, 2011), along with the rising demand for international experiences during medical education (Crump & Sugarman, 2010; Lasker, 2016b; Parsi & List, 2008). It is well documented that medical students from the United States seek out some type of international medical experience to expose themselves to a wider variety of disease pathology, learn about different health systems, and broaden awareness of cultural and socioeconomic factors of health as well as strengthening clinical and language skills; almost all medical schools in the United States have a global health component in their curricula (Hartman, 2017; Jones & Steinberg, 2011; Lasker, 2016a). There is little research on international service-learning in medical education in countries besides the United States, although recently in the United Kingdom, some scholarship has called for more regulations on service-learning and international volunteering in general (Bamber & Hankin, 2011).

International service-learning in other health professions. International service-learning has also been pursued in other health professions fields, such as dentistry, nursing, physical therapy, and midwifery, among others. Studies from other health professions education programs reveal themes similar to those identified in medical

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education. Scholars in other health fields cite the opportunity of international service-learning to allow professional students to learn outside the traditional classroom (Lattanzi & Pechak, 2011) and experience immersive education (Bentley & Ellison, 2007).

Globalization and encouragement from professional organizations to focus on international health (Pechak & Thompson, 2009; Walsh, 2003) create pressures for health programs to participate in international experiences, as well as the need to focus on cultural context (Bentley & Ellison, 2007; Curtin, Martins, Schwartz-barcott, Dimaria, Ogando, 2013; Long, 2014; McKinnon & Fealy, 2005) and to promote citizenship (McKinnon & Fealy, 2005). Much of the research focuses on student outcomes (Martinez-mier et al., 2011; Tabor, Carter, Kovar, & Ramsing, 2008; Walsh, 2003), however, some studies discussed strategic planning and risk management as well as ethical concerns and challenges similar to medical education (Hood, 2009; Lattanzi & Pechak, 2011). Given both the growing inter-professionalization of health fields and the common contexts of graduate and professional education across the health fields, this study can inform other health professions as international service-learning continues to develop in those educational programs.

Challenges for international service-learning in medical education. Literature on international service-learning (ISL) in medical education reveals similar themes as research on domestic service-learning as well as additional factors of consideration in design and implementation. It is important to note that most of the literature reveals an

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American view of global citizenship and democracy (Bringle & Hatcher, 2011; Buck, 2011). Partnerships face a greater risk of being exploitive or not reciprocal due to power imbalances in developed and developing nations, the latter of which is usually the recipient of service (Bringle & Hatcher, 2011). Lewin and Van Kirk (2009) also argue that incompatibilities in goals, infrastructure, and resources can exacerbate power differentials between the giver and recipient of service. The ethical considerations and potential for harm are vast. Kahn (2011) wrote

Because ISL brings together various frameworks where colonialistic ideologies still linger, such as community service, international development, study abroad, and academic definitions and paradigms of observation, it is vital that all participants acknowledge and work through and against these imperialistic ideas and actions. (p. 115)

Practitioners must also take care in applying practices from one setting to another, and local context must always be considered (Buck, 2011). Since service-learning arose in Western contexts, it is rife with issues of ethnocentrism and imperialism and can aggravate global inequalities or colonial histories (Buck, 2011; Kahn, 2011). Kiely (2011) argued that research on ISL must consider the unequal socioeconomic and political impact of service-learning in different regions of the world.

Research on ISL is currently neglected in the literature on medical education (Stewart & Wubben, 2015). Other scholars criticize existing research on ISL for

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methodological weaknesses in failing to design effective measures of outcomes, relying on self-reports, failing to conduct longitudinal research, and for lacking theoretical rigor (Eyler, 2011). To date, ISL research has formed no consensus around the optimal length of time spent in service, descriptions of programs and implementation, the impact on community and host partners, impacts of long-term programs on participants and communities, and examining ISL in light of colonialist thoughts and power differences (Jones & Steinberg, 2011; Kahn, 2011; Stewart & Wubben, 2015).

Ethical issues of international service-learning in medical education. In medical education, a growing body of research is exploring ethical issues of medical students participating in ISL experiences. Just as ISL offers benefits unique to an international setting, it also introduces concerns and new challenges to the design of ISL programming. Growing attention to global experiences in health fields, particularly medical education, also introduces a number of ethical concerns specific to services provided in developing countries. Ethical considerations of the use of ISL in short-term medical missions and longitudinal curriculum in medical education have been explored more recently by a variety of scholars (Abedini, Gruppen, Kolars, and Kumagai, 2012; Bateman, Baker, Hoorenborg, & Ericsson, 2001; Drain et al., 2007; Pechak & Thompson, 2009; Thompson, Huntington, Hunt, Pinsky, & Brodie, 2003).

Craft (2016) posited that ethical frameworks direct behavioral norms and help determine what is appropriate or inappropriate, although there is no universal agreement

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of what constitutes ethical behavior. Attempts to meet the growing demands of medical students for international experiences may be overshadowing critical reflection of ethical issues and discussion of what is acceptable in ISL experiences (Hanson, Harms & Plamondon, 2011). Additionally, there is a pervasive notion that medical care is always beneficial and that unlicensed international students can supplement healthcare worker shortages in under-resourced countries (Evert, n.d.; Evert, Todd & Zitek, 2015).

Scholars have documented the harms that short-term medical missions and other ISL experiences have had on community sites and patients. Evert et al. (2015) found that medical students wrote incorrect prescriptions or misread charts due to language barriers, or assisted with surgery or deliveries without having a license to perform these activities. In these cases and many others, medical students may displace qualified and experienced professionals from the home country, can inflict direct harm to a patient, or can delay a patient's treatment (Ackerman, 2010; Crump & Sugarman, 2008; Hartman, 2016; Lasker, 2016b). Catering to visiting students can pull resources away from fragile health systems in host communities and create unsustainable treatment plans (Hartman, n.d.). Scholars have also found benefits to host communities, such as improvements in job satisfaction, local prestige, global connectedness, and leadership skills, but the potential for harm is far more likely in situations where patients and communities have less power (Kung, Richardson, Mabud, Heaney, Jones & Evert, 2016).

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Consistent with practices of domestic service-learning, there are several efforts to create ethical guidelines to dictate ISL program design (AAMC, 2011; Crump & Sugarman, 2010; International Federation of Medical Students' Associations, 2014; World Health Organization, 2015). Some scholars have argued that medical students should be held to the ethical standards from their home countries (Asgary & Junck, 2013), while others have claimed that new ethical paradigms are needed due to vast differences between clinical settings of home and host sites (Pinto & Upshur, 2009). A primary issue is balancing student learning needs with patient care, and scholars also debate the question of providing clinical care through ISL versus observing and learning about international health systems (AAMC, 2011; Drain et al., 2007). Sending institutions are encouraged to practice community-driven development, create long-term partnerships of engagement and investment, and evaluate health outcomes in host communities (Hartman, 2016; Kerry, Ndung'u, Walensky, Lee, Kayanja, Bangsberg, 2011; Lasker, 2016b; Powell, Gilliss, Hewitt, & Flint, 2010).

Relevance of Service-Learning as a Pedagogical Reform in Medical Education

Proponents of service-learning have argued that it is a powerful, transformational educational strategy. Service-learning is increasingly used in health professions education to address calls for reform, despite its challenges. Medical education can be considered a complex transformative process that requires learning situated in communities in order to construct professional identity and tie learning to context, social relations, and

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community practices (Mann, 2011). Empirical evidence of student outcomes suggests service-learning is a strategy that could address several criticisms of medical education, as outlined earlier, such as integrating cultural competence, professionalism, and awareness of international health systems; promoting community-oriented education with a focus on serving disadvantaged communities; and creating sustainable impacts on students and community, as well as encouraging broader civic and advocacy roles of physicians.

Many scholars have argued that physicians will need a broad set of skills to serve society's diverse patient populations. Stewart and Wubben (2015) wrote:

Issues of significance in this movement will be the reform of medical education curricula to match the reconfiguring healthcare system and the preparation of practitioners for primary-care medicine. Traditional, institution-based pedagogical models will need to transition to more community-centered models, in which healthcare professionals will accommodate contemporary life-styles and care for the community's health. (p. 115)

Stewart and Wubben (2014) further stated that "the changing nature of medicine and its practices begs new approaches to educating future physicians" (p. 153). Other scholars have more explicitly argued that "as a pedagogy, service-learning speaks to the core of needed educational reform" (Berry & Chisholm, 1999, p. 92). The pedagogical components of service-learning, such as active, experiential learning with a focus on

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community, suggest that service-learning could be a suitable strategy to prepare medical students to serve diverse communities and to develop leaders and global citizens.

Organizational Change Literature to Inform New Pedagogies

The advancement of service-learning in medical education depends on an understanding of the nature of organizational change in higher education, including where pressure for change originates, the processes of change, and sustaining change efforts. As a pedagogical strategy, service-learning is a departure from the norm of educational delivery in medical education, and wide adoption of its use would require changes in practices and behaviors within medical schools. By understanding theories of organizational change and reform, we can better understand the ways in which an emerging practice, such as service-learning, can be incorporated into a discipline that is rooted in tradition and established norms of practice. Many scholars who have studied service-learning have called for the practice to be examined through organizational lenses to examine processes of change, variation in programming, and how new practices become institutionalized within universities (Butterfoss & Kegler, 2015; Furco & Holland, 2013; Holland, 2000; Janke, 2013; Seifer et al., 2003). Connecting service-learning literature in medical education to literature on organizational change can help guide reform or transformation efforts related to more ethical practices in international service-learning.

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The next section of this review examines literature on organizational change within higher education. This section draws on literature from organizational studies as well as literature that is more specific to the environments within and surrounding higher education institutions, which provides context for considering change in medical schools. First, forces creating stability or resistance to change are examined, followed by perspectives of change, and finally, models of how practices can be institutionalized. The review concludes by highlighting gaps and implications that these bodies of literature have in the study of change or reform, such as implementing new pedagogical strategies, in medical education.

Common approaches to organizational change. Formal organizations, such as higher education institutions and medical schools, are systems of coordinated and controlled activity within networks of technical and boundary-spanning relationships (Meyer & Rowan, 1977). Formal organizations have been the focus of several studies that have observed, described, and proposed various theories relating to how organizations function in their environments, how processes work, how people inside them behave, and how the organizations change. There are two commonly used definitions of change in organizations studies: an observed difference over time, or a narrative describing how developments occur (Van de Ven & Poole, 2005). The concepts of ‘change’ or ‘changing’ can be investigated by looking at factors that produce organizational change, the process by which organizations undergo change, and the

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influence that the people in and outside organizations hold in relation to change. Change can be episodic or continuous, planned or unplanned, and can be studied by looking at variance or process at many different organizational levels (Poole, 2004).

One of the most fundamental theories of organizational change originated from Kurt Lewin (1947), whose work on change management dominated the field for over 40 years (Burnes, 2004). Lewin (1947) proposed a three-step model of change consisting of unfreezing, moving, and refreezing, which implied that change was planned and linear, as well as a theory that related individual behavior to the group environment. Lewin's work was the impetus of many theories of planned change and is foundational to the field of organization development. Other incremental models of change allow organizations to accumulate progressively more complex skills as they develop (Armenakis & Bedeian, 1999). There are many critics, however, who have argued that the three-step model is unrealistic, too simplistic, and only relevant to incremental and isolated change (Burnes, 2004). Burnes (2004) also claimed that Lewin's theory ignores power and politics, and is not an appropriate perspective to encompass radical, transformational, or bottom-up change. Additional models of change that have emerged since then include processual, punctuated equilibrium, and complexity theory (Burnes, 2004).

Models of continuous transformation have challenged the ideas of incremental and punctuated change and instead have proposed that organizations must change continuously in order to survive (Burnes, 2004). Many emergent change models rose in

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competition with models of planned change (Burnes, 2005; Poole & Van de Ven, 2004).

Emergent change involves ongoing adaptations and accommodations that can lead to fundamental change, even if those changes were not intended from the start (Weick, 2000). Small alterations in routines largely go unnoticed and are often described as forces of inertia, but theories of natural and emergent change treat these small changes as normal and necessary conditions for survival (Tsoukas & Chia, 2002; Weick, 2000).

Theories of emergent change also allow for the influence of culture and politics to be considered, including exogenous influences such as shocks, crises, or policy-driven changes, as well as social and human factors (Van de Ven & Hargrave, 2004). Van de Ven and Poole (1995) argued that there is no quintessential sequence of stages or steps an organization must follow to undergo change and highlighted that organizational change literature is full of complexities, paradoxes, and inconclusiveness. Many of these theories and perspectives are present in organizational life and may coexist, contradict, or compete, but each represents a lens that can illuminate different aspects of change (Burnes, 2004).

Along with the concept of change are two partner concepts: stability, and adoption of new changes, or institutionalization. These concepts mirror Lewin's model in which organizations unfreeze, move, and refreeze. When examining the integration of a new pedagogical strategy, such as service-learning, in higher education and medical education, it is beneficial to integrate literature from organizational studies and studies

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within higher education specifically that examine these steps intrinsic with change. The subsequent sections discuss forces creating stability or resistance to change, followed by perspectives of change, and finally, models of how practices specifically in service-learning can be institutionalized. An understanding of how these forces interact can serve as context for considering change in medical education.

Stability and resistance to change. Stakeholders in organizations are often hesitant to disrupt periods of stability and adopt new practices, taking on the risk inherent in organizational change (Haveman, 1992). Organizations are subject to strong forces both internally and externally; many internal forces are inertial and can resist or prevent change. When organizations change, Haveman argued, new communication patterns must form and new members must learn new routines, which causes an organization to divert resources from operating to restructuring. This can lower efficiency and performance, which is risky in modern society where stakeholders favor reliability and rationality (Hannan & Freeman, 1984). Institutions, including institutions of higher education, are often portrayed as mechanisms of stability and social reproduction (Suddaby & Viale, 2011). Stability is therefore an inherent partner concept in organizational change and can be viewed in a positive light as a survival tactic in a world that values reliability of organizational performance (Hannan & Freeman, 1984) or in a negative light as a hindrance to progress and development.

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Lewin (1943) depicted stability as a status quo that is maintained by certain conditions or forces. Practices that are supported by powerful actors within organizations and have high levels of social legitimacy will be resistant to change as power is activated to maintain the status quo (Beckert, 1999). Beckert (1999) wrote that “micropolitics within organizations can effectively block change even if actors agree that current strategies, rules, or structures are inefficient” (p. 792), which emphasizes the role of power and politics and their potential to impede change efforts that might even be intended to benefit the organizations. Culture relates to power and is also a strong stabilizing force in organizations. In settled or stable times, culture can cause processes to become prescribed formulas and make it difficult for organizational actors to create alternative strategies or processes (Beckert, 1999). The concept of stability as a representation of the status quo corresponds to the rise of critical service-learning and social justice-focused approaches that reflect the desire to change culture or attitudes and develop and incorporate new strategies and processes in medical education.

The concept of embeddedness is also a feature that can lead to organizational stability. Embeddedness is the degree to which organizational members are immersed in and possibly constrained by their context. A highly embedded actor might be unaware or not open to alternatives and may have little motivation to initiate or support change (Reay, Golden-biddle, & Germann, 2006). Embeddedness contributes to the idea that organizations, such as institutions of higher education, are socially constructed by their

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members and feature routine-reproduced processes or rules (Seo & Creed, 2002).

However, embeddedness can also provide an opportunity for change if actors redefine their context. Feldman and Pentland (2003) argued that embeddedness treats organizational routines as abstractions of an anthropomorphized organization. Although routines are often conceptualized as sources of stability and inertia, Feldman and Pentland claimed that this perspective minimizes the opportunity for stabilizing factors to become sites of flexibility and change.

In higher education institutions, stability is not always viewed negatively. Kaufman (1997) stated that organizational flexibility also involves risks to survival and can threaten established patterns in behavior and structure that lead to effective work. Kaufman argued that “a high degree of continuity is therefore as indispensable to the durability of an organization as the capacity to change is” (1997, p. 323). However, Hearn (1996) argued that survival may be attributable to an ability to adapt to emerging circumstances as well as to the characteristics of stability.

Stabilizing forces can create tension when new changes are proposed, especially pedagogical strategies such as service-learning that demand organizational resources to implement and sustain. As evidenced earlier in this review, however, many higher education institutions and indeed many medical schools have embraced service-learning practices to some degree, demonstrating that change is possible even in environments such as medical schools that are entrenched in tradition and established norms.

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Organizational Change and Higher Education

When considering the possibility of transformation or reform in medical schools, it is necessary to examine theories that guide change in higher education institutions, the structures within which medical schools are situated as these theories can provide context-based explanations for why change may or may not occur as well as point to strategies or steps that can promote and manage change efforts. Higher education represents a distinct environment with unique culture, norms, and structures; many practices in other industries may not be generalizable to higher education (Baldrige, 1983; Boyer & Crockett, 1973; Youn & Murphy, 1997). Baldrige (1983) wrote, “Colleges and universities are unique kinds of professional organizations, differing in many characteristics from industrial organizations, government bureaus, and business firms” (p. 38), which demonstrates the need to examine how theories of change in higher education overlap or diverge with theories of change in organizational studies.

Baldrige (1983) and Boyer and Crockett (1973) both described the culture of higher education institutions as filled with goal ambiguity, dominated by high professionalism and comprised of fragmented and decentralized academic units, which also influences medical schools. There is a low degree of task interdependence, and departments and colleges may often act in relative isolation outside of larger institution-wide budgetary decision making. The organizational pattern is made up of individuals rather than an integrated team, including faculty, who often identify more with their

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profession than their institution (Boyer & Crockett, 1973). Additionally, higher education institutions have historically been vulnerable to fluctuations in their environments, especially in terms of funding or broad policy decisions (Baldrige 1983; Hoover & Harder, 2015). These factors have implications related to how pedagogical strategies can be introduced, implemented, and sustained in medical education.

Many scholars credit Burton Clark with pioneering research that integrated higher education with organizational studies (Fumasoli & Stensaker, 2013). Other influential scholars are Robert Birnbaum, Lee Bolman, and Terrence Deal, whose theories on institutional cultures and frameworks guide a majority of studies on higher education. Birnbaum (1988) proposed a set of hypotheses of organizational life and change based off of four kinds of institutional cultures: collegial, bureaucratic, political, and anarchical. Bolman and Deal (1991) proposed four different frames to be used to study higher education, which were the structural frame, human resource frame, political frame, and symbolic frame. These frames can be applied to change initiatives as “both windows on the world and lenses that bring the world into focus” (Bolman & Deal, 1991, p. 11). Baldrige (1971) and Baldrige and Deal (1983) argue that the political frame is most appropriate for higher education, while Kezar and Eckel (2002) have argued that evolutionary and teleological models are most useful.

Despite differences of opinion in frameworks that should be applied to higher education, scholars of higher education have accepted and reinforced several concepts

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regarding the culture and environment of higher education as distinct organizations.

Weick (1976) conceptualized higher education as comprised of loosely coupled systems, where subunits operated largely autonomously without central coordination. Coupled events are responsive to each other but each unit preserves its own identity, and changes resulting from coupled events may be infrequent or slow. Weick (1976) as well as Fumasoli and Stensaker (2013) described university activities as characterized by ambiguity and uncertainty of goals, and Cohen and March (1974) described universities as organized anarchies. When applied to medical education, these frameworks can demonstrate how international service-learning efforts can be at risk if goals and priorities of the medical school are not clear or if there are multiple simultaneous but uncoordinated efforts.

The uncertainty and ambiguity present in higher education prompted Cohen, March, and Olsen to propose a theory in 1972 of decision-making in higher education that remains one of the most widely cited models: the garbage can model (March, 1982; Youn & Murphy, 1997). Because actions in one part of a university may only be loosely linked to actions in other parts, solutions often only have tenuous connections to problems, and decision-makers can meander in and out of political arenas where decisions are made (March, 1982). The garbage can model stated that any decision was a confluence of four streams: problems, choice opportunities, solutions, and participants. Decision makers, problems, and solutions all exist within the garbage can, and which

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factors are available at any given time and place influences the decision that is made.

This disorganized and seemingly random process of making decisions leads to policies that often are not implemented or initiatives that are not supported or sustained (March, 1982; Youn & Murphy, 1997). Size, type, and culture of a higher education institution also affects decision making within this framework.

Much of the historical literature on this topic continues to ring true in today's higher education systems. For example, Bragg (1977) argued that due to the history, traditions, and culture of higher education, many educational innovations fail. As evidenced in the discussion of stability and resistance to change and reflected in more contemporary studies, universities have often been found to be stable institutions where organizational change is difficult to initiate and implement (Louvei, 2013; Stensaker, 2015). Nonetheless, many in the higher education community in the United States have called for reform, including accrediting agencies; the Kellogg Commission, which is focused on examining the role of public education in the United States; and other national and professional bodies such as the Pew Trust and the American Association of Higher Education (Edwards, 1999). Many efforts to reform and change higher education across the United States are prompted by lower funding, desire for higher accountability, new technologies, or changes in the academic preparation and demographics of incoming students (Clarke, 1996). As described earlier, many of these calls for reform have also expanded to medical education as well.

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When change does occur in higher education, it often appears to follow patterns that have been captured in literature. New approaches are often initiated through central management under the banner of transformative strategic planning, or through ad hoc interventions in response to years of neglect (Lueddeke, 1999). Academics tend to feel excluded from meaningful, participatory decision-making, and change processes are often conceptualized and implemented as a series of stages even though organizational studies indicate that change processes are often nonlinear (Lueddeke, 1999). Formal structures in higher education lack flexibility to promote collaboration and informal structures remain widely underutilized (Hoover & Harder, 2015). Baldrige and Deal (1983) described a shift in how change in higher education was represented in the literature: the pressures of change had largely shifted from endogenous to exogenous, changes in response to growth had become changes in response to decline, and the tasks of administration had shifted from management to survival. Many of these elements remain relevant in today's context in which higher education is vulnerable to outside shocks, such as policy and funding decisions, and faces greater questions of accountability, quality, and equity (Hoover & Harder, 2015).

A historical study performed by Cameron (1984) reviewed ways in which change occurred successfully in higher education and proposed using a framework of adaptation rather than employing terms like innovation or reform. Organizational adaptation describes modifications or alterations in the organization, and also refers to a process

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rather than an event. Changes are instituted in higher education institutions in response to a lack of fit between the institution and its environment. Cameron highlighted that adaptation strategies are not common across organizations, particularly in higher education. Cameron also claimed that institutions would need to be both stable and flexible to adapt and change in response to new pressures.

A more recent study by Eckel and Kezar (2003) built on Cameron's proposal of a framework of adaptation and examined the process of transformational change in higher education institutions. Transformational change requires that organizations adopt new conceptual frameworks, beliefs, and meanings, and is a collective undertaking that involves the whole institution. This type of change typically happens through incremental processes over time leading to a change in the institutional culture. Eckel and Kezar (2003) found that a key promoting factor for transformational change was bringing people together, usually staff, who worked in departmental silos and typically did not work together to share diverse perspectives. Transformation is an open-systems process, influenced by outsiders, and requires more organizational actors rather than fewer. Eckel and Kezar (2003) highlighted the importance of creating widespread opportunities for collective involvement across the institution rather than leaving responsibility for leading change to higher level leaders.

There are several thematic representations of change that are consistent between organizational studies and studies of higher education, as well as points of departure.

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Creating a foundational and shared understanding of how change is represented in organizational studies, as well as higher education, illuminates areas of conformity and contrast that can be applied as a lens to medical education.

Power. In organizational studies, foundational theories related to power were proposed by DiMaggio and Powell (1983) in their seminal study on isomorphism, which is the similarity of process or structure between organizations resulting from normative, coercive, and mimetic forces. This theory illuminated the political struggle for organizational power and survival. Other foundational theories that are relevant to higher education and related to power include theories of resource allocation and power differentials between academic units, or departments, particularly in relation to budget allocation (Edwards, 1999; Hackman, 1985; Pew Foundation, 1996; Salancik & Pfeffer, 1974), as well as a theory of resource dependency proposed by Pfeffer (1992), which suggested that change efforts misaligned with sources of funding, prestige, or personnel in universities would not likely succeed. These historical theories point to departments, units, and other organizational features as points of reference to identify influential structures in higher education. More recently, Fumasoli and Stensaker (2013) highlighted the relevance of power in the study of change in higher education and argued that the literature in the field higher education is more attuned to power than in organizational studies, particularly in the realms of governance, decision-making, and leadership.

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One aspect of power that is distinct in the change literature in higher education as opposed to organizational studies is the influence of external forces (Kondakci & Van den Broeck, 2009). Several researchers examined policy reform or triggering events as determinants of change (Fumasoli & Stensaker, 2013; Simsek & Seashore, 2008). Policy reforms can directly affect the structure, resources, and practices of higher education institutions. National policy agendas and statewide political pressures have led to a plethora of studies on the external pressures of change in higher education. Additionally, Hogg and Hogg (1995) explored the power of industry, including business and government, which absorbs countless graduates of higher education each year. Dissatisfaction from employers can produce immense pressure for change in higher education.

Internationalization and globalization. Additional external forces affecting change in higher education include globalization and internationalization. Knight (2015) proposed an updated definition of internationalization and described the dynamic but distinct relationship between internationalization and globalization. Knight defined globalization as an environmental factor that affects “the flow of technology, economy, knowledge, people, values, and ideas . . . across borders” (p. 3). Scholars such as Qiang (2003) argued that institutions must ensure that they provide adequate preparation for students to engage in a globalized world. Internationalization is defined at national and institutional levels as “the process of integrating an international, intercultural, or global

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dimension into the purpose, functions or delivery of postsecondary education” (Knight, 2015, p. 2). Altbach, Reisberg, and Rumbley (2009) cited control as a distinguishing factor between the two concepts: internationalization is a strategy that institutions can use to respond to the demands placed upon them by globalization.

Knight (2011) argued that internationalization has influenced policy, practice, and research in higher education, as well as national policy frameworks. Responses to global pressures and the focus on internationalization can lead to different types of organizational change within a higher education institution. Institutions can take several approaches to internationalization, including establishing new activities, processes, and identities. Qiang (2003) emphasized the role of culture and organizational elements such as policy and procedure in an institution that can support sustainability of internationalization initiatives. Focusing on organizational elements as well as academic elements like program activities is critical to promote internationalization as being central to an institution’s mission. Internationalization can be viewed as central or marginal to institutional life, and activities can be random or systematic. Harden (2006) argued that an institution’s response to pressures of internationalization will reflect its values, priorities, and revenues. Viewing internationalization as a response to globalization that can drive change at multiple levels within an institution can help illuminate strategies that can be applied to other changes resulting from globalization, such as the incorporation of

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service-learning pedagogies in medical education to better prepare medical students for global health experiences.

Altbach et al. (2009) as well as Mwangi (2017) discussed the challenges of internationalization, which are also similar to challenges that service-learning strategies introduce. Altbach et al. (2009) believed that partnerships created by institutions with an internationalization agenda often create inequalities. Mwangi (2017) added that if partnerships are not created and maintained at an institutional level, they can become transactional rather than transformational and lose the qualities of mutuality and reciprocity.

Within the higher education field, globalization and internationalization also hold power and influence over medical education. Globalization has led to phenomena such as medical tourism, or outsourcing care across borders, and telemedicine (Hodges et al., 2009). Vaira (2004) described the influence of highly legitimated agencies such as UNESCO, the World Bank, the International Monetary Fund, and the Organization for Economic Cooperation and Development, and argued that these bodies frame contexts, imperatives, and structures that higher education institutions must accommodate in a global age. Harden (2006) argued that international activities in medical education have historically been marginal but are starting to affect core educational programming, and Hanson (2010) emphasized the need for new pedagogies and curricula to attend to new pressures in global health education. Hodges et al. (2009) also cautioned that

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globalization and internationalization of medical education can lead to inequities in the worldwide physician workforce.

Culture. In addition to power, culture is a prominent theme in higher education as well as in organizational studies related to change. Literature from organizational studies cites culture as a major factor that can lead to resistance of change efforts (Giorgi, Lockwood, & Glynn, 2015; Morrill, 2008), and is largely defined by work from Edgar Schein. Schein (2004) proposed that organizational culture is comprised of artifacts, beliefs, values, and underlying assumptions that guide and constrain people. Culture implies stability; shared group definitions that can survive even when members of an organization leave are forces that are not easily changed. Culture is partially influenced by the behavior of organizational leaders, but is also created and maintained by all organizational members through a complex group learning process. Schein (2004) also claimed that although culture is an abstract concept, its behavioral consequences are very tangible and that culture is a critical lens to consider in relation to change efforts in any institution.

Literature that is specific to higher education also foregrounds the role of culture as a significant impediment to organizational change (Awbrey, 2014; Morrill, 2008). In higher education, culture has been widely explored in relation to environment, mission, socialization, information, strategy, and leadership (Masland, 1985; Tierney, 1988). Tierney (1988) emphasized that a focus on culture of higher education institutions can

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illuminate tensions and the symbolic nature of actions. Viewing change through the lens of culture in higher education elucidates organizational culture's contribution to stability or resistance to change (Awbrey, 2014; Hoover & Harder, 2015; Sturm, 2006).

Although culture is viewed widely as a stabilizing force, it can also be used as a lens to illuminate change opportunities (Giorgi et al., 2015). In higher education, research has explored types of culture that encourage change, the ways stories help facilitate change, and how cultural elements such as vision or mission are modified in response to change (Kezar & Eckel, 2002). Viewing change through a cultural framework can highlight micro as well as macro responses to change, particularly through crucial issues of agency (Morrill, 2008). Giorgi et al. (2015) highlighted a recent shift in literature on culture from how organizational members are 'used' by culture to how actors can 'use' culture to their advantage, which represents agency that organizational members can exercise to influence their surroundings. These concepts are largely unexplored in the context of medical education, which is a unique environment within higher education.

Human agency. Many scholars have examined the role of human agency in organizational studies (Morrill, 2008). Giddens (1989) explored the relationship between structure and agents, and how social systems are reproduced by agents inside organizations. Tsoukas and Chia (2002) described this process as an ongoing series in which human actors try to make sense of the world and act accordingly, creating a perpetual state of 'organizational becoming' (2002). Reay et al. (2006) similarly claimed

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that microprocesses carried out by organizational actors would accumulate to produce small changes. These theories are especially relevant to this study, which places the organizational actors of international rotation coordinators at the center of the conceptual model that guides this study in the contextual environment of medical education, a context in which theories of human agency remain largely unexplored.

Organizational scholars have also asked questions regarding how actors inside an institution can effect change within them. Zietsma and Lawrence (2010) defined embedded agency as the process by which actors whose actions are constrained by institutions are able to create change in the organizations to which they belong. This paradox has been studied in the context of endogenous change and in response to shocks or triggering forces. Seo and Creed (2002) argued that human agency is an essential driving force of change within organizations and theorized human agency as a reconciliation between institutional embeddedness and transformation agency. When institutional arrangements become misaligned with the needs of participants, human agents can challenge the accepted order and introduce new processes, rules, and standards that redefine the social order within an organization (Seo & Creed, 2002; Suddaby & Viale, 2011). These theories and concepts have also not been applied widely to higher education environments and particularly in the context of medical education.

Human agency cannot exist without the people that work within organizations. Scholars have also explored more detailed concepts about individuals and their

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relationship to change. Meyerson and Scully (2016) proposed the idea of tempered radicals: people who are committed to an organization but may be at odds with the dominant culture of the organization. The radicalism drives them to challenge the status quo while their temperedness describes their proclivity to seek moderate changes within the organization. Additionally, organizational scholars have explored power held by lower organizational participants (Morrill, Zald, & Rao, 2003) as well as change driven by front-line workers or middle managers (Reay et al., 2006). The focus on embedded agency allows theories of change to explore the internal impetus for change as well as change that can happen from the margins of a traditional organizational hierarchy. In a review of studies, Zietsma and Lawrence (2010) found that in fact institutional innovators were usually in peripheral positions or positions that spanned across boundaries.

In organizational studies, Zietsma and Lawrence (2010) as well as Lawrence, Hardy, and Phillips (2002) have discussed boundary work leading to change. Mobility, technology, and globalization have blurred lines and boundaries between organizational units and illuminated interdependent networks between sectors (Morrill, 2008). Lawrence et al. (2002) argued that collaboration generates new practices, rules, and technologies that can diffuse beyond the boundaries of the collaborative group and be adopted by other organizations or even become new institutions themselves. Zietsma and Lawrence (2010) emphasized the role of actors through human agency that disrupted and recreated practices to effect change. In higher education, boundary work is often explored through

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the lens of interdisciplinary work, but is not widely theorized in discussions of organizational change. In medical education, institutional actors may span across the boundaries of sectors, organizations, or academic departments, which could create opportunities to disrupt practices and introduce changes such as new pedagogical strategies.

Scholars within higher education have also explored the concept of human agency, although not always under that classification. Higher education scholars have thoroughly examined the role of institutional leaders such as college presidents (Astin & Astin, 2000; Cohen & March, 1983) and faculty members (Boyer & Crockett, 1973; Clarke, 1996; Hearn, 1996; Kozma, 1985). Clarke (1996) outlined the characteristics of faculty members that could either promote or hinder change, including tenure, gender, time at the institution, and age. Clarke also claimed that faculty attitudes toward change depended on the specific endeavor proposed; therefore, it is difficult to generalize theories of change that focus on faculty behavior. More recent studies have also found that individual characteristics of faculty can affect adoption of new strategies, such as service-learning (O'Meara, 2013).

Additional studies in higher education related to organizational change have focused on the agency of others in the institution besides leaders and faculty members. In a formative study on institutional change related to workplace equity in higher education, Sturm (2006) called these members organizational catalysts and described their role as

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information carriers and bridge builders at pivotal leverage points within the university under study. These organizational catalysts provided accountability for change processes, formed communities of practice to span boundaries, and cultivated collaborative networks to transmit information across the university. Sturm's study suggested that organizational members who are not formal leaders could affect change processes, which has implications for this study, as its design places international rotation coordinators (who may be faculty or staff and not in formal leadership positions) at the center of the conceptual model.

Routines are another concept related to human agency that organizational studies have recently expanded upon. A theory of routines as opportunities for change is largely unexplored in higher education and medical education in particular, and merits attention as it provides guidance on how change might occur in context. Organizational scholars have proposed that actors within organizations can exhibit agency through enacting micro changes in routines. Feldman and Pentland (2003) proposed that routines create ongoing opportunities for variation, selection, and retention of new practices. In organizational studies, this concept has also been explored by Burnes (2005), who cited Brown and Eisenhardt (1997) and Beeson and Davis (2000) as additional studies that support the idea that routines can lead to continuous innovation. Feldman and Pentland (2003) argued that this view of routines integrates concepts of agency with structure and framework in organizations.

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Routines have also been examined in higher education, although more so in the context of stability rather than change. In an early study, March (1982) summarized literature on decision making and stated that the behavior often reflects the routine way in which people carry out their normal actions. However, March also wrote that “change in organizations is closely linked to mundane rules...rules are efficient and effective devices for allowing complex organizations to respond to variations in conditions” (1982, p. 7). Kezar (2014) and Lueddeke (1999) claimed that change efforts were often adaptations of existing practices. Seemingly stable structures with defined boundaries, such as work practices, processes, and routines, constantly confront organizational members who have the ability and agency to make modifications (Kondakci & Van den Broeck, 2009). From this micro perspective, change looks like incremental realignments among organizational participants; from a macro level, realignment from a significant number of participants can create fundamental changes (Seo & Creed, 2002). When applied to medical education, this concept suggests that individual actors, such as those who coordinate international service-learning experiences, may have the agency to create large change over time with the accumulation of small changes carried out in various aspects of policy or process design.

Concepts such as power, culture, and human agency are all necessary to consider when examining change efforts. Theories related to routines remain largely unexplored in higher education and may represent new lenses with which to view higher education and

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medical education, especially in the context of new pedagogical strategies. The common conceptualizations of change present in the literature from organizational studies as well as studies on higher education reveal themes that can be studied in the context of medical education to reveal lessons regarding the use of service-learning as a pedagogical reform.

Institutionalization of Change Efforts Related to Service-Learning

Another important concept in organizational studies and higher education literature related to change is institutionalization. Fligstein and McAdam (2011) argued that institutionalization is not necessarily a theory of change, and that institutional theory in organizational studies must be integrated with some conceptualization of power or agency to become a theory of change. However, institutionalization often occurs as a result of change when individuals adopt new practices that become new norms. These new practices gain widespread acceptance through legitimation until they are no longer considered new and are taken for granted, or institutionalized (Reay et al., 2006). In the literature on change in higher education, Jacobs (2002) defined institutionalization as change that has endurance over time and becomes part of everyday organizational activities. Institutional stakeholders revise policy, practice, and culture until new understandings are adopted into the organization's frameworks (Jacobs, 2002; Sturm, 2006), which relates to Lewin's foundational theory of organizational refreezing.

In contrast to the previous sections, institutionalization of change is a topic that has been examined by scholars interested in the implementation of service-learning as a

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pedagogical strategy. Many of these studies explore the ways in which service-learning approaches can be adopted across an institution of higher education after an attempt at change has been made. Paradoxically, scholars have studied institutionalization of service-learning in greater depth than they have the actual processes which create and propel change. The final component of this review integrates literature from organizational studies and studies within higher education and medical education regarding institutionalization of service-learning as a new pedagogical strategy.

In the context of service-learning, scholars have described the institutional role and responsibility in creating and sustaining community partnerships through institutionalizing service-learning practices, so that long-term relationships can be maintained. Due to growing evidence of the effectiveness of community engagement in teaching and learning in health professions education, service-learning is increasingly pursued as a programmatic and institutional strategy (Burrows et al., 1999; Hunt et al., 2011; Seifer, 1998; Seifer & Sisco, 2006). Community-university partnerships require infrastructure to develop and sustain relationships (Seifer et al., 2003), faculty incentives and reward structures (Israel, Schulz, Parker & Becker; 2001), and changes in the culture within medical schools to support collaboration (Calleson et al., 2002).

Another way that institutionalization of change in higher education is discussed is under the banner of sustainability. Sustainability depends on several individual, financial, organizational, cultural, political, and contextual forces (Buchanan et al., 2005).

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Sustainability has been regarded both as a problem to be solved (i.e., how do results from change initiatives endure) and as a condition to be achieved. This complicates the relationship between sustainability, institutionalization, and stability, as practices that remain static often become targets again for change in higher education.

Institutionalization can be both a process and an end state, which is not often explicated.

There is an abundance of literature on factors that promote institutionalization of service-learning in higher education. This section explores some of the most widely discussed aspects of institutionalization, with a specific focus on the role of faculty, followed by literature regarding sustainable partnerships and a critical perspective of community-university partnerships in service-learning. The level at which institutionalization of service-learning may occur at a university or college varies, but a focus on institutionalization reveals an important shift from emphasizing products of institutions, such as publications, to emphasizing impact (Fitzgerald, Bruns, Sonka, Furco, & Swanson, 2012). This section of literature is particularly relevant to discussions related to transforming or reforming medical education, because it highlights important factors that must be in place for new practices to be implemented and sustained. Any change efforts made to integrate more ethical practices in ISL, for example, would need to follow patterns of institutionalization to create lasting change.

Factors in institutionalization. The most common elements of institutionalization discussed are the relationship between the institutional mission and

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service-learning; support from leaders, administration, and faculty; community participation; and structural and programmatic issues (Furco, 2007).

Leaders. In medical education, formal leaders are generally responsible for prioritizing community-based education, and those in positional leadership are important for institutionalization of service-learning (Foreman, 1994; Holland, 2009; Seifer et al., 2000). Studies from scholars such as Ahmed, Beck, Maurana, and Newton (2004), Calleson et al., (2002), and Wallerstein and Duran (2006) have investigated the role of formal leaders in the institutionalization of service-learning. Those scholars all similarly found that lack of support from positional leaders is a barrier to institutionalization.

Data. The collection and use of data from service-learning is another practice that promotes institutionalization (Holland, 2009; Gelmon et al., 2000; Ramaley, 2000). Holland and Gelmon (1998) as well as Holland (2009) emphasized the need for continuous evaluation of service-learning. Ramaley (2000) and Driscoll (2008) also proposed that institutions should collect data on service-learning to provide insight for areas of change as well as to commit to a culture of evidence that provides lessons from continuous evaluation. Gelmon et al. (2000) cited lack of data as a major barrier to institutionalizing service-learning, especially in health fields, where the culture reveres evidence-based decision making. Lack of data on the impact on students, faculty, institutions, and community makes it difficult to justify the redirecting of institutional resources to sustain service-learning and to satisfy decision-makers (Furco & Miller,

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2009; Gelmon et al., 2000; Holland, 2009). Furco and Miller (2009) added that data collection allows for benchmark measures to be taken that reveal the level of institutionalization and ideally its increase over time.

Campus infrastructure and mission. The infrastructure in an institution devoted to service-learning also has a large impact on the institutionalization of service-learning (Bringle & Hatcher, 2000; Butin, 2006; Holland, 2009; Seifer, 1998). Butin (2006) stated that there must be systems in place to position service-learning as a curricular practice, funded by long-term grants, and tied to faculty rewards and incentives. Both Furco (2007) and Holland (2000, 2009) argue for the need for service-learning to be embedded in campus infrastructure, and other scholars cited allocation of credit hours and preparing community teachers as other structural challenges (Cauley, Jaballas, & Holton, 2000; Gelmon et al., 2000). Many campus-based centers dedicated to service-learning are linked to undergraduate education and might not have relationships with health professions schools (Seifer 1998) or are housed in isolation or outside of academic departments, making service-learning a co-curricular choice (Holland, 2000; Jacoby, 1999). In contrast, having dedicated staff members or a campus-wide coordinating entity for service-learning endeavors can promote institutionalization (Furco, 2007; Littlepage & Gazley, 2013).

The connection to the institution's mission is also a large factor promoting institutionalization. Furco and Holland (2013) argued that service-learning should be

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positioned as an approach to achieving institutional priorities; Holland (2009) also suggested that institutionalization can be enhanced through drawing connections between service-learning and institutional goals and that linking service-learning to forces that shape institutional priorities, such as accreditation and rankings, will have the greatest impact.

Funding. Another factor in institutionalization is the amount of available funding (Buys & Bursnall, 2007; Furco, 2007). Stater and Fotheringham (2009) found that greater incorporation of institutional funding and less reliance on external funding was more likely to lead to positive community outcomes. In medical education, several studies have indicated funding and fiscal concerns as a main barrier to community engagement in medical education (Butin, 2007; Commission on Community-Engaged Scholarship in the Health Professions [CCESHP], 2005; Seifer & Calleson, 2004; Stewart & Wubben, 2015).

In the literature, sustained funding seems to imply sustainability of the initiative. However, sustainability and institutionalization cannot be viewed only in terms of sustained funding. Butterfoss and Kegler (2012) cautioned:

Sustainability often is misunderstood as involving only sustained funding, since when the funding ends, so does commitment. However, sustainability does not depend on one strategy, policy, or approach, but instead requires developing community understanding and leadership to embed new solutions in institutions –

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literally, institutionalizing policies and organizational practices within community norms. (p. 324)

Long-term sustainability and institutionalization necessitate policy and systems change and ensuring that strategies can respond to environmental change.

Role of faculty. The role of faculty in promoting or hindering institutionalization is a prominent thread in literature regarding institutionalization of service-learning, both in medical education and higher education in general (Eyler et al., 2001; Foreman, 1994; Furco, 2007; Jacoby, 2015; Stewart & Wubben, 2015; Zlotkowski & Williams, 2003). Implementing service-learning takes time, organization, creativity, relationship-building, tolerance of ambiguity, and can be politically dangerous for faculty in that it may not be rewarded through traditional tenure practices (Butin, 2005). Scholars have argued that faculty are a significant predictor of institutionalization (Benigni Cipolle, 2010; Furco, 2007), and both Furco (2007) and Chism, Palmer, and Price (2013) argued that research on institutionalization must consider the relationship of faculty motivation and faculty development to use of service-learning.

Motivations of faculty to adopt service-learning strategies can vary based on individual characteristics such as gender or ethnicity, discipline, institution type, appointment type, and reward structure (Abes, Jackson, & Jones, 2002; O'Meara, 2013). Ramaley (2000), Butin (2005), and O'Meara (2013) all highlight the need for more research to explore faculty motivation and engagement with service-learning as it relates

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to institutionalization. Faculty rewards and incentives are also particularly important in health fields (Abes et al., 2002; Israel et al., 2001). Scholars have claimed that inadequate rewards, such as appropriate promotion and tenure policy that support community engagement, are a barrier that prevents faculty from using service-learning (Ahmed et al., 2004; Furco, 2007; Seifer & Calleson, 2004; Seifer, Wong, Gelmon, & Lederer, 2009). Inadequate release time also discourages faculty from pursuing relationships with community organizations (Calleson & Seifer, 2004; CCESHP, 2005; Seifer & Calleson, 2004).

Many scholars emphasize the need for faculty development to strengthen knowledge and competence in service-learning use (Chism et al., 2013; Eyler et al., 2001; Furco, 2007; Ramaley, 2000). Abes et al. (2002) found that the greatest number of faculty who were not already using service-learning but were more likely to in the future were in health professions, suggesting that health professions faculty are willing to overcome barriers and utilize service-learning as a teaching strategy. Cox et al., (2006) stated that faculty must be financed, trained, and mentored to use service-learning; Ahmed et al. (2004), Breitkreuz and Songer (2015), and Minkler, Breckwich, Vásquez and Miller (2008) similarly emphasized the need for training of health professions faculty to enable them to work in innovative, interdisciplinary, and culturally diverse environments. Butin (2007) argued that community engagement “has immense potential to improve that situation [of education], but today's faculty are not trained, prepared, or rewarded for

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linking their courses to their communities; grounding their research in real-life community dilemmas; or disseminating their research to non-academic audiences” (p. 37). It is worth highlighting that although the role of faculty is explored as a factor, there is little connection to the concept of human agency, and little to no research on staff in medical education who may be embedded agents capable of creating change.

Forming and maintaining partnerships. Another strong factor that can affect institutionalization is the formation and maintenance of partnerships. Reeb and Folger (2013) argued that institutionalization depends on the quality of the campus-community partnership, which is an often overlooked and undervalued relationship and is not as widely represented in the literature. Partnerships have unique elements, history, capacity, culture, missions, and challenges, so it is difficult to generalize research relating to partnerships (Holland & Gelmon, 1998; Ramaley, 2000).

Despite the challenges in studying partnerships, the relationship between the campus and community organizations is critical to institutionalization. Ramaley (2000) found that sustainability was directly associated with an ongoing feeling of reciprocity of knowledge and expertise. When institutions are perceived as untrustworthy or when the service-learning agenda is heavily dominated by the institution, partnerships can be threatened (Ramaley, 2000). Consistent principles of strong partnerships have emerged in the literature:

- Co-planning of agenda and activities (Jones & Wells, 2007);

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- Cultural humility and acknowledgement of institutionalized racism; shared power (Ellis & Walton, 2015; Jones & Wells, 2007);
- Evident commitment from leaders and others in the institution (Ellis & Walton, 2015; Jones & Wells, 2007; Leiderman, Furco, Zapf, Goss, 2002);
- Financial resources (Butterfoss & Kegler, 2015; Jones & Wells, 2007);
- Regular evaluation with a focus on outcomes (Torres & Schaffer, 2000).

Examining partnerships in medical education reveals a unique thread in literature on institutionalizing service-learning and other engagement practices. Boelen (2004) emphasized the role of institutionalization in health system development and proposed that accreditation standards for medical schools should illustrate input, process, outcome, and impact of partnerships. Attending to power imbalances in partnerships is particularly important in health fields. Labonte (2015) argued that ignoring power inequities can subtly harm the health and well-being of groups with less power, and that prioritizing health issues in a community requires analysis of social power relations. Many of these concepts parallel the considerations of ethical practices in international service-learning, suggesting a connection between approaches that can both promote ethical behavior in service-learning experiences as well as lead to long-term, sustained partnerships.

These organizational perspectives explored in conjunction with international service-learning as a new pedagogical strategy for medical education reveal areas where certain lenses can be applied to reveal new perspectives of change. It is useful to examine

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the theories and systems through which the pressures to advance a new pedagogical strategy are realized. The use of service-learning as an educational strategy in medical education is a departure from the norm, and any change efforts must account for the contexts surrounding medical education and the ways in which organizational components interact to promote or hinder change.

Gaps in the Literature

This review has several inherent limitations. This review was limited in scope to a historical overview of the major concepts in service-learning literature and organizational change to inform the context of medical education and was engendered by recent pressure for medical education institutions to adopt a strategy of service-learning to transform medical education in response to many criticisms. This effort was an attempt to integrate several bodies of literature that have the potential to inform future efforts of incorporating service-learning as a pedagogical strategy for reform in medical education rather than an exhaustive search of empirical evidence in each body of literature.

Although limited by the nature of the review, this analysis seeks to provide a deeper understanding of service-learning and the perspectives of organizational change that are salient in higher education and medical education. It also seeks to illuminate several areas for future study. By integrating the vast and divergent bodies of literature, this review was designed to fill a gap regarding the need to examine service-learning congruently with organizational change.

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Studies in this review rarely challenge the assumptions inherent in service-learning and attend to power and the potential to reinforce dominant deficit perspectives of others in service-learning use in medical education. Butin (2006) critiqued the lack of consistent interpretations of what the outcomes of service-learning should include. It is also not clear if the progressive and liberal agenda of service-learning is compatible with higher education and with medical education (Butin, 2006; Harris, 2016; Huddle, 2011). Hartman (2017) also argued that scholars should take a critical perspective, especially of international service-learning in medical education, to examine the power imbalances and inequities created by structural aspects of medical education. Many scholars also questioned the power inherent in setting a service-learning agenda: who defines service-learning narratives? What are the goals? Who will benefit? What are other unintended consequences? (Butin, 2005; Gardner et al., 2000; Kahne & Westheimer, 1996; Labonte, 2015; Ritz et al., 2014). As was stated previously, much of the focus in the literature centered on student learning outcomes and has been less attentive to important questions about service-learning's impact on the participating external community groups. In building understanding of the transformational potential of international service-learning in medical education and the practices that promote institutional change, it is essential to consider the perspectives of non-student stakeholders.

To secure a critical perspective, there is a need for more research from the community perspective itself as well as research that examines the concept of mutual

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benefit and outcomes in host communities (Sandy & Holland, 2006). The community perspective remains largely absent in the service-learning literature review, reflecting a dearth of literature from the perspective of communities receiving service and omission of an examination of the concept of reciprocal knowledge or development of mutual partnership. Although many other scholars have documented the need for research from the community perspective, few studies have included community as a lens (Brandenberger, 2013; Gelmon et al., 2000; Hunt et al., 2011; Sandy & Holland, 2006).

Bloomgarden (2017) critiqued the lack of perspectives from host communities and wrote that the field of service-learning “has witnessed little systematic and scholarly treatment of and progress around questions and challenges we face in our collective attempt to design and implement lasting, meaningful community impacts through community engagement partnerships with higher education institutions” (p. 21).

Bloomgarden described the scholarship around sustainable community-valued development as “woefully thin” (p. 21) and encouraged scholars to focus on questions of sustainability, mutuality, reciprocity, ethics, and alignment between design and practice. In international settings especially, a community perspective of the partnership is vital to illuminate improvements or harms done to the community infrastructure of healthcare delivery (Hartman, 2017).

Regarding an organizational perspective of service-learning, several gaps remain in the literature surrounding institutionalization. Butterfoss and Kegler (2015) suggested

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an organizational perspective to examine how new organizational practices created due to service-learning become institutionalized, and Janke (2013) argued that future research should look at an organization-level framework to determine why faculty and community partners remain together in service-learning partnerships over many years. Many studies also have failed to examine how service-learning is tied to a greater institutional mission of service or social accountability (Meili et al., 2011), or how service-learning impacts institutions and faculty instructors, particularly in health fields (Gelmon et al., 2000). Furco and Holland (2013) also argued that research should explore the process of organizational change and the way it can guide service-learning to achieve other institutional goals related to teaching and learning. Holland (2000) claimed that the “most urgent area for research is in organizational change processes and strategies” (p. 58).

Reviewing studies of organizational change in higher education also reveals several gaps in scholars’ understanding of how change does or does not occur in higher education settings, such as medical education. In organizational studies as well as studies of higher education, literature is often fragmented and not empirically supported (Clarke, 1996; Fernandez & Rainey, 2006; Parker, 1980; Tsoukas & Chia, 2002). Zietsma and Lawrence (2010), Lawrence and Hardy (2002), and Giorgi et al. (2015) have called for greater attention to boundary and practice work as well as collaboration in the context of change. Reay et al. (2006) called for further study of how micro mechanisms can produce

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macro change. Both concepts - boundary work and micro mechanisms - remain largely unexplored in higher education literature.

Specific to the literature on change in higher education, Dill and Friedman (1979) stated that most studies do not consider the loci of the impetus of change. Fumasoli and Stensaker (2013) also argued that national policy agendas have dominated organizational research and the views of managers and administrators in higher education have not been adequately explored, and that the relationship between educational content and practices and change is largely ignored. Awbrey (2014) stated that cultural aspects of change are also often overlooked in systemic change efforts. Together, these gaps suggest that important questions regarding reform in higher education and medical education should be asked regarding boundary work, micro processes, and views of managers, administrators, and staff who create and reinforce the culture of medical schools. While change has been studied in organizational studies first through external forces and later through internal forces, change in higher education has been examined in the reverse. Internal pressures or agents of change have been largely abandoned in lieu of studies on external forces, such as policy. Change literature in higher education that follows this pattern may have lost sight of aspects of human agency or culture that can promote reform efforts.

This review also reveals that many studies of change in medical education referred to Lewin (Lane, 2007; Shirey, 2013) even though various scholars from different

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disciplines have criticized Lewin's three-stage theory of change. There appears to be misalignment between scholarly discussions carried out in the literature regarding appropriate theories of change to apply in medical education. Kitson (2009) stated that there is an implicit adherence to the view that healthcare systems function like machines, which is in direct contrast to views of systems as organisms as well as perspectives from other scholars who emphasize the unique culture and environment of both higher education and medical education. Kitson's claim echoes the debate between viewing change as planned or emergent; the lens of change a scholar takes greatly influences the perspective of what change means for an organization and how it occurs. Hodges et al. (2009) also noted that there are few comparative studies in medical education or research on the impact and implications of international education in medical programs.

Implications of the Review on Future Research

For scholars or practitioners interested in the transformative potential of service-learning, or any other reform effort in medical education, weaving together the literature on change from organizational studies, higher education, and medical education can illuminate new areas for study. Future studies can examine the relationship between human agency and culture, the role of staff or other administration involved in the design or delivery of medical education, and the location where change efforts originated. Additionally, focusing on either boundary work or micro-processes can also supply new perspectives regarding where change occurs and how it becomes institutionalized. Future

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studies should also be situated in context, since culture remains a critical concept in most organizational change literature and because medical education represents a distinct environment within higher education. For those interested specifically in the transformative potential of service-learning in medical education and its role in ameliorating and addressing calls for reform, this review provides a foundation to build future studies upon as our understanding of change in medical education becomes more sophisticated to better train healthcare professionals.

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CHAPTER 3

Methodology

The purpose of this study is to examine ISL programs in medical education in the United States; more specifically, details about the variety of ways that international rotations are designed and implemented, barriers and facilitators to implementing ISL from the perspectives of stakeholders within medical education institutions excluding students, and to explore larger contextual factors that influence a medical school's participation in ISL. By doing so, this study seeks to contribute new scholarly knowledge relevant to scholars and practitioners of ISL in medical education in the United States. The existing research on international service-learning (ISL) in medical education is limited. As noted in the review of literature, several gaps exist in the literature around ISL in medical education, particularly in regards to institutional and organizational perspectives.

Mixed Methods Study

To answer the research questions of this exploratory study, I used a sequential mixed methods framework and a pragmatic approach (Creswell, 2014). An exploratory approach is appropriate in situations where there are high levels of uncertainty or an issue is not well understood, which is the case for ISL in medical education. An exploratory approach also helped to identify the institutional and organizational factors in which unexplored perspectives of ISL reside and illuminated salient factors that are relevant to future research. Although the study is exploratory, the mixed methods approach followed

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what Creswell (2014) described as a sequential, explanatory approach in which a quantitative portion is followed by a qualitative portion.

Mixed methods approaches were developed in the 1980s and 1990s based on research in the fields of education, evaluation, management, sociology, and health sciences (Creswell, 2014). A mixed methods study draws on strengths from both quantitative and qualitative approaches and minimizes the limitations of both approaches. Mixed methods studies can provide quantitative information to guide program design and improve practice, contribute to a knowledge base, provide basis for program expansion, and influence decision makers (Bringle, Hatcher & Williams, 2011). The qualitative data helps answer questions relating to how or why certain practices exist or are developed.

A sequential mixed methods approach helped triangulate and explain relevant factors of ISL in medical education and began with a quantitative portion administered through a survey followed by qualitative interviews with selected key informants identified through the quantitative sequence. I collected quantitative data in the first stage of the study, analyzed the results, and then used the results to build on to the qualitative phase in stage two of the study. The quantitative portion also informed the selection of participants for the qualitative portion; overall, the study featured a rigorous quantitative design in the first stage and purposeful sampling of interview participants in the second stage. I approached the design of this study with a practical lens, selecting methods with the intention of gathering the best types of data available to answer the research

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questions. This study did not intend to offer any conclusive solutions to issues in ISL in medical education, but rather served to highlight previously unexplored perspectives surrounding the use of ISL in U.S. medical education.

Bringle et al. (2011) claimed that the current dominant form of research on ISL is qualitative in nature, and that many studies are descriptive cases studies of single courses or programs that focus mainly on student outcomes. While quantitative approaches have often been stigmatized as being rigid, deterministic, or detached, a quantitative research design as the first step to a mixed methods approach can help make comparisons between factors that shape important experiences in ISL. Bringle et al. (2011) emphasized the value of performing ISL research across programs and campuses to increase sample size and heterogeneity to provide systematic information. Furco and Holland (2013) also recommended conducting larger-scale, multiple institutional studies with larger samples to investigate the process of organizational change and the way it can facilitate the advancement of service-learning.

This study was reviewed by the University of Minnesota Institutional Review Board and was determined to be research not involving human subjects, since the research measured program details from institutional stakeholders' perspectives and did not obtain private identifiable data about the individuals themselves. Following review, the study began with a quantitative approach in the first stage. I conducted a national survey of international rotation coordinators (IRCs) at all 185 medical schools in the

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United States and territories that had full accreditation status as of July 2018 (not provisional or pre-accreditation status). This number included schools that grant a *Doctor of Medicine*, or *MD* (accredited by the Liaison Committee on Medical Education), or a *Doctor of Osteopathic Medicine*, or *DO* (accredited by the American Osteopathic Association) in the continental United States and Puerto Rico. A closing question on the survey also asked the participants if they would be open to being contacted for a follow-up interview, or if they would like to identify an additional key institutional stakeholder who should be interviewed. A qualitative approach guided the second stage, in which participants who indicated their willingness to be interviewed in Stage 1 were interviewed using semi-structured questions. Further details regarding the procedures for data collection and methods employed for analysis are outlined in the subsequent section.

Definitions in Study

In different disciplines, international service-learning can be referred to in any number of ways. In medical education, the word “service” often signals direct patient care, although the service can be clinical or non-clinical, but may not always imply “service-learning”. More often, the term “service” refers to episodic activities that are more volunteer-based and do not feature reciprocal learning (Stewart & Wubbena, 2014). After reviewing the survey and interview design with test audiences representing medical school faculty and staff, I determined that the term “international rotation” was the most clear and direct term to use with study participants. “International rotation” refers to an

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elective, non-elective, or required experience in which a U.S.-based medical student travels to a different country (non-U.S.) to meet educational objectives as part of the medical program. The characteristics of international rotations are similar to those of international service-learning, and international service-learning can only occur through the experience of international rotations in medical education. International rotations are a primary vehicle in which international service-learning can be advanced in medical education, and the term “international rotation” can serve as a proxy for “international service-learning” with medical school audiences. See Figure 2, which displays a typical medical student’s path through the four-year program and how international service-learning can be experienced through international rotations.

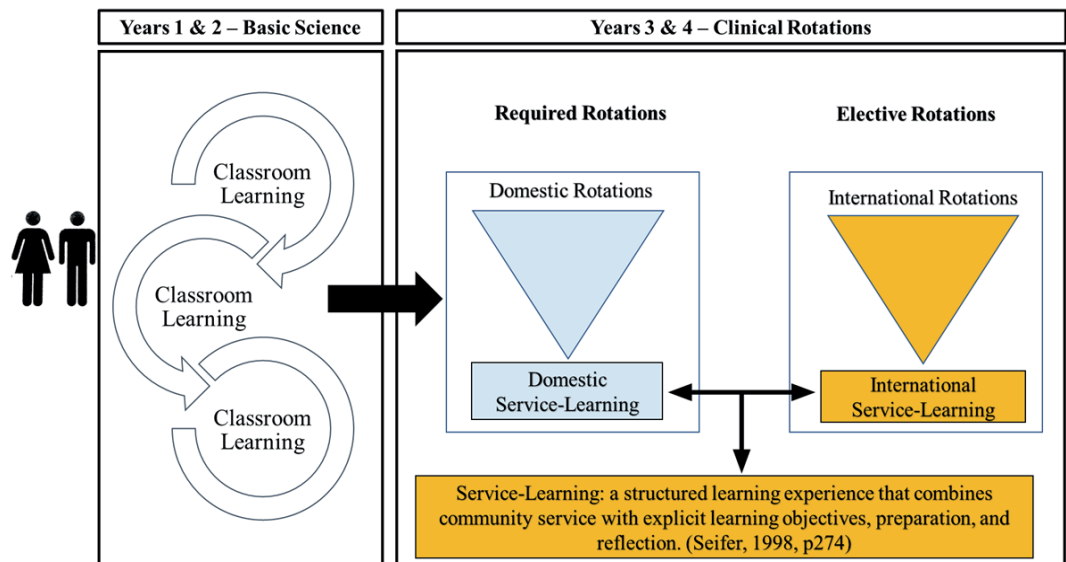


Figure 2. International service-learning opportunities in medical education

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Data Collection Procedures

As described, I used a sequential explanatory mixed methods approach for this study. In the first stage, a quantitative approach utilizing a survey examined relationships among variables (i.e., institutional characteristics and participation in service-learning) to explore associations between these variables. The second stage used semi-structured interviews which were analyzed using interpretive description, described in greater detail in the “methods for analysis” section of this chapter, to garner data that brought further explanation to the quantitative results. Each stage of the study is described in greater detail below.

Stage 1: Quantitative procedures and instrumentation. An exploratory quantitative approach guided the first stage of the study, which was appropriate due to the scant research on the international service-learning in medical education and the few existing studies on which to build. This issue is an emerging topic and the conceptualizations, instruments, and outcomes are still not well-defined in the literature. Stebbins (2001) believed that researchers must look at a phenomenon in broad, non-specialized terms to begin to understand or explore an emerging issue. A quantitative approach with a survey helped identify institutional and organizational factors in which unexplored perspectives of ISL reside and illuminated salient factors that are relevant to future research.

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To this aim, I created a survey that contained both closed and open-ended questions which focused on examining the nature of international rotations in medical education programs at U.S.-based universities, and asked respondents (coordinators of international rotations) about the barriers and facilitators to implementing ISL and the larger contextual factors that influence a medical school's participation in ISL. There were 35 items on the survey, and it was expected to take approximately 15 minutes for participants to complete the survey. The questions were designed to investigate implications revealed during the literature review (i.e., perspectives of coordinators, attention to organizational contexts and perspectives of service-learning, etc.) and were intended to collect information on four general concepts:

- 1) Details about the variety of ways that international rotations are designed and implemented as potential variables that may indicate a predilection for participation in ISL;
- 2) Barriers and facilitators to implementing ISL from the perspectives of IRC stakeholders within medical education institutions to highlight institutional contexts related to change and incorporation of new pedagogical strategies;
- 3) Larger contextual factors that might influence a medical school's participation in ISL (i.e., institutional contexts, Carnegie Community Engagement Classification, etc.);

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- 4) Non-identifying demographic information about the survey participant and home institution, such as type of university.

Given the national scope of this investigation, I chose a survey methodology to secure generalizable data from the total target population of institutional stakeholders within medical education. A survey allowed for data to be collected in a relatively short period of time, in consideration of the limited schedule that this population has for activities outside of teaching, research, clinical duties, administrative activities, and other related responsibilities. This approach was cost and time effective and is a common approach to studies performed in medical education.

After I created the survey, it was reviewed for face validity (e.g., ensuring appropriate definitions were used for terms such as clinical service versus non-clinical service) by three medical school stakeholders representing both faculty and staff, who have expertise in international community-based education, and was then pilot-tested for time requirements and usability by three other medical school stakeholders. After the pilot, I sent the survey to IRCs at all 185 medical schools in the United States as described above for stage one of the mixed methods design. This process captured the perspectives of staff members, which have not been adequately explored in the literature, as well as perspectives within the microsystem, mesosystem, and exosystem of each medical school.

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Figure 3 below summarizes the systematic process that I used to identify those individuals who were the intended recipients of the survey in their institution's equivalent of an IRC role. I searched each medical program's website for a list of organizational roles, and the faculty or staff member responsible for designing, developing, or implementing international rotations was identified. These positions had varying job titles and were identified by locating the contact person for coordinating rotations listed online. If a specific coordinator was listed for international rotations, I selected that individual. In schools where there were not specific coordinators listed for international rotations, I selected the coordinator listed for all rotations in general. The individuals identified through this process were those who might either influence or implement international service-learning in medical school. This process created a pool of 185 survey participants.

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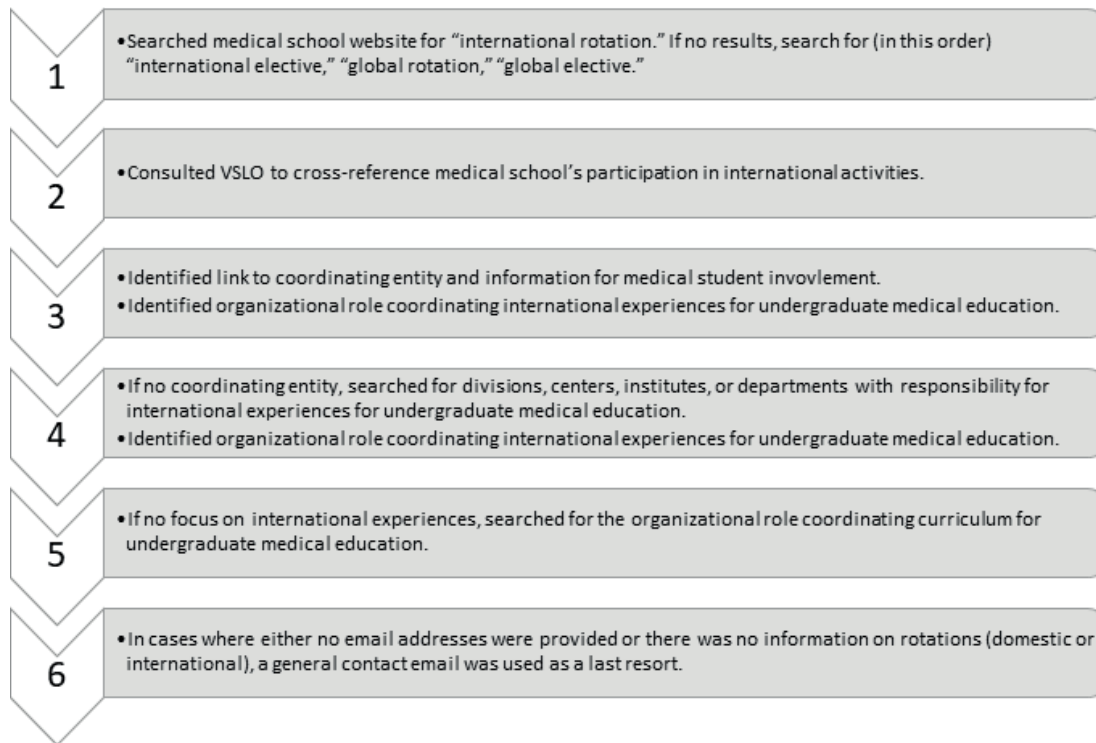


Figure 3. Identification process for survey recipients

A helpful resource during the identification process was a list published by the Association of American Medical Colleges called the Visiting Student Learning Opportunities (VSLO) database. VSLO combined two previously existing programs, the Global Health Learning Opportunities program, and the Visiting Student Application Service. The VSLO database represents a community of institutions that send and receive medical and public health students in locations away from their home institutions. I utilized the list of participating institutions published on the VSLO website to cross-

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reference against the list of 185 medical schools before determining that there was no international rotation coordinator (step 2 in Figure 3).

After identifying individuals, I created a list of survey recipients and assigned a code to each recipient to maintain anonymity of participants (e.g., 01, 02, 03, etc.). This coding system was also used for interview data, in cases where the survey participant was being interviewed. In cases where an additional stakeholder from the institution had been identified and agreed to be interviewed, an additional code was assigned (e.g., 04). After creating the coded system that identified individuals to receive the survey, I sent the survey electronically through Qualtrics, an online platform for survey design and management.

I distributed the survey in the fall of 2018 and it was open for a period of one month. In consideration of the limited schedule that this population has for activities outside of teaching, research, clinical duties, administrative activities, and other related responsibilities, a one-month period was cost and time effective and is a common approach to studies performed in medical education. An initial email to those participants identified through the systematic process detailed above included information about the study and a consent form, along with an individual link to the survey that was tied with an anonymous code. Participants were informed that their participation in the study was voluntary and that by completing the survey, they indicated their consent to participate in the study. Reminders were sent after a period of two weeks to those who had not

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completed the survey, and a final reminder was sent one week after that to outstanding recipients. One week after the final reminder was distributed, I closed the survey. All data were stored in the Qualtrics online platform, which is password protected and secure.

While the survey was open, I also independently collected information related to Carnegie Community Engagement classification. I identified how many of the higher education institutions that encompass the 185 medical schools have a Community Engagement classification. This process helped triangulate relevant information regarding the awareness of the macrosystem regarding service-learning and international community engagement in any cases where study participants may not be aware of their home institution's status, which was a question on the survey. It also served to identify and/or verify the macrosystem status as it may have related to particular barriers or facilitators related to the institutional context.

The questions on the survey were a mix of scaled responses and open-ended questions (see Appendix A). Where relevant, the survey included an operating definition of ISL: a structured learning experience that combines community service with explicit learning objectives, preparation, and reflection in an international setting across national country borders (Seifer, 1998). However, most of the survey content referred to "international rotations" as opposed to "international service-learning" to better fit the language used in medical schools to describe international education experiences. Following the first stage of the mixed methods design, I analyzed the quantitative data by

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identifying either outlier or extreme cases that stood apart from the rest of the data set or contrasted with themes that were widely represented in the literature review, and I identified common themes that a majority of survey respondents indicated on the survey. I then used the results to plan the second qualitative stage.

Stage 2: Qualitative procedures and instrumentation. In the second stage of the study, I used a qualitative approach featuring interviews to investigate quantitative results in greater depth in an explanatory process. The interviewees were selected from the same individuals who participated in the first stage of the study and who agreed to participate in the second stage. The intent of this sequential design was to explore the concepts from the quantitative results in greater depth through qualitative interviews (Creswell, 2014). A closing question on the survey asked if the respondent was willing to be contacted for an interview. Responses from the survey were kept confidential and separate from the interviewees but were used to design the semi-structured follow-up interview questions. In addition, snowball sampling was also included for the qualitative interview portion of the mixed methods study to cast the largest possible net for data collection purposes. A survey respondent could recommend the name of another individual in the medical program who might be an eligible candidate for an interview. The respondent was asked to recommend an interview candidate who met eligibility requirements of being a faculty or staff member involved in the design, development, or

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implementation of international rotations, or could influence the design, development, or implementation of international rotations.

To facilitate snowball sampling in the qualitative phase, I asked survey respondents to submit a name, job title, approximate length of time in that position, and email address of another individual, if they chose, and then provided an open comment box to provide an answer as to why the respondent believed that individual should be considered for an interview. To avoid possible bias, I then applied the criteria listed above to judge if the snowball sample responses should be included in the qualitative interview phase, such as whether or not the individual recommended strongly supported international rotations, was heavily involved in the design or implementation, was aware of details of the medical program and international rotation, had been part of the program for longer than a year, and was not a student. Solicited respondents were not allowed to forward the questionnaire to another at the institution but could indicate in the survey the name and contact information for additional participants through the snowball sampling option. Five additional potential interviewees were identified and vetted through this process and three of those were added to the master list of interviewee candidates. In total, I identified 19 candidates for interviews. To maximize data collection and potential for either saturation or emergence of contrasting themes, I invited all 19 candidates to interview.

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After identifying the interview candidates and ensuring that all met the eligibility requirements outlined above, I distributed a link via email to an online calendar through which the candidates were able to book one-hour sessions with me and choose either phone or video interviews. Sixteen interviews were originally scheduled, and 15 interviews were conducted. I conducted 14 interviews by phone and one through WebEx, an online video conference program. The interview protocol followed a semi-structured approach, in which I asked the interviewee to explore a series of themes that emerged from the survey response, in addition to asking a series of foundation questions for each interview regardless of survey responses. Each interview lasted 45-60 minutes. I recorded all of the interviews and stored the recorded data in UMN's Box Secure Storage. I transcribed the interview recordings verbatim, removing all identifiers except the school code that linked the interview responses to the survey responses. A list of interview questions is included in Appendix B. In all cases, the questions focused specifically on international rotations at the medical program, including components that students must complete, steps taken to identify suitable rotation sites, motivations for the medical program to include international rotations, and the perceived benefits and disadvantages of international rotations.

My approach in this study is consistent with two other similar exploratory studies, one of which investigated the goals of U.S.-based organizations that implement global health trips (Lasker, 2016b) and the other which explored international service-learning

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in physical therapist education in the United States and Canada (Pechak & Thompson, 2009). In Lasker's study (2016b), her aim was to explore the organizational goals of third-party entities that organized global health experiences, which had been previously unexplored. There was no comprehensive list of all such organizations, so Lasker undertook an internet search in which she examined the organizations' websites to identify contacts for an initial survey, which she later followed up with interviews. In Pechak and Thompson's study (2009), a survey was mailed to accredited physical therapist education programs in the United States and Canada that were included in a database from a professional association that listed all accredited therapist education programs.

Methods of Analysis

Following the procedures that are typical for an explanatory mixed methods design as described by Creswell (2014), I first analyzed my quantitative data and then used those results to plan for the qualitative phase. My analysis both informed my sampling procedures for the qualitative interviews as well as contributed to the types of qualitative questions I asked during these interviews. After an independent analysis of both sets of data, I analyzed how the qualitative results helped expand on or explain the quantitative results. Throughout my analysis of both phases, I used constant comparison and additional other methods from inductive analysis to inform an interpretive

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description of the survey and interview data. These methods are described in greater detail below.

Inductive and Interpretive Analysis

Before presenting the procedures I employed for analyzing the quantitative and qualitative data, it is important to describe the nature, purposes, and approaches that undergird inductive and interpretive analysis. My analysis was informed by basic interpretive methods, which are used frequently for qualitative studies which “simply seek to discover and understand a phenomenon, a process, or the perspectives and worldviews of the people involved” (Merriam, 2002, p. 11). Qualitative data often helps to validate, interpret, clarify, and illustrate quantitative findings (Miles, Huberman & Saldaña, 2014). Findings from these types of studies can be in the form of themes, categories, or concepts that cut across the data, and are presented in a rich, descriptive account.

Both Cooper and Endacott (2007) as well as Kahlke and Hon (2014) suggested that a generic approach to inductive analysis is appropriate for studies that might draw on an established methodology but deviate from its intent, such as using processes common to grounded theory but without proposing a new theory. Distinguishing aspects or philosophical underpinnings of methodologies such as grounded theory or phenomenology may limit the methods’ applicability, particularly in mixed methods studies (Cooper & Endacott, 2007). Inductive analysis on its own is an iterative process

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that captures key themes and is guided by the study objectives (Thomas, 2006).

Consistent with the pragmatic approach of the overall mixed methods study design, inductive analysis can often help uncover relevant research questions and issues for follow up research (Bhattacharjee, 2012). Thomas (2006) and Cooper and Endacott (2007) noted that inductive analysis is commonly used in health and social science or evaluation research, particularly for pragmatic approaches to problems. Caelli, Ray, and Mill (2003) also stated that general inductive analysis is a growing trend in applied disciplines in which a theoretical framework guides analysis and patterns or themes are used to help further clarify the framework.

Kahlke and Hon (2014) cautioned that studies using a generic inductive approach are often ill-defined and may mix philosophically incompatible methodologies or approaches; however, the authors cited a well-defined method that falls under a generic inductive approach in contrast. Interpretive description, an analytic method proposed by Thorne, Kirkham, and MacDonald-Emes (1997), is an approach that draws on experience and evidence in a pragmatic, highly contextualized approach to analysis.

Interpretive description. Interpretive description is a method that was proposed by Thorne et al. in 1997 to meet a need in nursing research for a practical approach to generating findings that would translate back into the clinical practice setting. This method focuses on generating knowledge to inform practice and addresses complex experiential questions in health disciplines (Thorne et al., 1997). Thorne, Kirkham,

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Reimer and O’Flynn-magee (2004) claimed that interpretive description evolved as practice-based disciplines demanded methods more responsive to questions based on experience and interventions. Interpretive description was proposed to derive analyses based on patterns within and between individual cases within a particular phenomenon under study (Hunt, 2009).

Interpretive description can involve multiple strategies of data collection, and although it was developed in the nursing field, it has application across settings where research should be highly contextualized (Kahlke & Hon, 2014; Thorne et al., 2004). Thorne et al. (1997) emphasized the importance of grounding interpretive description in existing knowledge to link research with the work of others in the field. An analytical framework should first be constructed after examining current knowledge to orient the inquiry, anticipate boundaries, and create a foundation upon which to build the design logic and inductive reasoning for interpreting meanings. Sampling and data collection follow logically from research questions informed by the framework (Thorne et al., 2004).

Analysis procedures allowed for synthesis and recontextualization in addition to sorting and coding, which can lead to a rigorous analytic process that moves beyond the initial framework (Thorne et al., 1997; Thorne et al., 2004). Constant comparison methods are used throughout analysis to generate a broad understanding of the data (Hunt, 2009; Kahlke & Hon, 2014). Products of analysis must have potential to be

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applied back to the practice setting and must generate knowledge that is relevant; study findings should be ordered to form a coherent and professional narrative (Hunt, 2009; Kahlke & Hon, 2014; Thorne et al., 1997; Thorne et al., 2004).

Constant comparison. Constant comparison methods run throughout an interpretive description approach. Constant comparison is a method that systematically compares all data in the set to seek key issues and categories of focus (Fram, 2013; Glaser, 1965, 1978). Constant comparison is an iterative and inductive process of constant re-coding and comparing data to other incidents in the set to investigate relationships (Glaser & Strauss, 1967). It is most commonly used as part of a grounded theory approach but when used outside of grounded theory, takes a pragmatic approach to answering research questions and analyzing different perspectives on central issues (Dye, Schatz, Rosenberg & Coleman, 2000; Fram, 2013). Many other methodologies utilize grounded theory to develop ways of understanding phenomena within the context in which they are experienced (Thorne, 2000).

Strengths and limitations. These methods have inherent strengths and limitations. Interpretive description is oriented toward producing findings relevant to practice and a coherent logic originating from research questions grounded in an orientation to current knowledge in the field (Hunt, 2009). This relationship between interpretive description and clinical practice orients data analysis toward findings that will assist professionals in their practice. Interpretive description is not a strong method

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for theory development but does provide a clear approach for deriving findings to answer focused, grounded questions (Thomas, 2006).

Interpretive description is less widely known outside of health disciplines and there are limited resources for situating the methodology or consulting as examples (Hunt, 2009). As with other qualitative methodologies, all participants might not be credible or knowledgeable about the subject of interest (Thomas, 2006). However, Kahlke and Hon (2014) wrote that “concerns can be addressed through a clear thinking-through and justification of research choices and linkages within the study” (p. 48).

Stage 1 analysis procedures. For quantitative data from scaled questions, I used the Statistical Package for the Social Sciences (SPSS). I calculated frequencies, percentages, means, and standard deviations for nominal data. My data set was not large enough to perform meaningful regression or predictive analyses of statistical significance in order to determine if certain institutional or demographic variables predict certain characteristics of ISL initiatives.

My first research question investigated the key characteristics that international rotation coordinators identified within international rotations at U.S. medical schools and the structural and programmatic components necessary for these rotations. To answer this question I calculated frequencies, percentages, means, and standard deviations for the questions that asked respondents to select certain characteristics of their rotations (e.g., number of rotations a student might take during their academic career, if additional

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funding was required for international rotations, in which types of countries international rotations typically occurred, etc.). This descriptive data provided robust details about the characteristics of various international rotations and allowed me to identify the prevalence of certain features across medical programs.

To address my second research question, which explored barriers and facilitators to implementing international rotations as well as broader factors that might drive or deter a medical school's participation in international rotations, I calculated the means and standard deviations for a number of factors that respondents were asked to rate based on their level of influence (e.g., funding, availability of community sites, support from leadership). I also exported data from open-ended questions in the survey, such as those that asked respondents to answer, to the best of their ability, why they believed their medical programs offered or did not offer international rotations, to be coded and analyzed with other qualitative data in the second stage of my analysis, which is described in greater detail below during Stage 2 analysis.

My final research question explored potential relationships between components in the medical school or institutional environment and a medical school's inclusion of international service-learning in international rotations. To answer this question, I primarily focused on a survey question that asked respondents to select certain activities that international rotations included. Based on the literature review and the definition of service-learning proposed by Seifer (1998), I grouped responses into categories based on

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whether or not components of service-learning were present in the international rotations. I then analyzed the related frequencies, percentages, means, and standard deviations for the survey questions in each group to determine if certain program characteristics were more present in the group that included components of international service-learning. This process is described in greater detail in Chapter 4.

Stage 2 analysis. To analyze data from phase two of the study (i.e., interviews), I used interpretive description on qualitative data to generate findings that would translate back into the context to inform practice. My analysis was an iterative process in which I closely examined interview transcripts and open-ended responses from the survey. I relied primarily on inductive coding, beginning with close readings of the texts and considering multiple meanings (Thomas, 2006). During analysis, I asked myself, “What is happening here? What am I learning about this?” (Thorne et al., 1997).

As I noted patterns in the data I created codes and definitions. For example, codes such as “characteristic” captured what IRCs described as features of a common rotation at their medical programs while sub-codes like “activities,” “pre-departure,” “post-travel,” and “evaluation” helped group responses into tighter thematic categories to address my research questions. I also coded emergently as I identified new patterns in the interview data; for example, I created a code for “contrast” after noting that several interviewees described their international rotations by comparing them to other activities in contrast, such as medical brigades or community service. Later in my analysis, I also

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coded segments of the text deductively to predetermined categories that corresponded with my research questions (e.g., “barriers,” “facilitators”).

When reviewing each transcript or open-ended response set from the survey, I looked for patterns in responses, areas of similarity across data sets, or great differences. I also examined the specific examples that IRCs provided in response to various questions as mini-cases, or when IRCs referred to a situation or event in contrast or as a type of foil to their program’s international rotations as noted above (e.g., medical brigade, community service). One interviewee, when asked to describe disadvantages of international rotations, compared shorter term non-medical trips with international rotations and stated, “Is it so much a disadvantage in regards to the rotations?...I feel that way about that around service trips.”

Once I began to generate groups of coded text that revealed common themes, I also examined the institutional characteristics and contexts of like or dissimilar responses. If a response was off-topic to the question at hand, I evaluated if the response better fit another question or category, or if it was relevant to my research questions. If the responses were tangential and not relevant to my research questions, they were not coded (e.g., descriptions of processes followed at a U.S. medical program to host visiting delegations of international faculty).

In first cycle coding, I primarily used an inductive coding process to create a broad inventory of categories, such as “characteristic,” “advantage,” “disadvantage,”

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“partner,” “third-party organization,” and “system,” to point to environmental or contextual factors that IRCs described. I then compared these against my conceptual framework and list of research questions to organize these codes into any of the predetermined set in which they fit, and also closely examined the data within each category to determine if data needed to be separated into subgroups for closer evaluation. For example, I examined coded data within the “system” category and created sub-codes for the data that fit various levels of the conceptual map that guided my study (microsystem, mesosystem, exosystem, macrosystem). I had several new categories in addition to my predetermined list as a result of inductive coding, and those categories guided my second cycle of coding. In total, I performed three rounds of coding, each time synthesizing and recontextualizing to cluster the codes and categories.

I compared coded sections back against the original interview transcripts or survey data, constantly comparing coded sections against each other and against their context in the original data file. I wrote memos and kept an analysis log as I progressed, making note of patterns, evaluative comments, and relationships to my research questions. This coding process generated a rich, curated set of data to analyze that allowed me to examine the individual responses, compare across the data, and focus on institutional and environmental contexts that surrounded themes and patterns in the data.

For all qualitative coding, I used the software “NVIVO,” which is a qualitative data analysis (QDA) computer software package produced by QSR International. It has

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been designed for qualitative researchers working with rich text-based and/or multimedia information, where deep levels of analysis on small or large volumes of data are required.

Limitations

This study has potential limitations. With any survey research, frequencies may be overstated or not representative due to nonrespondents, or there may be discrepancies that are provided by multiple participants at the same institution or various interpretations of terms used in the study, such as what constitutes an international rotation. In addition, the sampling method may exclude participants if international service-learning is not organized under any academic or co-curricular units. Janke (2013) wrote that looking at an organizational level can be difficult because the person who

speaks for an organization is not always clear, particularly in the case of service-learning partnerships, in which boundary spanners are often not formally designated but are faculty who elect to engage on behalf of their students, their institutions, and themselves. (p. 599)

Although I had an acceptable response rate to the survey during the quantitative phase of the study, the data do not necessarily represent perspectives of all medical schools in the United States, which may be influenced by unique contexts not represented in this data.

Interpretive description, which is used to analyze the data, is not a widely known method outside of health disciplines. Although there are fewer resources to consult as

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examples, scholars have endorsed the focused, grounded findings that interpretive description produces that are relevant to practice settings (Thomas, 2006).

Due to time and resource constraints, the focus on organizational and institutional perspectives, and the exploratory approach, the key perspective of community host populations could not be included in this study. The data also may not represent all the international rotation programming in U.S. medical schools. However, as an exploratory study conducted with a sequential explanatory mixed methods approach, it can provide insights into how medical schools in the United States and its territories currently approach, plan, and implement ISL experiences.

CHAPTER 4

Findings

Since the intent of this mixed methods design was to use the qualitative data gathered in the second phase of the study to further explain and explore the quantitative data gathered in the first phase, the findings from of each analysis phase are presented concurrently. The results are presented in response to each of the study's research questions, with the qualitative data points used to support and explain the quantitative data. In addition, through the analyses, I kept in mind the pragmatic intention of my study and, in turn, I place specific emphasis on the findings that lead to applicable insights for the field. The chart in Appendix C demonstrates the way in which my quantitative and qualitative data worked in conjunction to address the study's research questions. There were no extreme cases or outliers in either the quantitative survey data or the qualitative interview data.

Respondents

The survey was sent out to 185 international rotation coordinators from medical schools in the U.S. and Puerto Rico, encompassing 34 schools granting a Doctor of Osteopathic Medicine degree (DO) and 151 granting a Doctor of Medicine degree (MD). A total of 57 responses were received, for an overall response rate of 31%. The response rate to each particular question on the survey varied depending on which questions the respondents answered or intentionally left blank. Figure 4 displays the survey distribution and respondents across the U.S. and Puerto Rico.

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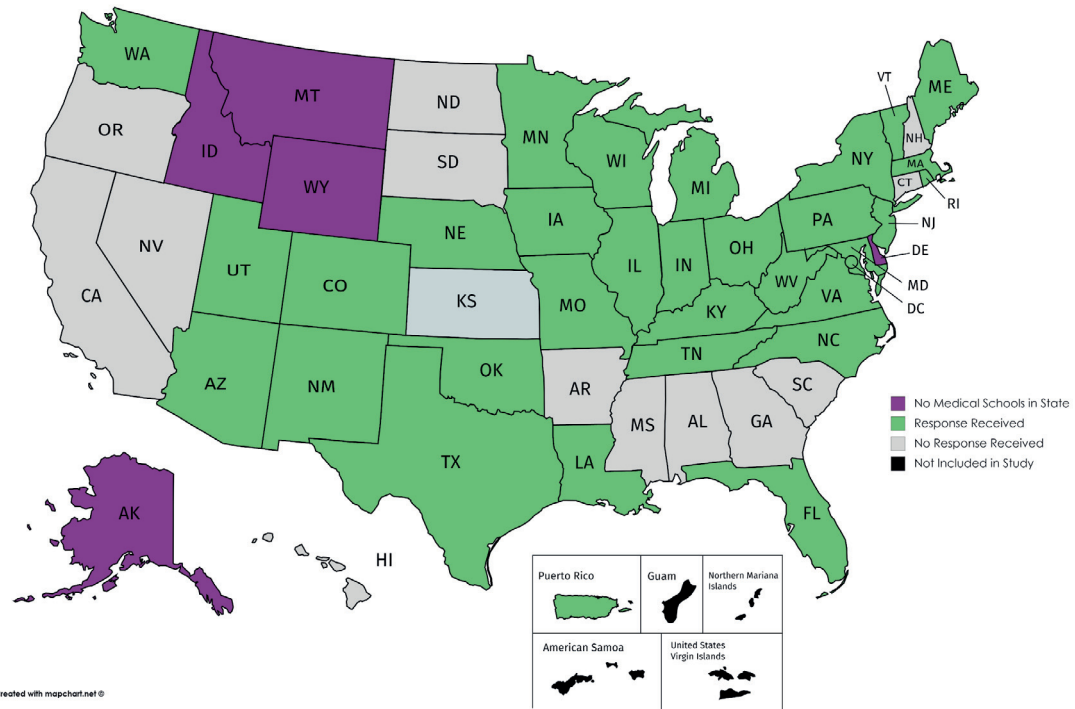


Figure 4. Survey distribution and respondents

The survey was designed to be completed by the lead coordinator of the institution's medical education international rotation program. Demographic information was collected about the individual respondents. Each respondent was also asked to provide information regarding the institutional characteristics about the medical program or education institution. Slightly more than half of the respondents who indicated their role served as staff at their medical program, while slightly less than half of the respondents served as faculty members (see Table 1).

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Table 1		
<i>Respondent Roles</i>		
<u>Role</u>	<u>Number of Responses (n=44)</u>	<u>Percent</u>
Staff at medical program	23	52%
Faculty at medical program	21	48%
Academic Leadership	8	38%
Full professor	2	9%
Associate professor	5	24%
Assistant professor	6	29%
Adjunct/Affiliate Professor	0	0%

The number of years of experience in their roles varied substantially, ranging from one year to 33 years, with an average of eight years in the particular role (SD=7.3 years). Of the 43 respondents who indicated the nature of their role, 58% (n=25) had a joint appointment, job, or affiliation with another department or academic unit. In addition, only two out of five (n=17) respondents belonged to a professional association related to planning or implementing international rotations (for example, associations such as the Consortium of Universities for Global Health), while three out of five (n=26) did not, out of a total of 43 who responded to that question. The overwhelming majority of the respondents were Caucasian/White, with 75% (n=36) indicating they are Caucasian/White. In contrast, only 6% (n=3) indicated they are African American, 6%

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(n=3) Hispanic/Latino, 4% (n=2) American Indian/Alaska Native, 4% (n=2) Asian, and 4% (n=2) multicultural.

The majority of responses came from medical programs located at public institutions (see Table 2).

Table 2		
<i>Institutional Characteristics</i>		
<u>Characteristic</u>	<u>Number of Responses (n=57)</u>	<u>Percent</u>
Public University or College	28	49%
Private University or College	22	39%
<i>Did not indicate</i>	7	12%
MD-Granting	36	63%
DO-Granting	11	19%
<i>Did not indicate</i>	10	18%

In addition, out of 57 respondents, 46% (n=26) indicated they were from a research university and one respondent (2%) was from a faith-affiliated institution. For categories that could have more than one answer (i.e., an institution may have multiple campuses), there were 24 instances of an urban campus, 10 of a rural campus, and six of a suburban campus. Within the 57 responses, 77% of respondents (n=44) indicated that their medical program does offer international rotations and 12% of respondents (n=7) indicated that their medical program does not offer international rotations. There were six participants that did not provide an answer to this question.

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In phase two of the mixed methods design, 19 individuals were invited to interview, representing all of the respondents who indicated their willingness to be interviewed as well as snowball sample selections who met eligibility criteria described in the Chapter 3. Ultimately, 15 individuals who represented 13 medical programs agreed to participate in an interview. Figure 5 displays the locations in which the interviewee participants' medical programs are located.

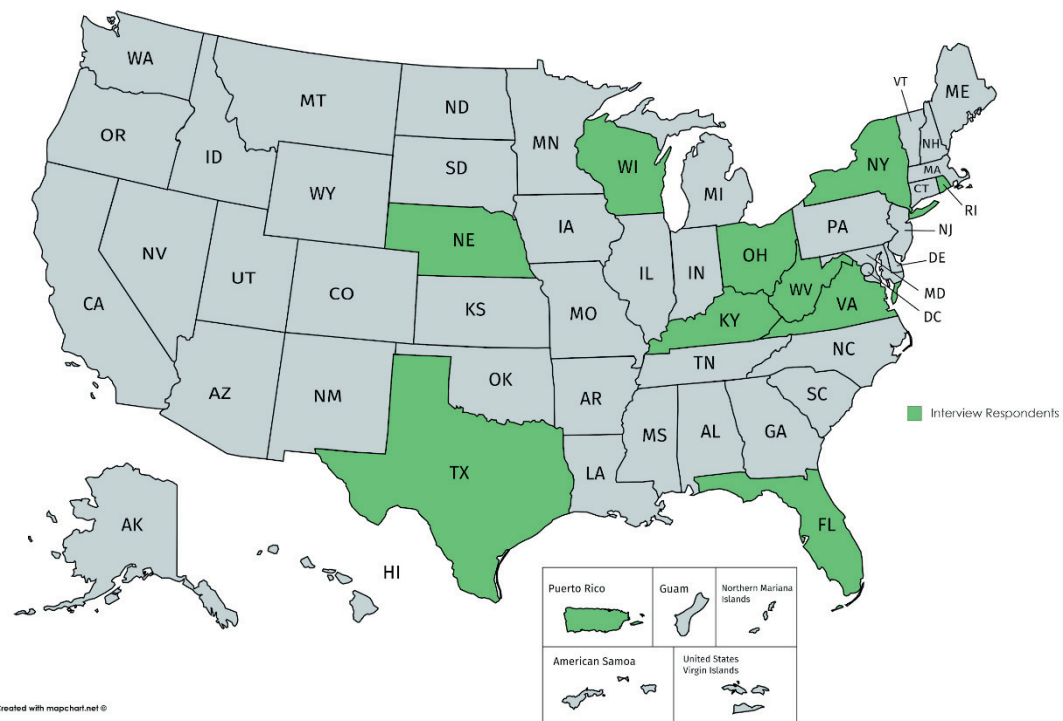


Figure 5. Location of interviewee participant's medical programs

Demographics of the interviewees and their respective medical programs were taken from their survey responses or collected during the interview if the interviewee was recruited from snowball sampling. Two-thirds (n=10) of the 15 interviewees were faculty

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and one-third (n=5) were staff. The majority of interviewees identified as Caucasian/White, with 60% (n=9) indicating Caucasian/White as their ethnicity. Out of the remaining interviewees, 13% (n=2) identified as African-American, 13% (n=2) identified as Hispanic/Latino, 7% (n=1) identified as Asian, and 7% (n=1) as multicultural. Of the 13 medical programs represented in the interview set, the majority were public and/or granted a Doctor of Medicine degree: 54% (n=7) were public, 46% (n=6) were private, 23% (n=3) granted a Doctor of Osteopathic Medicine degree (DO) and 77% (n=10) granted a Doctor of Medicine degree (MD). Of the categories in which multiple answers were possible (i.e., programs could have more than one campus), nine programs were urban, two were suburban, and three were rural. Seven schools indicated they were research universities, and two schools were independent and not part of an encompassing higher education institution (i.e., a freestanding medical education program). The 13 medical schools represented in the set of 15 interviews ranged in size from less than 100 students per year (15%), 100-199 students per year (46%), 200-299 students per year (15%), 400-499 students per year (8%) and more than 500 students per year (15%). Out of the 13 medical programs represented, 77% (n=10) had offered international rotations for more than 10 years, 8% (n=1) had offered international rotations for six to ten years, and 15% (n=2) had offered international rotations for one to five years.

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Results: Characteristics of International Rotations

The first research question of this study sought to understand what factors coordinators of international rotations identify as key characteristics of international rotations in U.S. medical schools as well as to identify the foundational structural and programmatic components that are necessary for international rotations. Questions on the survey and during interviews investigated descriptive features, such as duration of international rotations, in which types of countries international rotations occurred, academic features such as credit requirements, and more. Responses to these questions displayed great variety of characteristics of international rotations at medical schools across this study. As mentioned earlier, 77% of respondents indicated their medical programs offered international rotations. The following data comes from those respondents at institutions that offer international rotations for medical students.

A majority of respondents indicated that the average duration of an international rotation at their medical program was one to three months. Within the international rotation experiences represented in the 43 responses from medical schools that offer international rotations, 23% of respondents (n=12) indicated the average duration of rotations at their particular medical program was less than one month, and 72% (n=31) indicated the average duration of rotations was one to three months. There were no responses indicating average rotation durations greater than three months.

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A large majority of international rotations represented in the data occurred mostly in low-income countries, with far fewer occurring in middle- or high-income countries. Respondents were asked to indicate in which types of countries the majority of international rotations occurred: low-, middle-, or high-income countries. No definition was provided for these categories, allowing respondents to answer to the best of their ability an estimation of where the majority of international rotations occurred. Taking into account all of the international rotation experiences within a medical program, 74% of respondents (n=32) indicated that international rotations occurred *mostly* in low-income countries in their program; 16% of respondents (n=7) indicated that most international rotations occurred in middle-income countries; and 2% of respondents (n=1) indicated occurrence in high-income countries, with 7% of respondents (n=3) indicating they were unsure or did not know where *most* international rotations occurred in their medical program. Table 3 displays the average number of international rotations a medical student might take over the entire length of their program.

Table 3		
<i>Average Number of International Rotations Taken During Medical Program</i>		
<u>Average number of international rotations taken during entire medical program</u>	<u>Count (n=43)</u>	<u>Percent</u>
0	1	2%
1	23	54%
2	17	40%

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Table 3 (continued)

<u>Average number of international rotations taken during entire medical program</u>	<u>Count (n=43)</u>	<u>Percent</u>
3	1	2%
4	1	2%
5	0	0%
More than 5	0	0%
Total	43	100%

An overwhelming majority of respondents indicated that students take international rotations only as an elective component of the medical program rather than as a requirement. Out of the 43 total responses for the question, 93% (n=40) indicated that students take international rotations only as an elective component of the medical program, and 7% of respondents (n=3) indicated that students take international rotations as both required and elective components of the medical program. No responses indicated that students took international rotations only as a required component of the medical program. Almost a quarter of respondents indicated that the majority of students at their institution took an international rotation as an elective during the last two years of the medical program with 70% of respondents (n=28) indicating as such, while only 25% of respondents (n=10) indicated that the majority of students took an international rotation as an elective during the first two years of the medical program and 5% of respondents (n=2) were unsure or did not know.

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Three respondents indicated that students took international rotations as both required and elective components of the medical program; one-third of those respondents indicated that medical students took the required component during the first two years of the medical program and two-thirds of those respondents indicated that medical students took the required component during the last two years of the medical program. Table 4 displays the number of medical schools that include the listed activities in international rotations, arranged from most frequently included to least frequently included.

Table 4		
<i>Number of Medical Schools that Include Listed Activities in International Rotations</i>		
<u>Activity in international rotation</u>	<u>Count (n=43)</u>	<u>Percent</u>
Preceptor or mentor from international site	41	95%
Observation of medical procedures	39	91%
Pre-departure orientation	38	88%
Student reflection of the activity upon return to home program	37	86%
Activities tied to course learning objectives	35	81%
Post-travel debrief	33	78%
Clinical service (medical treatment given by student to patient)	32	74%
Preceptor or mentor from home program	31	72%
Student engagement in research	29	67%
Student reflection while at international site	27	62%
Non-clinical service projects	21	49%

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A majority of respondents indicated that international rotations at their medical programs included additional course fees, which were most often paid for by the student. Out of 43 respondents, 70% (n=30) indicated that there are additional course fees for international rotations, including travel, beyond regular tuition payment, and 26% of respondents (n=11) indicated there were not, with 4% of respondents (n=2) indicating they were unsure or did not know. Regarding the medical programs in which there were additional course fees for international rotations, at 83% (n=25) of the medical programs these fees were paid for by the student, and at 17% (n=5) of the medical programs these fees were paid for through scholarships for students. There were no responses for fees paid for by the medical program or institution, or grants for students. Table 5 displays the frequency at which certain program characteristics took place in the medical program, arranged by most frequently included to least frequently included. This question was answered on a scale from never (1) to always (5).

Table 5			
<i>Frequency at which Program Characteristics Occur in International Rotations</i>			
<u>Characteristics of the international rotation</u>	<u>Total Responses</u>	<u>Mean</u>	<u>SD</u>
Students are precepted or supervised during international rotations by someone from the host/receiving program or site	40	4.43	0.89
International rotations require a pre-departure orientation	40	4.35	1.01

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Table 5 (continued)			
<u>Characteristics of the international rotation</u>	<u>Total Responses</u>	<u>Mean</u>	<u>SD</u>
Students receive academic credit for their international rotations	40	4.28	0.83
International rotations require a post-travel debrief	40	4.20	1.23
Students' international rotation performance is evaluated by members of the host/receiving program or site	40	4.08	1.10
Students' international rotation performance is evaluated by members of the home/sending program	40	3.38	1.40
Students are precepted or supervised during international rotations by someone from their home/sending program	40	2.88	1.35
Responses were selected based on the following scale: 1=never; 2=sometimes; 3=about half of the time; 4=most of the time; 5=always			

Interviews revealed greater detail regarding characteristics of international rotations. Many interview responses described various included pre-departure activities, although not every program represented in the interviews offered such activities. The most common responses regarding components of pre-departure activities included mandatory safety, risk management, and travel logistics as included components in pre-departure orientation. A less common response provided by interviewees described educational components that might be provided by the medical program, such as readings, documentaries to view, or online modules related to ethics, professionalism, or use of translators. Another common response from interviewees indicated that the

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international rotation coordinators had interest in developing more robust pre-departure orientation in the future. One interviewee commented, "...there's no easy way to bring them [students] together for a more formal, pre-departure checklist orientation. It's kind of on my list of things that I feel like I need to make a bit more robust." Across all programs, pre-departure activities varied based on the year of the medical student, the time of year, if travel was with a group of other students and/or faculty or undertaken individually, and if medical programs designed the rotation or if they utilized a third-party organization.

In regards to the activities that might be included in international rotations, there was a wide variety indicated by the interview sample. Depending on the program, activities for students might include observation, engagement in research, clinical service, or non-clinical service projects, or a mix of any of the above. In cases where students provide clinical service, interviewees emphasized the importance of ensuring appropriate supervision for the student and the need to practice within the student's scope. For example, one interviewee summarized how international rotations can be used to provide academic credit, which was a common response from many participants:

International rotations would be essentially students doing the same clinical work that they would do here in the US. So not practicing above their skill level, but they would be inserted into the schedule at their host clinical sites and work under a supervisor.

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A less common response across interviews indicated that some programs also include components of community engagement in their international rotations, such as educational outreach, community beautification projects, or building local capacity for public health.

Any post-travel activities offered by the medical program also varied, as well as approaches used for program evaluation. The products that a student might produce, such as a research report or presentation, depend on what elective they were fulfilling and if they were receiving academic credit for the rotation. Some programs held a post-travel debrief session for students or sent a follow-up survey to gather the students' perspective on the rotation site. A common response during interviews demonstrated the difficulty of gathering students for a post-travel debrief session. Most interviewees commented on the difficulty of including a robust post-travel debrief due to the timing of the rotations during the academic year, especially with fourth-year students who often graduate shortly after returning from an international elective. Interviewees commented, "You're so barely able to get everyone around the table," or, "We don't do a lot and should probably do more." Less frequently, programs held a post-travel debrief for students or sent a follow-up survey to gather the student's perspective on the rotation site. Perspectives on evaluation varied greatly across medical programs as well. Some interviewees mentioned that students are evaluated at the host site with a form provided by their host institution, and in other cases a host site might have developed its own evaluation form.

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Across all 15 interviews, there was a sense that there is no one “common” rotation at any interviewee’s respective medical program, but rather there is much variation in the types of rotations a single program might offer. All interviews featured similar approaches to the length of the rotation and timing within the medical program due to limitations from testing or course schedules, and most interviewees indicated that the safety and supervision of the student was a top priority in the design and implementation of the rotation. Beyond those similarities, there was much variation in how a medical program might approach international rotations. These approaches are discussed in greater detail in the following Chapter 5.

Regarding the identification of community host sites, respondents were asked on the survey if their medical program partnered with any other entities to design, plan, or implement international rotations and were requested to choose all that applied. Table 6 displays the number of medical schools that partner with the entities listed, organized from most frequently occurring to least frequently occurring.

Table 6		
<i>Number of Medical Schools that Partner with Entities to Design, Plan, or Implement International Rotations</i>		
<u>Entity</u>	<u>Count (n=40)</u>	<u>Percent</u>
Host/receiving institution or site	32	80%
Non-governmental organizations (NGOs), including non-profits	23	58%
International NGOs	14	35%

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Table 6 (continued)

<u>Entity</u>	<u>Count (n=40)</u>	<u>Percent</u>
Faith-based organizations	9	23%
None, all completed at medical program	8	20%
Private companies	6	15%
For-profit companies	2	5%

Respondents were also asked to choose their level of agreement with statements claiming that the goals, needs, timelines, resources, and capacity of the host site were considered on a scale from strongly disagree (1) to strongly agree (5) and if faculty or staff from the host sites were involved in designing the international rotation. Table 7 displays the level of agreement relating to these host site considerations in the order in which the considerations were listed on the survey.

Table 7

Level of Agreement Relating to Host Site Considerations

<u>Host site consideration</u>	<u>Total Responses</u>	<u>Mean</u>	<u>SD</u>
The <i>goals</i> of the international rotation host site are considered	40	4.65	0.79
The <i>needs</i> of the international rotation host site are considered	40	4.45	1.05
The <i>timelines</i> of the international rotation host site are considered	40	4.48	0.87

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Table 7 (continued)			
<u>Host site consideration</u>	<u>Total Responses</u>	<u>Mean</u>	<u>SD</u>
The <i>resources</i> of the international rotation host site are considered	40	4.55	0.80
The <i>capacity</i> of the international rotation host site are considered	39	4.56	0.90
Faculty or staff from the international rotation host sites are involved in designing the international rotation	40	4.40	1.02
Responses were selected based on the following scale: 1=strongly disagree; 2=somewhat disagree; 3=neither agree nor disagree; 4=somewhat agree; 5=strongly agree.			

In terms of partnerships between medical programs or institutions and host sites, or the use of third-party organizations to arrange rotations, there was also great variety expressed by interviewees. A direct partnership between a medical program and a host site may exist, or programs may solely utilize third-party organizations to send students on rotations where the medical program may have no other relationship to the host site. Interviewees also expressed varying opinions of third-party organizations that organize international rotations, from the idea that certain organizations serve as a “gold standard” for the field of global health to the opinion that other organizations are only “in it for the money.” One interviewee, for example, expressed trust that a third-party organization would appropriately mentor students: “We don't have to worry about trying to get our faculty members a hundred percent of the time or even our students there, there's an

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element of trust to take care of your students, to shepherd them while they're there." In contrast, another interviewee relayed a disadvantage to some third-party organizations who may view profit over learning, stating, "There's a million vendors out there who are willing to take your money and put you in a foreign country."

Structural and programmatic components necessary for international rotations. Another research question related to the key characteristics of international rotations investigated the structural and programmatic features that were necessary for international rotations, which was investigated by asking participants to describe any offices engaged in planning international rotations, collaborations with other structures, or features that emerged in narratives that were shared by interviewees as being key to international rotation efforts.

Respondents to the survey were asked to name up to three other offices engaged in planning or implementing international rotations in collaboration with the medical program, and to leave blank if there were none. Less than half of the respondents indicated that there were other offices besides the medical program engaged in planning or implementing international rotations. Out of the 57 responses to the survey, 22 respondents (39%) provided an answer to this question, and 35 (61%) did not, indicating there were no other offices engaged. These responses were consolidated by general type and are presented in Table 8.

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Table 8

Offices Engaged in Collaboration with the Medical Program for International Rotations

<u>Office</u>	<u>Count (n=22)</u>
University international or global office (including study abroad)	12
Global health office	11
University risk management	4
Individuals in medical program (Deans or faculty)	4
Academic affairs or education office in medical program	5
School of public health	2
Research office in medical program	1
Non-respondents (no other offices engaged)	33

A similar question asked respondents to list up to three facilitating structures in place to support the implementation or advancement of international rotations, and to leave blank if there were no such structures. Less than half of the respondents indicated that there were any other facilitating structures to support international rotations. Eighteen respondents answered this question to indicate facilitating structures at their medical school (32%) and 39 (68%) did not, indicating no such facilitating structures at their medical school. These results were consolidated by type and are presented in Table 9.

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Table 9	
<i>Facilitating Structures at the Medical School to Support International Rotations*</i>	
<u>Facilitating Structure</u>	<u>Count (n=18)</u>
People: administrative support, faculty, leadership, students	20
Funding	13
Infrastructure: offices, academic tracks, school mission, established processes	7
Relationships: partnerships, alumni connections, third-party organizations	5
*Respondents were asked to list up to three facilitating structures	

Interview data provided further context related to necessary structural and programmatic components. When interviewees described change or growth in the medical program or international rotation, a majority of responses referenced the creation of new offices or professional roles dedicated to designing and implementing international rotations. In a few cases, the medical program participated in broader efforts toward internationalization of the curricula, which encouraged the inclusion of international rotations in the medical program. Other similar examples revealed how international rotations grew from “low key and permissive” activities to rigorous academic programs due to structures established to tie the rotation to broader academic goals.

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Results: Barriers and Facilitators to Implementing International Service-Learning

This study also sought to investigate the barriers and facilitators to implementing international rotations in U.S. medical schools. To assess this, survey respondents were asked to select the level of influence that a certain barrier or facilitator had on their medical program engaging in international rotations, and interviewees were asked to further explain these barriers or facilitators. On the survey, the scale ranged from not at all influential (1) to extremely influential (4). Tables 10 and 11 display the results of these questions, arranged by most influential to least influential.

Table 10

Barriers and Level of Influence on Medical Program to Engage in International Rotations

<u>Barrier</u>	<u>Responses</u>	<u>Mean</u>	<u>SD</u>
Lack of grants or other funding	39	2.72	0.81
Insufficient time for research with communities	39	2.21	0.94
Encouragement of leadership (program, department, university) to perform research with the community	39	2.05	0.90
Unfamiliarity with leaders of community-based organizations/community agencies	39	1.92	0.86
Insufficient rewards or roles for research with the community	39	1.87	0.91
Competition of sites for community-based research or teaching	38	1.74	0.85

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Table 10 (continued)			
<u>Barrier</u>	<u>Responses</u>	<u>Mean</u>	<u>SD</u>
Ethical barriers	31	1.55	0.80
Low student interest	39	1.49	0.55
Respondents were asked to select the level of influence based on the following scale: 1=not at all influential; 2=slightly influential; 3=very influential; 4=extremely influential.			

If the survey respondents selected ethical barriers, they were asked to provide additional information by naming the barrier. Of the 31 who responded to this question, the large majority of respondents (87%) indicated that ethical barriers were not at all influential or slightly influential, while only 13% indicated that ethical barriers were very influential or extremely influential. Five respondents offered additional information specifying the type of barrier. Three of the respondents named cultural competence and scope of practice, struggle to achieve bilateral engagement with foreign university due to lack of funds and desire of home institution, and potential danger or harm to students. The remaining respondents pointed to processes in place to address the ethical barrier rather than naming the barrier itself. These responses included providing ethics training for faculty and students, having department oversight, and only scheduling short-term global health experiences if they were in the context of a longitudinal partnership with a local health care system that could provide follow-up to clinical service given during the rotation.

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Table 11

Facilitators and Level of Influence on Medical Program to Engage in International Rotations

<u>Facilitators</u>	<u>Responses</u>	<u>Mean</u>	<u>SD</u>
High student interest	38	3.05	0.92
Convenient opportunities to develop community partnerships	38	2.68	0.86
Access to grants or other funding	38	2.55	0.97
Encouragement of leadership (program, department, university) to perform research with the community	38	2.55	1.09
Familiarity with leaders of community-based organizations/community agencies	38	2.53	0.97
Availability of sites for community-based research or teaching	38	2.47	0.85
Adequate time for research with communities	38	2.37	0.90
Adequate rewards or roles for research with the community	38	2.24	0.96
Respondents were asked to select the level of influence based on the following scale: 1=not at all influential; 2=slightly influential; 3=very influential; 4=extremely influential.			

During the interviews, participants were also asked why they engaged in designing and implementing international rotations, what challenges they faced, and what might make their work easier. There were many individualized responses to the question of why they engaged in this work, but many cited transformative personal experiences of

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international travel that they wanted to share with students and a passion for service and health equity. For example, one interviewee commented:

...I want to be involved in international rotations to show it's about the same thing and that we should just be able to help kids thrive regardless of where they were born, and that we should realize that oftentimes the things that we see abroad in terms of, you know, poor maternal health or child care sometimes actually occur here.

Challenges were similar across programs, including a feeling of being pulled in multiple directions and having few support staff to help, as well as balancing student expectations of the rotation and the ethics of the type of experience a student could have during an international rotation. The most common response across interviews regarding what would make the international rotation coordinator's job easier related to greater funding and support, in terms of actual staff support and symbolic support from institutional leaders. One interviewee, for example, commented that equitable pay was important for faculty who may have had to accept a pay cut from decreasing their clinical work to be involved in international rotations. She stated that equitable pay "certainly would make it much easier for me to recruit the different groups to our activities."

Medical school participation in international service-learning. The study also sought to investigate what international rotation coordinators identified as factors that drive or deter participation of a U.S. medical school in international rotations, which

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could be broader contextual or environmental features. This research question was addressed by data provided from respondents and interviewees at medical schools that do offer international rotations as well as from respondents and interviewees from medical schools that do not offer international rotations.

Factors that drive or deter participation of a medical school in international service-learning. A preliminary question on the survey asked respondents if their medical program offered international rotations or not. If they selected yes, they were directed to the rest of the questions about those rotations. If they selected no, they were taken to an alternate screen and asked to answer, to the best of their knowledge, why their medical program did not offer international rotations. There were seven responses to this open-ended question inquiring into why a medical program did not offer international rotations. The most common response was that international rotations were student-driven activities, not driven or facilitated by the medical program. Students would be able to take an international rotation if they identified a site and planned the rotation individually, but the medical program did not conduct the experiences. Other responses related to the length of time a medical school had been established (“new medical school”) and the risk involved; mainly, that the medical program did not provide malpractice insurance for students taking international rotations. One respondent who had selected “no” participated in the interview portion of the study; the responses provided by

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that rotation coordinator are reflected in the analysis surrounding barriers to a medical school's decision to participate in international rotations.

Interview data provided greater detail on perspectives related to drivers and deterrents of engaging in international rotations. The most frequently referenced driving factor for medical schools to offer international rotations was student interest and the need to meet changing workforce demands. For example, one interviewee noted, "They want it. We've actually had students call us saying, 'I'm considering applying to the [medical school]. Tell me about global health,' because the office of global health is visible and they're asking about it because that's what they want."

In some cases, inclusion of international rotations was tied to a medical program's mission or vision to produce primary care physicians or serve vulnerable and underserved populations. Interviewees named several benefits of international rotations, most of which were related to increasing knowledge or skills in students, while a smaller number focused on benefits to the host community or to the medical school. In some cases, interviewees expressed the idea that benefits of international rotations were self-explanatory. Many benefits were similar across programs interviewed.

Interviewees also described disadvantages of international rotations, and provided greater detail related to the survey question asking whether a medical school engaged in international rotations. Open-ended responses on the survey from medical programs that do not offer international rotations indicated that factors such as length of time the

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medical program had existed or lack of structure for international rotation programming were deterrents to participation. A less common response to the question indicated that some medical programs did not formally offer a structured international rotation, but students could pursue them on their own or through third-party organizations. During interviews, many respondents struggled to list disadvantages of international rotations. The disadvantages that were mentioned focused mostly on hardships for the students (i.e., expense) and the community (i.e., creating a dependence on international visitors for healthcare).

During the interviews, participants were also asked if they anticipated growth in their medical programs in the future. The large majority of interviewees responded affirmatively, citing the rising interest from students and from new and incoming faculty that could provide new relationships with host sites through which to build partnerships. A common response from interviewees indicated that their respective medical schools would like to grow in terms of depth or quality of an existing partnership, not simply by increasing the number of international rotation sites. Another common response from interviewees also revealed a sense that globalization is becoming the norm and that the world is shrinking, in a metaphorical sense, so the growth of international rotation offerings is inevitable. An illustrative quotation from an interviewee explained, “...reaching out across cultures is increasingly becoming the norm. There is a broader awareness of the multicultural nature of the U.S. and engagement in globalization stuff

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broadly.” A less common theme revealed that some interviewees did not anticipate growth, however, stating that they thought their programs had “tapped out” the percentage of students to pursue international rotations and did not anticipate more participation unless more funding was available to sponsor students.

Results: Relationships Between Medical School Components or Institutional Environment and Inclusion of Service-Learning

A final question of the study focused on investigating if there was a relationship between certain components in the medical school or institutional environment and a medical school’s inclusion of international service-learning in international rotations, since international rotations are the primary vehicle through which international service-learning could occur. To investigate this question based on the data that were collected, I first needed to determine which medical programs (as represented by the survey respondents and interviewees) could be categorized as including components of international service-learning. For this purpose, I used the definition of service-learning proposed by Seifer (1998) which states that service-learning is

a structured learning experience that combines community service with explicit learning objectives, preparation, and reflection. Students engaged in service-learning are expected not only to provide direct community service but to learn about the context in which the service is provided, the connection between the service and their academic coursework, and their roles as citizens. (p274)

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Based on the criteria requiring a combination of learning objectives, preparation, reflection, and direct community service, I sorted survey responses into two categories based on the data provided in the question that asked respondents to check activities that were included in international rotations: programs that do include service-learning, and programs that do not. A respondent must have checked boxes for “course activities tied to learning objectives,” “pre-departure orientation,” “reflection done on site” or “reflection done upon return,” and “clinical service” or “non-clinical service” to be categorized as offering service-learning, based on Seifer’s definition. Respondents that did not select clinical or non-clinical service but may have selected engagement in research or observation only were grouped into the category of programs that do not include service-learning, since a critical component of international service-learning is direct service to a community and research activities are often peripheral to service (Stewart & Wubben, 2015). Based on this categorization, I determined that there were 30 medical programs that did include components of international service-learning in their international rotations and 26 that did not.

When categorized, sample sizes were too small to determine any levels of statistical significance, but certain patterns were apparent in the data. Of the 30 respondents whose programs included components of international service-learning, 23% (n=7) indicated that their program included international rotations because of a connection to the school’s mission. The majority of respondents in both categories were

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unsure if their surrounding higher education institution within which the medical school was located (if applicable) held the Carnegie Community Engagement Classification. Only two institutions (7%) whose medical programs do include components of international service-learning hold the classification, and one institution (4%) whose medical programs do not include components of international service-learning holds the classification.

Thirty medical programs did include components of international service-learning, and out of those, 75% had offered international rotations for more than 10 years, and 60% of the programs also host students from other international universities. Within the grouping of medical programs that did not include components of international service-learning, only about one-third (36%) had offered international rotations for more than 10 years, and slightly more than half (55%) of the programs also host students from other international universities. Table 12 below summarizes whether programs send the majority of their international rotations to low-income, middle-income, or high-income countries.

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Table 12

Types of Countries where Majority of International Rotations Occur

<u>Location of international rotation</u>	<u>Programs that do include components of international service-learning (n=30)</u>	<u>Programs that do not include components of international service-learning (n=26)</u>
Majority of international rotations to low-income countries	26 (87%)	6 (46%)
Majority of international rotations to middle-income countries	3 (10%)	4 (31%)
Majority of international rotations to high-income countries	0 (0%)	1 (8%)
Unsure	1 (3%)	2 (15%)

Within the programs that do include components of international service-learning, 61% of the respondents had a joint appointment, job, or affiliation with another department or academic unit, and 53% of the respondents of the programs that do not include components of international service-learning had a joint appointment, job, or affiliation with another department or academic unit. All the respondents in both categories also indicated that their medical programs engage in domestic community-based education opportunities.

Overall, findings from the qualitative interviews provided greater depth and detail than the quantitative data. In conjunction, both data sets explore a comprehensive view of international rotations in medical programs in the United States with attention to program-level details as well as potential influence of broader contextual factors. These

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findings provide a foundation for rich analysis, which is detailed in the following Chapter 5, along with conclusions and implications of this research for future scholarship and practice.

CHAPTER 5

Discussion

In this chapter, I discuss the study's main findings and their implications on the current literature and practice. Rich detail and select quotations from interviews serve as exemplars to describe international rotations as well as provide examples of unique factors that may influence a medical school or international rotation coordinator. To maintain the anonymity of interview participants, there are no names associated with the quotations and any identifiable information regarding the medical school at which the interviewee works has been removed.

As described earlier, international service-learning can be referred to in multiple ways depending on the discipline. After a test audience of medical school faculty and staff reviewed the survey and interview design for this study, the term "international rotation" was determined to be the most direct and clear to use in the field of medical education. In this section, the term "international rotation" will be used more frequently than "international service-learning," as an international rotation is the term used in the survey and interview questions and how participants referred to their elective or required programs in which U.S. medical students travel to a different country for an educational experience. An international rotation is not necessarily equivalent to international service-learning, although it may contain components of international service-learning, but international rotations are the primary vehicle through which international service-learning can be experienced in medical education and thus can serve as a proxy.

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The organization of this chapter will follow the outline of previous chapters and the inherent logic of my mixed methods study: findings will be discussed as they relate to my research questions, with a blend of quantitative and qualitative data analyzed iteratively to respond to each research question. In mixed methods studies that begin with a quantitative approach, response rates are unpredictable and can greatly influence the success of the subsequent qualitative phase. However, the strength of this mixed methods approach was that it allowed qualitative data from interviews to further explore quantitative data from the survey and allowed for triangulation to occur. In this study, the two data sets were analyzed in a constant comparison method, which allowed the data points to be integrated to strengthen the overall thematic implications.

Characteristics of International Rotations

My first research question sought to investigate what elements international rotation coordinators identified as key characteristics of international rotations at their medical schools, as well as the structural and programmatic components that are necessary for international rotations. The data that were collected from the survey and interviews provided information regarding the structure and aspects of international rotations, including the processes of planning and implementation as well as components of the rotation such as pre-departure orientation, activities performed during the rotation in-country, post-travel activities, and evaluation.

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Since international rotations are not required explicitly by any medical licensure or accreditation standards (LCME, 2018), it is not surprising that there would be great variety between medical programs in how international rotations are designed, implemented, and supported, if included in the medical program at all. As evidenced in Chapter 2, there has also been no consensus formed to date in the literature around the optimal length of time spent in service, features of programs and implementation, the impact on community and host partners, and impacts of long-term programs on participants and communities. Data from this study reflect this variety and lack of consensus and aligns with other scholars' claims that medical education represents a distinctive aspect of higher education due to unique cultural and environmental contexts (DasGupta et al., 2006). During the interviews, participants were first asked to describe a "common rotation" at their medical program. Several interviewees laughed at the idea of a "common" rotation or had difficulty describing only one type of international rotation that their medical students could pursue. This sentiment demonstrates the variation between what an international rotation could include and what international rotation coordinators identified as key characteristics of international rotations.

Due to the variation in program characteristics, it is difficult to conclude what a typical or common international rotation might look like; however, this study describes common features of international rotations and demonstrates how those components interact to drive design decisions made by international rotation coordinators during the

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planning and implementation stages. In general, international rotations can vary from being completely student-designed or tailored to individual student needs to being standardized across the medical school. A relationship between a U.S. medical institution and a host site could be either a direct and formal connection with memorandums of understanding, an informal connection based on a relationship with a faculty member or student who may be from the host country, or almost nonexistent save for the connection to a third-party organization which organizes and manages the logistics for the student in place of the medical program.

This study suggests that design aspects of international rotations depend greatly on safety considerations, components required for academic credit, student considerations such as level of experience, and the agency or motivation of the international rotation coordinator during the design and implementation stages. Formal structures and processes can help support international rotations as well as help integrate international rotations more formally into medical school programming. This study also demonstrates that funding and timing constraints are highly influential and prevent medical schools from requiring international rotations, which also relates to the fact that not all international rotations are taken for academic credit. Since international rotations are not accessible to every student, because of issues of funding and timing, they cannot be viewed or programmed as requirements in the medical school curricula; consequently, international rotations vary widely across medical programs because of lack of

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standardization, and many design elements depend on the individual international rotation coordinator who plans and implements international rotations.

Despite the differences across and within medical programs, all international rotation coordinators emphasized safety and supervision as critical components that need to be in place for students. Beyond those two priorities, however, the characteristics across medical programs' international rotations varied widely. The following descriptive features of rotations were all provided by respondents whose medical programs did offer international rotations as part of the educational experience, and relate to the location and logistics, the nature of partnerships, and the components of a rotation, as well as structural and programmatic components necessary for international rotations.

Location and academic logistics. The majority of respondents from medical programs that participated in this study indicated that most international rotations occur in low-income countries, were taken as elective options in the last two years of medical school for academic credit, and that a student might take an average of one international rotation over the four-year program. Many factors represented in the data could explain this pattern. One explanation as to why most of the rotations are situated in low-income countries is that several interviewees referenced the key goals for engaging students in international rotations as including improving health equity, reducing disparities, and serving vulnerable populations in areas of great need, such as rural, low-income, or other underserved areas. This mission could drive medical schools to seek out these types of

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populations, which can be found in lower-income countries, although there are arguably many vulnerable populations and areas of need across the United States as well. Reliance on low-income countries as primary locations for host sites was evident for a large majority of respondents to the survey (74%). Only 16% of survey respondents selected middle-income countries and a mere 2% selected high-income countries as the location where international rotations typically occurred. This suggests that there may be differences in the types of settings that international host communities represent and the type of experience a student might have at that site; based on data provided by international rotation coordinators, medical students and/or medical schools might prioritize rotation sites in lower-income countries.

While many medical programs offer international rotations, very few require an international rotation during the four-year program and instead offer these rotations as electives. Funding for international rotations and the timing of when the rotations can be taken during the four-year program contribute to why international rotations are not a required component of medical school curricula. Factors such as when international rotations occurred during the four-year program, the length of time a student would spend in-country, if a student traveled individually or in a group, and how international rotations were funded all appeared to be interconnected and influential to the design and implementation of international rotations.

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In the majority of medical programs (93%), international rotations were taken by students as an elective component of the medical program. In some cases there could be both required and elective international rotations as part of the medical program, but there were no cases in this study in which international rotations were taken solely as a required component of the program, which contrasts with results found by Stewart and Wubbena (2015) in which international activities were split fairly evenly between elective, selection-based, and requisite-based. As an elective, international rotations were taken in the last two years of the medical program at 70% of the medical schools represented by the survey respondents. This would suggest that a majority of international rotations occur during the last two years of a students' tenure in medical school, which is logical because that is when students have completed basic science prerequisites and have begun to complete clinical rotations to expose them to specialty fields and prepare them for residency.

In terms of the timing of when international rotations occur and the length of time a student might spend in-country, there were similar constraints guiding medical programs' implementation of international rotations which often originated from pressures outside of the medical school within the macrosystem (e.g., timelines from licensing bodies). Many interviewees referenced the fact that students take international rotations either during the summer between years one and two, or as a late-spring elective during year four. For example, one interviewee commented, "There used to be more time

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between year two and three, but the recommendations for their Step testing [United States Medical Licensing Examination] has really taken over all of that available space.” The issue that timing presents suggests that international rotations might not be viewed as core academic programming, since they appear in most cases in this study to be compressed into the little available free time of a medical student’s schedule (summer between year one and two) or at the end of the program in the spring of year four after all other requirements may have been met. Naturally, rotations that are not viewed or programmed as core to academic programming would not be required for all students. This finding is consistent with a study performed by Drain et al. (2007) who also concluded that the limited number of opportunities and challenges in arranging international rotations due to lack of time were concerns related to expanding international opportunities for students.

Pressures of testing and time available in the curriculum were similar themes across medical programs that also influenced the length of time a student could partake in an international rotation, and when during the medical program it could be completed. About three-quarters of survey respondents indicated that international rotations were one to three months, on average, while only 23% indicated the rotations were less than one month, on average. No respondents indicated that rotations lasted longer than three months. International rotations require a significant block of time for a student or any supervising faculty or staff from the home institution to commit. Interviewees

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commented on the difficulty of offering an international rotation for longer than four weeks, especially if taken during the spring of the fourth year, often right before graduation. One interviewee stated, “If [students] engage in an international rotation longer than four weeks, it would result in them having to lose a block and then not being able to graduate with everybody else in their cohort.”

In terms of who might take an international rotation, interviewees also described a wide range of possibilities that suggested that there was no single way that medical programs had standardized international rotation options, which also contributes to the difficulty in requiring international rotations. In most cases, interviewees expressed a desire to match the capacity of the host site, so that the activities a student could reasonably and appropriately perform would match the host site’s needs, and that a student with more experience might be more likely to travel individually on a self-designed rotation than a less-experienced student, who would be more likely to go on a standardized, group trip.

Students could travel in groups or as individuals, with or without faculty or staff from the medical program, and during any year of the medical program. Across medical programs in the study, the duration of time a student spent in another country also appeared to be related to the year of a student and therefore the activities completed during the rotation. Medical students in years three or four tended to take longer international rotations, such as four to six weeks, and perform more clinically-based

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activities. Medical students in years one or two tended to take international rotations for two to four weeks, sometimes without receiving academic credit, and tended to perform more community service-based, observational, or research related activities. These variations make it difficult to propose any broad generalizations about what the key characteristics of international rotations might be, but demonstrate that there are many interconnected component parts that can influence how international rotations are designed and implemented.

The timing of when a student might take an international rotation and if he or she received academic credit can also depend on a number of factors, such as the student's level of experience, what the medical program schedule allows, and the duration and required components of the rotation, according to interview data. Survey respondents indicated that students received academic credit for international rotations 'almost always' or 'always.' Qualitative data, however, indicated that implications from the survey data of when students take international rotations and if they always or almost always receive academic credit may not be as clear as the quantitative data would suggest.

For example, interviewees described the myriad ways a student could partake in an international rotation: a student might take a number of spring break or summer trips, for shorter duration and either for or not for academic credit, in addition to formal, longer-term international rotations for academic credit. These experiences could thus

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range from one to five or more international rotation trips over the course of the four years for any one student. While the survey data suggested that a medical student might take an average of one international rotation during the entire medical program, interview data suggested that this generalization might be misleading. It is clear that there is a wide range of possibilities available across medical programs, and that factors such as location, timing, and when and how a student takes a rotation as a requirement or an elective are interrelated.

The issue of funding for international rotations was also influential to the design and implementation of the rotation, and there were similar constraints across medical programs related to funding. In the majority of medical programs in this study, there were additional course fees for international rotations, including travel, beyond regular tuition payment, and these fees were paid overwhelmingly by students. Only 26% of survey respondents indicated there were no additional fees for international rotations. When required, the additional course fees were paid for by the student at 83% of the medical programs while only 17% of the programs offered scholarships for students to cover the fees. There were no responses for fees paid for by the medical program or institution, or grants for students, which illuminates a critical area where medical schools could turn their attention. Without directly providing funding for additional costs related to international rotations, it is unlikely that medical schools could require international

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rotations and therefore establish international rotations as key components of the medical program curricula.

In addition, when students self-fund international rotations, the medical schools often appeared to have less control over design decisions, such as where, when, and how a student would implement the rotation. Interviewees stated that students frequently self-fund their own international rotations. At one school, students could choose their sites if they self-funded the rotation: “The students pay out of pocket. They choose their sites...the students are self-funded so they tend to decide where they want to go.” If a student has power to choose their site and design their own rotation components, there could be greater implications related to types of partnerships a medical school might be able to initiate or sustain. Additionally, the extent to which a medical program can have oversight of a student going on an international rotation that may be completely self-designed and self-funded could be limited. Presence or absence of funding and the resulting challenges for students and medical programs is a recurring theme that will surface in subsequent sections of analysis.

These data suggest that there are many combinations of possibilities available across medical schools regarding when and how students engage in international rotations. Despite the variety evidenced in the data, there are general patterns that emerged regarding the location and academic logistics. International rotations were more likely to occur in lower-income countries and were more often taken as an elective than a

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requirement. Typically, third- or fourth-year students were more likely to travel individually and perform clinical activities, while first- and second-year students tended to travel in groups and perform less clinical activities, although international rotation coordinators emphasized safety and supervision regardless of the student's year. The timing of an international rotation during the four-year experience could vary and often was constrained by testing or other scheduling conflicts. In general, most medical programs required students to pay additional fees for international rotations and these were more often paid by students. The number of rotations a medical student might take over four years ranged from one to more than five, depending on factors related to experience and timing.

It is important for medical programs to be attentive and responsive to the ways in which these design factors can influence outcomes of student learning. In experiential education, the variations in form, structure, and practice can impact the positive outcomes that are possible (Benigni Cipolle, 2010). Whether an international rotation is a one-time event, a short-term or long-term placement, or an ongoing placement can also affect student outcomes, depending on the design of the curriculum (Bringle et al., 2013).

Rotation components. Rotation components across medical programs varied greatly and appeared to depend largely on the motivation and capacity of the international rotation coordinator to develop or include certain components. This demonstrates the power and agency that international rotation coordinators hold to revise policy and

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practice, which can eventually become broader cultural or transformational changes in institutions (Jacobs, 2002; Sturm, 2006) and highlights the utility of theories from organizational studies that investigate emergent change, continuous change, and adaptation (Cameron, 1984; Hearn, 1996). These theories are widely unexplored in medical education, which introduces new avenues that future scholars can pursue to illuminate processes and strategies for change in medical education, especially considering the extent to which this study demonstrates how variation in international rotation components depends on the motivations or capacity of international rotation coordinators.

In general, an international rotation could include pre-departure preparation, various activities performed while in-country, post-travel debrief, and evaluation, although not every medical program included all these components. Pre-departure orientation, when present, tended to include basic safety and travel logistics and could include academic components if there were curricular connections within the rotation. Activities performed during the international rotation were based on the medical program's goals and the international rotation coordinator's decisions made during the design of the rotation. Clinical activities were required for academic credit and more often performed by third- and fourth-year medical students, while first- and second-year students tended to perform more non-clinical activities. The activities required for completion of the rotation depended on whether academic credit was being earned by the

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student. After an international rotation, products were often required (i.e., papers, posters) for academic credit. Any type of post-travel debrief session depended on the international rotation coordinator's design. Reflection components were not always included, although reflection is a necessary component in experiential learning models (Kolb, 1984; Seifer, 1998; Steward & Wubben, 2015). In some cases, medical programs included evaluations of student performance during the international rotation. These evaluations were tied to clinical rotations and often similar to evaluations that students received if they performed rotations at their home institution, although there is debate regarding whether or not students should be held to standards at their home country or if new frameworks are needed for international sites (Asgary & Junck, 2013; Pinto & Upshur, 2009).

There were significant differences between how medical programs implemented the various components that were part of an international rotation related to pre-departure activities, activities on site, post-travel debrief, and evaluations. An overwhelming majority of medical programs in this study, however, included pre-departure orientation, post-travel debrief, and activities tied to course learning objectives that could include observation, clinical service, engagement in research, and reflection on experience. Less than half of the medical programs included non-clinical service projects in international rotations; activities were largely clinically-based and were almost always supervised by a preceptor or mentor from the international site (95%) or a preceptor or mentor from the home program (72%).

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Pre-departure activities. Experiential learning theory states that preparation before the service experience is a critical feature to include for student learning; specifically, preparatory activities that connect to the educational objectives for the experience (Seifer et al., 2000). Prior to departing for an international rotation, medical students receive basic safety and travel logistics information from their medical programs, but may not receive much more beyond that, which displays a key area where medical programs can focus to strengthen connections between international rotations and student learning. Any other pre-departure activities in addition to safety and travel orientation depend on the international rotation coordinator's design decisions and were related to the year of the student, if the student travelled individually or with a group, and if curricular components were included as requirements for academic credit.

Pre-departure activities varied greatly by program and did not appear to correspond to certain characteristics of the medical school, but rather were included based on the international rotation coordinator's motivation or capacity to develop such materials. Activities varied across a spectrum from being nonexistent, to providing basic travel information (i.e., weather, packing list, suggested bank and cell phone provider notifications, vaccinations), to including explicit connections to learning objectives of the rotation along with student reflection to consider what impact they would have on a host community. These variations depended largely on the international rotation coordinator's decisions made during the design of an international rotation.

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Most medical programs required that students participate in basic orientation prior to the international rotation that included safety, risk management, and travel logistics. Based on the year of the student who would be going on an international rotation, the time of year of the rotation, if students were traveling individually or in groups, and if the rotation was student-designed or offered through a third-party organization, some programs required additional educational components or online modules to be completed, but these activities varied greatly, which was reflected in both survey and interview data. Some programs included educational components such as online modules or in-person sessions related to ethics, professionalism, social media use, Health Insurance Portability and Accountability Act (HIPAA) guidelines, and basic language training or tips to work with interpreters. In cases in which medical programs sent students through third-party organizations, interviewees also stated that those organizations might have their own orientation modules to be reviewed before departure to the site.

Depending on the medical program, there might also be required educational or curricular components, which largely depended on the year of student taking the international rotation and whether students were traveling in groups or individually. For third- or fourth-year medical students, activities on site were more likely to include clinical activities, so required orientation might include practicing in a simulation lab. One interviewee commented that students are “still supervised in the field, but we feel like it's important that it's not their first rodeo, you know, on a patient.” In other cases, a

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research proposal or plan for a teaching session may be required for rotations that included more interactions with community members outside of the clinic. For first- and second-year students, who tended to do more observational activities than clinical, there may be required articles or documentaries to watch, or a research paper or guidebook entry written on the history, politics, and environment of the site. Other programs included pre-departure reflection activities to focus on learning objectives or to identify the cultural relevance of a research project and the impact that a student thinks they might have while on the rotation, either positive or negative.

There were also medical programs that did not include any type of pre-departure orientation. Safety, risk management, and basic travel logistics may be provided to students without any other curricular components. However, experiential learning theories and principles of service-learning state that adequate preparation for a service activity is a necessary component to help students make connections to learning objectives (Seifer et al., 2000).

Even in cases in which a medical program did require pre-departure orientation, a majority of interviewees expressed a desire to expand on pre-departure activities but referenced the difficulty of bringing medical students together at one time for orientation. For example, one interviewee commented:

For our first and second years, who are here on campus, we typically have one to two meetings where everybody who is traveling comes together and we talk

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about, you know, what you can expect in [country], what kind of care we provide, so forth and so on. But my fourth-year students are scattered to the four winds and so there's no easy way to bring them together for a more formal, pre-departure checklist orientation. It's kind of on my list of things that I feel like I need to make a bit more robust.

Another interviewee from a different medical program mentioned it was something she hoped to develop in the future. She said, “I would like to include information about what is appropriate for students to do, what lines and barriers that they ethically and morally should not cross.” An additional interviewee described how she required certain activities for an international rotation that she personally led, but that these activities were not standardized across all international rotation offerings at the medical school. She required students to perform research before leaving for the international rotation on the cultural and historical context of the community they would be engaging with, but said, “But that's not a requirement in general. This is very specific to my course.” These examples demonstrate the importance of the international rotation coordinator and his or her motivation or capacity to develop such materials.

Based on the details provided during interviews, it is difficult to make sweeping generalizations about what most medical programs include in a pre-departure orientation, if any activities are included. Preparation before interacting with the intended community and making connections to learning objectives are critical components of transformative,

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service-learning experiences (Seifer, 1998; Seifer et al., 2000). If a medical program solely focuses on travel logistics or does not require pre-departure activities, students may not experience the maximum benefits that international rotations can offer for learning.

Activities during the international rotation. Many of the key characteristics of international rotations were displayed through examples of activities that students perform during international rotations. Since there is no explicit requirement to include international rotations according to licensure or accreditation guidelines (LCME, 2018), activities are designed by the international rotation coordinator to meet the goals of a medical program, which leads to a diversity of experiences that an international rotation could include. The activities performed during an international rotation depend on the level of the student, whether the rotation was primarily clinically- or non-clinically-focused, and, especially in the case of clinical rotations, if a student earned academic credit during the rotation.

Similar to the analysis of pre-departure activities, it is difficult to make generalizations about what activities a certain program may or may not include. Some programs offered purely clinical experiences while some offered a mix of clinical experience or observation, non-clinical service projects, research projects, or any combination of the above. Despite the diverse combinations offered, themes emerged

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based on the type of activity included in an international rotation that demonstrated how design elements related the students' level of experience to the activities performed.

The most influential factor in designing activities of an international rotation was a coordinator's definition of "service." In most cases, "service" implied either clinical service, which involved direct patient care provided by a medical student, or non-clinical service, which did not involve direct patient care. In medical education, the term "service" is also often used to refer to episodic activities that are more volunteer-based, without reciprocal learning aspects (Stewart & Wubbena, 2014). Interviewees described non-clinical service in differing ways, sometimes referring to community education or health promotion activities or beautification projects such as planting flowers or painting buildings. Interviewees also expressed different opinions regarding which types of service an international rotation should include.

If an international rotation included clinical activities, clinical service was most often performed at an established healthcare facility such as a hospital or performed at a pop-up clinic in a community where there was no local facility. Clinical activities had to be within a student's scope of practice and were therefore limited, and interviewees expressed that students must have met skills-related prerequisites before the rotation and that they would be supervised either by faculty from their home program who travel with them or, more frequently, local healthcare workers from the host site.

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Clinical components performed during an international rotation were most often similar to clinical rotations that a student would have otherwise experienced at their home institutions (e.g., a pediatrics rotation could be required for credit but could be completed at a domestic site or an international site). Despite evidence that international experiential learning, such as international service-learning through international rotations, can produce outcomes that are not as effectively attained using other strategies or in other settings (Bringle & Hatcher, 2011; Jones & Steinberg, 2011; Tonkin, 2011), this study calls into question whether or not a student would receive greater learning benefit in an international location, if the activities performed are the same as what students would do at a home site. Other studies have found that variation in setting of experiential learning can impact student learning outcomes (Benigni Cipolle, 2010; Bringle et al., 2013; Jones et al., 2014), and scholars such as Drain et al. (2007) argued that international settings offer greater potential for benefit for student learning because international settings tend to be more resource-poor and students are less reliant on diagnostic technology which promotes greater critical thinking. The aims of this study were not to investigate student outcomes, but these data demonstrate the need for additional research concerning how student outcomes differ in domestic versus international settings, if rotation components and activities are similar in both settings. Indeed, scholars have cautioned practitioners from simply applying practices from one setting to another without considering local context (Buck, 2011).

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Across all medical schools, third- and fourth-year students more often performed clinical service activities than first- and second-year students. Clinical activities could include patient care, referral to other specializations within local healthcare systems, hospital rounds, or any activities that would be included in a regular rotation that the student would have otherwise completed at their home institution. The following quotations demonstrate how international rotations were used for medical students to complete academic credit, often performing activities that correlated to typical requirements of rotations offered at the home institution:

Interviewee 1: “For the fourth-years it’s purely clinical...they basically go with their preceptor on everything.”

Interviewee 2: “International rotations would be essentially students doing the same clinical work that they would do here in the US. So not practicing above their skill level, but they would be inserted into the schedule at their host clinical sites and work under a supervisor.”

Interviewee 3: “We are very careful with that [clinical rotations] because of the ethical issues I mentioned before to make sure that they have really good on-the-ground supervision with people with whom we’ve discussed thoroughly their scope of practice as students and what we expect them to do and not do.”

Especially in cases where students earned academic credit on international rotations, clinical components, such as those described above, were critical for third- and

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fourth-year medical students. One interviewee stated, “It really needs clinical time, and service-learning or a service component would not be a warranted credit for a clinical rotation...” This quotation draws a clear line between clinical service and service-learning and suggests that the two components could be viewed as mutually exclusive; clear operational definitions for “service-learning” would need to be established at medical programs for international rotation coordinators to integrate service-learning components with clinical service instead of seeing them as disparate concepts.

First- and second-year medical students are more likely to take non-clinical rotations, since they have less experience than third- and fourth-year students, although many medical programs did also include non-clinical activities in international rotations regardless of the level of the student. For example, non-clinical activities could include quality improvement initiatives, data entry or analysis, community engagement, or observation or shadowing. Interviewees tended to refer to these activities as “service” or in some cases “mission trip” activities, in which students might help with disaster relief, trash pickup, painting a school, or building awareness for primary care. Students may assist with a vacation Bible school, which was the case for one medical program that partnered with a church, in addition to observing medical procedures.

Other non-clinical activities included language classes; in language immersion programs up to 50% of a student’s time might be spent learning the local language. When a research project was an included activity, it was often included as a requirement

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because it was tied to funding in the form of scholarships for research. Students would be required to support either community-identified projects or design their own research, and oftentimes produce a paper, abstract, or presentation after the rotation was completed in lieu of clinical service experience in order to receive academic credit. Additionally, some international rotations might include cultural experiences or tourist activities. These activities could be built into the rotation, which was often the case in rotations facilitated by third-party organizations, or students might pursue tourism experiences on their own during any free time.

Regardless of whether an international rotation included clinical or non-clinical activities or a mix of both, activities were reported to be tied to course learning objectives in 81% of the medical programs in this study. Medical programs also often required their students to remain in contact with their home program throughout the international rotation to encourage student reflection and discuss challenges, triumphs, or questions. Reflection after service activities is a critical feature of service-learning and other experiential learning theories (Kolb, 1984; Seifer, 1998; Seifer et al., 2000). Crabtree (2008) argued that without reflection, students may inappropriately criticize community practices based on superficial understandings from brief service visits. Some medical programs required their students to write a blog post or short reflection piece to promote “thinking about their experience, their cultural interactions, differences and similarities in the medical institutions, different cases that they've seen, et cetera,” as one interviewee

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described. Other programs required students to journal and complete a daily report of what they experienced in clinic or reflections on cultural experiences. The medical program may or may not collect these journal entries, but they were often used to encourage students to reflect on their experiences while on the rotation.

The activities performed during the international rotation varied depending on the medical program, level and experience of the student, and the needs of the community. There were no apparent distinguishing factors that suggest any relationship between characteristics of the medical program and activities completed during the rotation, although in many cases the activities appeared to correlate to the students' level of experience and the resources and needs of the host site.

Post-travel activities. In-person debrief sessions after an international rotation were less common and more varied across medical programs. This was because of the challenges in timing of when a student returned from a rotation and also connected to the international rotation coordinator's motivation and capacity to include post-travel activities. Any post-travel activities that may have been required as part of an international rotation depended on the student's learning objectives and if the rotation was taken for academic credit or tied to funding. Post-travel sessions were also challenging to require of students due to the timing during the academic year when students were most likely to go on international rotations. Many medical students take these rotations in the late spring, so interviewees reported that it was often hard to gather

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the students before the next year starts, or in the case for fourth-year students, before graduation and departure for residency. Included activities or required components of a post-travel session were often dictated by academic credit requirements.

The ability for students to reflect on their experience is a critical component of experiential learning strategies, such as service-learning. Scholars have documented the importance of reflection components for experiential learning; for example, Kolb's (1984) experiential learning model frames reflection as the iterative process of thinking about experience and connecting it to action. Seifer (1998) and Stewart and Wubbena (2015) cited reflection as a key component of service-learning because it allows students to make connections between the service, their academic work, and their civic intentions. Deardorff and Edwards (2013) also suggested that without the opportunity for critical reflection, students are at risk for perpetuating stereotypes and reinforcing ethnocentrism, which contradicts many of the goals of international education. Without an opportunity for post-travel debrief, medical students may miss a crucial opportunity to reflect on their learning and connect it to the learning objectives that guided the rotation as well as their role as a citizen and future physician.

Many of the required post-travel components named by interviewees were products tied to academic credit rather than reflective activities. To receive credit, there could be a required research paper, report, presentation, poster, abstract, or case report due after the rotation. If the student received funding through a scholarship, they might

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also have to make a presentation to the funder or write a reflection piece about how the international rotation experience affected their competencies or character development. Some medical programs also either required or encouraged students to submit abstracts to national conferences or draft research articles for publication. If there is such limited time at the end of an international rotation, medical schools could consider if products such as papers or posters are the most appropriate types of post-travel activities to promote the greatest learning benefit for students, or if experiential learning activities should be followed by more reflection activities than traditional academic products.

Likely due to the reliance on academic products, an in-person debriefing session was far less common after the rotation and often optional instead of required. The international rotation coordinator might meet one-on-one with a student for an exit interview or arrange a group meeting. One interviewee stated that students often need to process emotional experiences, such as watching a patient struggle with or succumb to an illness that either does not exist or is curable in the United States. However, this example demonstrates that while there may be debriefing opportunities, medical programs may need to strengthen connections between reflective activities and learning objectives of the rotation to help students make connections between their service, academic work, and civic intentions (Stewart & Wubben, 2015), especially in light of the data that indicated that 81% of medical programs in this study tied rotation activities to course objectives.

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In few other cases, post-travel debrief could be tied more directly to the educational objectives of the international rotation or to planning for future medical practice. One interviewee described, "...On their return they have another reflective piece that's required, looking back at the learning objectives that they established at the beginning of their experience and reflecting on whether or not and how those objectives were met." This activity required students to make direct connections between their experiences on site and the learning that occurred during the rotation. Another program also used reflection components and encouraged students to connect learning from the international rotation to future goals. This interviewee said, "The idea really is to help them create something or create notes that they can use for their personal statement or their residency interviews...it's sort of helping them to identify the lessons learned, even if they didn't walk away with a new, tangible clinical skill."

Other programs required students to fill out a form or survey in lieu of an in-person meeting to collect feedback regarding what the experience was like for the student, if they would recommend it, and if anything could be improved. Students were also asked to comment on their supervisors or mentors, the safety of the site, what types of activities they performed, where they lived, and other experiences of daily life on-site to give future students an idea of what to expect if they should choose that rotation. This type of debrief was more related to a student evaluating an international host site than

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connecting experiences back to learning objectives or processing events that occurred during the rotation.

Not all medical programs in the interview sample required or offered a post-travel debrief, however. This was because timing of the international rotation during the school year was an issue for fourth-year students, who returned just in time to graduate and move on to residency. Similar challenges were expressed by interviewees: “You’re so barely able to get everyone around the table,” one international rotation coordinator commented. “What I think we need to be better at is having them do some journaling, like the reflections during the rotation.” Encouraging reflection during the rotation would help facilitate a debriefing-type process but would not be constrained by graduation or residency timelines. Another interviewee simply stated, “We don’t do a lot and should probably do more.”

Evaluation. Evaluation components varied greatly across medical programs and were closely related to rotations that were of longer duration and taken for academic credit. This was because those types of international rotations more closely mirrored a rotation that a student may have otherwise completed at their home institution (e.g., a pediatrics rotation could be required for credit but could be completed at a domestic site or an international site). In those cases, the evaluations were more often completed by members from the host community and tended to be more standardized to align with evaluations that students would have received at their home program.

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Evaluation also can provide insight into areas for change within medical programs and data regarding the effectiveness of a particular educational innovation (Driscoll, 2008; Ramaley, 2000); however, if evaluation components for international rotations are the same as for domestic rotations, medical programs may lose a key opportunity to evaluate the effectiveness of student learning in international settings. Regular evaluation of a partnership and its outcomes is also a principle for institutionalizing formal relationships (Torres & Schaffer, 2000), and evaluation of outcomes related to both student learning and the impact on the community can provide key information for the maintenance of partnerships.

No participants in this study described evaluation of the impact on the host community as a focus of evaluations of international rotations, which could be due to the noble and moral status often attributed to service as described by Eby (1998) that leads few to examine the unintended consequences on the host community. The lack of evaluation regarding impact on communities illuminates an area where medical schools can increase the focus in order to help support long-term partnerships. Many scholars have advocated for medical schools to evaluate impacts on the host community (Hartman, 2016; Kerry et al., 2011; Lasker, 2016b; Powell et al., 2010; Torres & Schaffer, 2000). Crabtree (2008) also argued that experiential learning theories prioritize students' learning and transformation rather than transformation or impact within the community, which is evident in this study.

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Many, but not all, medical programs included an evaluation of the student's performance on the international rotation which was distinct from any grading processes that would have been completed for products of the international rotation, such as papers or presentations. In few cases, evaluations were completed by members of the home program and tied to student reflections during post-travel debrief sessions. If a student did not receive academic credit for the rotation, there was no evaluation. International rotations that did not offer academic credit were more likely to be of shorter duration and taken by first- or second-year medical students, meaning that many of these shorter-term experiences did not include a formal evaluation of the student.

When evaluations were completed by members from the host site, content varied. In most cases the evaluation was an electronic or paper form from the home institution and was often similar to or the same evaluation form that a preceptor or supervisor would use if the student was completing the rotation at their home institution. One interviewee described this concept: "Usually the evaluation is...fulfilling what our expectations would be for doing their rotations at home." While some scholars have stated that when medical students are in international locations, they should be held to the same standards as in their home countries (Asgary & Junck, 2013), others have argued that new paradigms are needed to compensate for the vast difference between the settings of home and host sites, particularly related to ethical behaviors (Pinto & Upshur, 2009).

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When evaluations were included, they tended to focus mostly on student learning outcomes. One medical program that had offered international rotations for more than ten years included a robust evaluation, described by an interviewee as:

It reviews knowledge acquisition skills or how well did the student independently seek information, identify resources, critically analyze resources, their problem solving skills, their communication skills, professionalism, doing patient interviews, physical exams, presentations back to the supervisor, that kind of thing.

If a detailed evaluation was completed by a preceptor or supervisor from the host site, as in the example above, it was often then reviewed by a preceptor at the home site who could share feedback with the student.

One international rotation coordinator commented that it is often burdensome for a preceptor or supervisor at the host site to evaluate a student. Depending on the host site, a lead physician might have conflicting priorities throughout any given day and a student might be supervised at different times by other healthcare workers, such as nurses or community health workers. The interviewee said that any evaluation completed might simply be “proof of presence” for the student and not include other components. A different medical program also referenced this challenge but stated that capacity for evaluating students is a component that the medical program considers when setting up a partnership. The international rotation coordinator explained that as part of a checklist

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completed at the medical school to determine if a host site would be able to accommodate international rotations, the capacity for adequate supervision and evaluation is a priority.

In cases where an evaluation was completed by the home institution, it was often based on information shared during an exit interview or post-travel debrief, if the medical program included post-travel activities. The evaluations could include a standardized process required by academic affairs within the medical school or a more individualized evaluation based on the particular learning objectives of the international rotation. If a student took an international rotation as an elective through a specific department, such as pediatrics or family medicine, the evaluation content was often determined by the department-level faculty and international rotation coordinators may not be aware of what was included in that particular evaluation.

Across medical schools in this study, the activities that may be included in pre-departure orientation, during the rotation, post-travel, or within evaluations varied greatly and depended largely on the international rotation coordinator's motivation and capacity to develop certain types of activities. Many included components were aligned with current literature. In the case of pre-departure orientation, activities varied depending on the international rotation coordinators, the experience level of the student, the timing of the international rotation during the academic year, and whether or not a student travelled alone or in a group. During the rotation, activities ranged depending on the medical program, level of experience of students, and the needs of the community. Any post-

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travel debrief may be required or optional, and could be a survey, form, or in-person meeting. Post-travel debriefs were challenging for medical schools in this study depending on the timing of the international rotation during the school year. Any evaluation component could depend on how the students would have otherwise been evaluated at their home institution and if the host site supervisors had the time or capacity to complete an evaluation.

Additional perspectives of international rotations. This study also found that international rotation coordinators characterized international rotations in certain ways that set them apart from other international activities, viewed them as avenues to introduce students to global health careers, and identified discrepancies between how a medical school approaches the design of international rotations and how a student might pursue international activities independently. This highlights additional distinctive features that international rotations may include as opposed to domestic rotations.

The length of time of a rotation, included activities, and academic credit requirements were key factors that distinguished international rotations from other international activities such as “mission trips” or “service trips.” Most rotations in this study had to be medically or clinically related for a student to earn academic credit, and that inclusion of a service component would not be warranted credit for a clinical rotation. For example, one interviewee associated service-learning with mission work, describing service-learning as an activity that was separate and different from an

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international rotation at the medical program. Another interviewee described challenges and disadvantages of international activities as only occurring for international service trips, not rotations. Service trips were framed as shorter-term activities that do not offer consistent benefit to a community. These examples highlight tensions and challenges that have been documented in the literature regarding the length of an international rotation and the activities included and how student learning outcomes can be impacted by varying the design of the experience (Benigni Cipolle, 2010).

However, shorter-term international rotations could also be framed as key avenues for students to be exposed to elements of a career in global health. Short-term activities may be more feasible in a student's schedule, more realistic for the student's level of comfort, and could occur in the context of a longitudinal partnership with a host site. For example, one interviewee's medical school offered a range of international rotation experiences from short-term spring break trips that did not offer academic credit to regular visits to established partner sites in which the host community depended on the regularity and sustainability of the partnership for medical care. He described a "global elitist" attitude in the field of global health that scorns short-term trips, even though sometimes short-term trips are the most accessible to students and are the type of experience that could introduce the idea of global health into a student's career plans. He said:

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[There are] those who have a great deal of disdain for medical brigades or short-term medical trips or mission trips or whatever you want to call them. I find that quite frustrating. I think it is an elitist attitude, you know, if you haven't spent at least two years living in the village, then you're not really doing global health. And I've run into that attitude and I find it distressing and inappropriate...those of us that do global health have to remind people like that, that we start with this. Most people...are not going to commit to living in a village for two years until they've at least done a one-week trip over spring break. That's how you get started, that's the beginning.

Lasker (2016b) highlighted a similar attitude in her study regarding organizational goals of third-party organizations that implement medical service trips: many organizations have a goal to give students a sense of what global health is and if it is a focus they want to include in their future careers. Short-term trips may not provide large benefits to the host community but may contribute to the creation of future healthcare leaders in a global community. In cases where medical programs have goals to expose students to global health careers, short-term international rotations may be effective ways to introduce students to the field; however, international rotation coordinators and medical schools pursuing this goal should be attentive to the effect that these types of rotations can have on a host community if not in the context of a longitudinal partnership.

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Discrepancies were also evident in the way a medical school might define and pursue international rotations as opposed to the ways in which a student might independently explore international activities. This was most present at medical schools in which international rotation coordinators indicated that international rotations were not formally offered in the medical program despite there being a high level of student interest in international activities. One international rotation coordinator who was interviewed was from a medical program that did not offer international rotations, according to the corresponding survey data. During the interview, the coordinator explained that the medical program did not formally facilitate rotations, but students were allowed to pursue international activities on their own initiative, meaning that they independently located host sites, determined the activities they would perform, and arranged their own travel and logistics.

Simply because a medical school does not directly facilitate the experience does not necessarily mean that students from that medical program cannot pursue international rotations, which highlights the current challenges in defining what an international rotation is, what it includes, and who bears responsibility for student involvement. In this particular interviewee's case, there was no oversight or involvement from the medical program in any design, implementation, or evaluation of an international experience. An international rotation fell outside of the medical program's scope, and students were free to design their own experience or utilize a third-party organization to pursue international

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opportunities. This example highlights possible incongruence between the number of survey respondents who indicated that their medical program did not offer international rotations and the actual occurrence of international activities performed by medical students.

It is clear that the key characteristics of international rotations vary greatly across medical programs. These data, however, reflect the findings of Stewart and Wubbena (2014), who performed a review of the literature on service-learning in medical education and concluded that the variety of service-learning initiatives align with the range of community needs as well as the range of student experience depending on their level of training. This study also suggests that the variety of initiatives also depends on the decisions made by the international rotation coordinator during the design process. In this study, the elements in common across medical schools were the prioritization of safety and supervision of students, but rotations could differ in almost every other aspect, as demonstrated in the data presented above and the numerous examples provided by survey and interview data.

Based on this data, it is difficult to offer prescriptive statements about what an international rotation is and what it includes; however, this study proposes that many activities are directly related to a student's level of experience and the presence of curricular components tied to academic credit. Interview data also revealed that international rotations may be allowed at a medical program even if the program does not

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facilitate the rotations, so there may in fact be more medical schools that include international rotations than the survey data captured. The vast differences between programs highlight challenges to researching international rotations using comparative methods. Stewart and Wubben (2014) encouraged future studies in medical education regarding service-learning to provide consistent information of descriptive elements, such as duration, activity, funding, and assessment, as well as descriptions of program structures and implementation procedures. The data in this study provide foundational information to address these identified gaps in the literature regarding types of service-learning in medical education.

Host sites, partnerships, and third-party organizations. Medical schools tend to partner with additional organizations to plan and implement international rotations, whether it is a third-party entity or direct partnership with the host site. International rotation coordinators often set the intentions for a partnership, although they may be guided by the medical school's mission as well, and partnerships could be threatened by emerging safety concerns even if they were long-standing relationships. The use of third-party organizations to assist in planning and implementing international rotations depends on their ease of use and their correlation to the medical program's values and mission. Medical programs offer a combination of individually designed rotations for students either at a host site that was viewed as a direct partnership with the medical program, a more standardized experience for a group of students at a direct partnership site, and

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third-party organizations when a student was interested in a specific experience that the medical program couldn't otherwise offer.

This study demonstrates the variety of ways that medical schools approach direct partnerships or relationships with third-party organizations. Whether a medical program worked with third-party organizations to plan or implement international rotations depended on the ease of use, the alignment with medical school values, and if third-party organizations could expand opportunities for students. Medical programs relied on third-party organizations to help expand opportunities for students in some cases, because third-party entities could organize local supervision and ensure continuity of care, which are unique benefits that a medical school might not be able to arrange. Third-party organizations, however, also introduced distinct challenges such as cost and operating practices.

In regards to identifying host sites, creating and maintaining partnerships, or using third-party organizations, both the quantitative and qualitative data reflect the diversity of international rotation characteristics across medical schools. Quantitative data included larger standard deviations, and interview data provided detail on the range of ways in which a medical program might approach identifying and building a relationship with a host site. The only element in common across medical programs was the prioritization of student safety when selecting host sites.

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Most survey respondents indicated that their medical programs partner with the host or receiving institution or site to design or implement international rotations, as well as with non-governmental organizations including non-profit organizations. Far fewer respondents indicated working with faith-based organizations, private companies, or for-profit companies. Only 20% of medical schools in this study indicated that all design and implementation work was completed at the medical school with no other entities involved. Likely due to the types of collaboration involved in jointly planning an international rotation with an outside entity, medical schools often considered factors at the host site when designing international rotations, such as the goals, needs, timelines, resources, and capacity of the host site.

Partnerships. Greater diversity was evidenced in the approach to a partnership between a medical program and a host site, which was due to the intentions and design decisions made by an international rotation coordinator. Programs varied from having reciprocal, one-to-one exchanges with medical programs in other countries to choosing sites specifically based on community need, and from having loose, informal relationships to having more formal relationships with memorandums of understanding in place between institutions, or any combination of the various types of partnerships referenced. Formal, structured elements led to strong partnerships, as defined by international rotation coordinators, and elements such as reciprocity, alignment of values, and ability to meet community needs were influential elements of a direct partnership.

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Many of the structural features are in line with other studies that have documented that infrastructure is related to the creation and maintenance of partnerships (Bringle & Hatcher, 2000; Butin, 2006; Furco, 2007; Holland, 2000, 2009). More limitations were present when partnerships were informal or less structured and had lower investment in the site from the medical program, which jeopardized sustainability of the partnership in the face of safety concerns. Exemplar cases of direct partnerships suggest that partnership elements depend largely on the efforts of the international rotation coordinator, which demonstrates the agency that international rotation coordinators have to affect processes and characteristics of the rotation; studies of human agency have highlighted how organizational members can affect change processes by revising practices and policies over time (Jacobs, 2002; Sturm, 2006).

Characteristics of strong partnerships were often linked to formal agreements between sites and tended to exist in medical programs that had offered international rotations for longer periods of time. In many cases, a formal memorandum of understanding (MOU) could be established between the sending and the receiving entity after a partnership had evolved over time. Interviewees noted that an MOU helped promote reciprocity by streamlining logistics and encouraging reciprocal exchange of students through the formal affiliation between medical programs. With an MOU, partnership activities could become “routine” in a beneficial way in which processes were standardized and streamlined. Having an MOU in place also encouraged the sending

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institution in the U.S., in one interviewee's example, to regularly review the partnership to consider the requirements for both partners and strengthen the overall rotation experience. Having a formal structure and processes in place helped facilitate and maintain the partnership for all international rotation coordinators whose medical programs had existing MOUs, which is consistent with other studies that explore relationships between infrastructure and sustainable partnerships (Bringle & Hatcher, 2000; Butin, 2006; Furco, 2007; Holland, 2000, 2009).

A contrasting example was provided by another interviewee who described an "early relationship" with a community host site that did not have a formal agreement. Early relationships across this study, like this example, tended to arise from an existing relationship with a faculty member or student and a contact person at the host site, or from connections made during academic and professional conferences. In this example, a potential partner site wanted to send international students to the U.S. medical school, but the U.S. medical school did not have the capacity to host a reciprocal exchange, which limited the ability to create a formal agreement between sites. This medical school had only offered international rotations for one to five years, which suggests that length of time a medical program offers international rotations could be linked to the ability to create formal arrangements with host sites.

Elements of a "strong" partnership as described by interviewees are also evident in the intentional manner that international rotation coordinators appeared to cultivate

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direct relationships. Many coordinators tried to ensure that host sites had necessary infrastructure in place to host an international team before establishing a partnership agreement. One interviewee described a checklist the medical program used to ensure that a host site for a potential partnership was safe, had the resources to host and supervise students, to evaluate the capacity of the local health system, and to identify the community's needs and determine if the U.S. medical program would be able to meet those needs through international rotations. This medical school had offered international rotations for 6 to 10 years, which further supports the claim that a more formalized process of identifying host sites could be possible over time. Studies performed on change in organizations have also demonstrated this process and suggested that small adaptations over time can accumulate to create broader transformational change over time (Eckel & Kezar, 2003; Jacobs, 2002; Sturm, 2006).

Other elements of partnerships included reciprocity, alignment of values, and ability to meet host community needs. One interviewee said that the medical program at which she works solely prioritized reciprocity in partnerships. This medical school had offered international rotations for more than 10 years. A direct one-to-one relationship at this program meant that this U.S. medical school must accept a reciprocal exchange with an international student from the host country to which it sent its own student. This one-to-one relationship limited the number of spots available for rotations, but the interviewee

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noted that it benefits both medical programs and did not cause undue burden on the host site.

Several interviewees also noted the importance of partnering with host sites that share similar values in terms of promoting the health of vulnerable populations. One medical program representative stated that they chose sites “where we’re able to send students on a regular basis,” so the sites “have to have a strong community partner, and that can take the form of an academic institution or administrative health system on the ground, and that’s critical to ask because our goal is to empower and build capacity within local systems and that local partner.” The international rotation coordinator from this medical program described the importance of the U.S. medical program to meet community needs:

It’s about what can we do for the community, needs they’ve already identified or ones that they want to identify together...we have community partners involved to determine what is a rotation, what are your activities that students can participate in that will uphold their mission, that will address their needs, that will be a sustainable collaboration.

Another medical program identified a partner site because “...they were the most in need. They had the highest medical needs because the health system was not strong enough.” In both examples, the medical schools had included international rotations at least five years. The imperative to partner with host sites that share similar values as the

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U.S. medical school was set by the international rotation coordinators in these two examples, indicating that an international rotation coordinator's approach can define a partnership regardless of institutional factors such as the length of time international rotations had been offered at a program.

Illustrative examples of direct partnerships. During interviews, several international rotation coordinators described inspiring examples of partnerships cultivated at their medical programs that developed into international rotation experiences for students and long-term relationships between the sending medical institution and the host community. In the two examples presented below, the partnerships were created and maintained primarily due to the efforts of the international rotation coordinator. Scholars such as Holland and Gelmon (1998) and Ramaley (2000) have demonstrated that partnerships have unique elements, history, capacity, culture, missions, and challenges; these examples support those claims and display how unique features led to long-term partnerships at these medical schools.

The first example demonstrates how factors within a partnership can affect impact on the community. One interviewee described the impact a long-term relationship with one community could engender. She explained, "We've been going to the same community for the last eight years. Some of the babies were delivered by our doctors." Students at this medical program met requirements for the international rotation and also participated in community building activities such as religious or cultural gatherings, or

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public health and public education activities. The students interacted in other aspects of community life outside of the clinic or hospital. This interviewee said that sometimes those interactions could result in greater impact on the community, although those types of impacts are difficult or impossible to measure. For example, she described:

Last year before I went, I got an email from a student...he was thanking me for the influence we've had on him...apparently he was a translator for our team in 2012 [at the host site] and we inspired him to go to medical school, and now he's a fourth-year in the medical school.

The medical program in this example had offered international rotations for 6 to 10 years. Similar to earlier examples, the international rotation coordinator had set the criteria for establishing partnerships. The length of time the school had offered international rotations, the longitudinal nature of the partnership, and the maintenance performed by the international rotation coordinator to sustain the partnership all appear to contribute to the success of this partnership. Including activities outside of clinical service could also have contributed to the relationships and connections in this example that created greater impact on the host community.

A second example of building a long-term partnership was provided by a different interviewee, who described the steps involved in creating a sustainable partnership that ultimately built capacity at the host site for local healthcare workers. The interviewee visited a site during a medical brigade along with a church team that was performing

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service work, and he took students around the local area to ask community members at the host site where healthcare support was needed. He described the process of investigating sites at multiple villages with the help of community members and eventually identifying a village community that he felt his school could support based on size, location, safety, and need. After two-and-a-half years of this investigation and design phase, his medical program developed a relationship with the village and teams of students and faculty began to visit three or four times a year. They provided medical care, supplies, and eventually also built capacity to create community health worker roles in the village to record births and deaths and deliver basic first aid or blood pressure checks.

In this example, the partnership described originated solely because of the efforts of this international rotation coordinator. The medical program that maintained this partnership had offered international rotations for more than 10 years. This case further supports that the length of time a medical program had offered international rotations can influence partnerships and highlights the importance of the international rotation coordinator's intentions and involvement. It is also evident in this example that this partnership developed gradually over time as more structural elements were added, ultimately leading to routine visits multiple times a year in the context of a longitudinal partnership.

Despite efforts of the international rotation coordinator, formal structures, and a medical school's history of offering international rotations, not every medical program is

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able to develop such impactful relationships with international communities. Themes of limitations to partnerships and partnership development also emerged through the interviews. Partnerships could be jeopardized if there was no institutional support to formalize partnerships, such as financial support, or if safety concerns emerged. Connections to host sites that existed due to personal relationships between a student or faculty member and a contact at a host site were particularly challenging to maintain because of a lack of broader institutional support.

For example, one interviewee commented that it was difficult to formalize connections that were based on personal relationships that a faculty member might have with a contact at the host site: “Without a university-level decision to say, you know, strategically we’re going to partner with this school or this hospital, and we’re going to invest in this site...That sort of planning I don’t really think has taken place.” She said, in regards to existing partnerships, “they are long standing partnerships, but the university does not have skin in the game as far as financial support of the sites.” In this case, despite having a “long standing” partnership in place with a history of offering international rotations for more than 10 years, the institution did not have a financial stake in the partnership and the partnership depended on individual relationships. The lack of institutional support in this example limited the partnership, despite the international rotation coordinator’s efforts.

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Limitations caused by lack of institutional investment in partnerships are challenges to any institutionalization process that a university or program might attempt in order to sustain long-term partnerships and are represented in current literature regarding institutionalization of service-learning partnerships. For example, Gardner et al. (2000) argued that disproportionate resources separate institutions and community sites. Theories from organizational studies that have investigated funding and resource allocation of departments within higher education also highlighted power differentials that budget allocation could create (Edwards, 1999; Hackman, 1985; Pew Foundation, 1996). In addition, lack of investment from institutions is a well-documented barrier in the literature related to the long-term sustainability of partnerships (Butin, 2007; CCESHP, 2005; Seifer & Calleson, 2004; Stewart & Wubbena, 2015).

Lack of financial or other investment from an institution can create further challenges to the partnership when it is threatened by safety concerns, which was demonstrated to be a key priority when designing international rotations. Several interviewees referenced existing relationships with community host sites that were under threat or simply on hold because of political turmoil in the host country. Even if a medical program or the surrounding higher education institution had noble intentions of sustaining a long-term partnership, safety issues that would prevent student travel seemed to threaten the existence and the future of the partnership. Interviewees commented that if the safety of a site becomes compromised, they will no longer send students until the

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safety issues are resolved by the host country. Many of these interviewees referenced host sites that were in countries experiencing political turmoil; these safety issues prevent students and faculty from continuing to engage with the site.

Strategies must be responsive to environmental changes and systems must be adaptable in order to adjust to circumstances that jeopardize a long-term relationship. Mwangi (2017) argued that if partnerships are not created and maintained at an institutional level, they can become transactional and lose the qualities of mutuality and reciprocity, which were elements that international rotation coordinators in this study attributed to “strong” partnerships. Altbach et al. (2009) also claimed that partnerships created by institutions with an internationalization agenda often create inequalities because there may be competing priorities and less of a focus on aligning needs and values between the institution and host site. These challenges and limitations are evidenced in the examples described by the interviewees above.

Examining the characteristics of the medical program, such as size, location, and years that international rotations have been offered, do not necessarily illuminate certain characteristics that relate to these examples or outcomes; however, other elements such as alignment of values and capacity to address community needs appear to be related to “strong” partnerships. Additionally, based on the examples above, many of the features of the international rotations seem to depend more on the international rotation coordinator’s intentions than any one feature of the medical program. In many cases in

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this study, medical programs appeared to have multiple forms of partnerships or connections with host sites. A medical program could have several long-term term relationships established, as described above, and may in addition send students on individual trips to various other locations, with or without the involvement of a third-party organization.

For example, one interviewee prioritized establishing direct partnerships with host sites and never utilized third-party organizations to plan or implement international rotations. She said, “We want to have a direct relationship with the university or the country, or a specific program in-country where we work.” However, only 20% of medical programs that offered international rotations did not partner with other entities to plan or implement international rotations, indicating that all work was completed at the medical program. Examples of the variety of ways a medical program could plan and implement international rotations reflected in this study also included several instances of medical programs working with third-party organizations.

Third-party organizations. The use of third-party organizations to help plan and implement international rotations depended on the ease of use and the medical program’s values, and presented another set of challenges to identifying authentic organizations that prioritized both student safety and learning as well as community benefit. International rotation coordinators referred to third-party organizations across a spectrum from describing some as a “gold standard” to critiquing that others are only it for the money.

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Third-party organizations could expand opportunities for students and offer unique benefits such as local supervision and continuity of care, but also presented distinct challenges related to cost and operating principles that may not align with a medical school's values.

Few studies have explored what factors within a medical school might lead international rotation coordinators to utilize services from a third-party organization (Lasker, 2016b). In this study, third-party organizations tended to be used by medical schools that were smaller and had offered international rotations for more than 10 years. The medical schools that worked with third-party organizations were a mix of public and private schools and were located across urban, suburban, and rural locations. Most medical programs in this study used third-party organizations in some capacity, which tended to be non-governmental organizations (NGO) including non-profits and international NGOs. Far fewer medical programs indicated working with faith-based organizations, private companies, or for-profit companies.

Across the survey and interview data, there were mixed opinions regarding the use of third-party organizations to help plan or implement international rotations. A third-party organization can be a private, for-profit, non-profit, or faith-based entity that organizes international trips for medical students and other learners. Trips organized by third-party organizations are often for a shorter period of time and have often been referred to as "voluntourism" (Lasker, 2016b). Although the use of third-party

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organizations can alleviate the work required for international rotation coordinators to design and implement international rotations, third-party entities sometimes have organizational goals that conflict with the goals of the medical school or student. Lasker (2016b) found in a study of U.S.-based third-party organizations that organizational goals may often conflict with goals of increasing the health of a community to the extent that they can actually harm the host community. However, third-party organizations often have the benefit of being ‘on the ground’ and already have logistical components arranged for students, such as living quarters, food, and transportation.

Ease of use for the international rotation coordinator and the student was a prominent theme related to why a medical program might partner with an external organization to help students engage in international rotations. When asked why they partner with third-party organizations to plan or implement international rotations, three separate interviewees responded with a question: “Why reinvent the wheel?”

International rotation coordinators commented that planning the logistics of international rotations are time consuming and difficult. Third-party organizations offer established programming and, in most cases, room and board, cultural activities, insurance, and more. Interviewees commented that prices for third-party organizations can vary greatly, but in many cases they are reasonably priced for the ease of use offered to both the student and the medical program. In some cases, third-party organizations even include their own orientation programming, and often have dependable networks in place for

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communication to occur between the student and sending institution while in-country and between the student and host site physicians or mentors once the student returns to the home program.

Third-party organizations can also help expand the opportunities available to students and allow them to have more options of locations to pursue. A medical program may have a limited number of spaces to send students to at any one point, but a third-party organization can often accommodate a larger volume of students. Some rotation experiences offered through third-party organizations can also include public health components or language immersion opportunities, which the medical program may not offer. Students taking these types of rotations can learn about public health in addition to clinical medicine or learn and practice medical languages through classes that supplement clinical experiences. In the case of language immersion programs, it appeared easier for many medical programs to utilize third-party organizations rather than develop their own programming with a language department on their home campus.

The alignment of values between a medical school and a third-party organization was also a significant element in an international rotation coordinator's choice to use third-party organizations for international rotations, especially if a coordinator felt that a third-party organization could help in the pursuit of the medical school's mission. Third-party organizations are already on the ground, may have more continuity in the host site, are often well-known in the community and familiar with the community's needs, and are

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a useful mechanism for follow-up and continuity of care. One interviewee stated, “With especially our [country] site, I'm in contact with them the rest of the year to continue management on some patients or give advice. If we tried something and they check in and say, you know, that didn't work. What should we do next?” This aligned with the medical program’s values and mission to contribute to longitudinal care instead of sporadic, “voluntourism” rotations. Another interviewee commented, “[The organization] has a number of sites with need within those countries where we've had students do rotations as well, because our values in principles and practice in global health aligned with it.” Ultimately, interviewees emphasized that third-party organizations can help medical programs pursue their mission if values align between the organization and the medical school.

Working with third-party organizations also offers a unique benefit of allowing students to be supervised and mentored by local physicians and healthcare professionals that are from the host community, which oftentimes is easier for third-party organizations to arrange than for the medical programs due to their presence on the ground.

Additionally, other health professionals may be rotating at a site, which can promote interprofessional teamwork. One interviewee commented, “We don't have to worry about trying to get our faculty members a hundred percent of the time or even our students there, there’s an element of trust to take care of your students, to shepherd them while they’re there.” This quotation also enforces the idea of continuity of care; third-party

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organizations can often arrange for multiple groups of students from different medical programs to come throughout the year, so medical programs do not have to be as involved in ensuring long-term relationships or longitudinal support.

Several interviewees stated that it requires a lot of work and planning on the student's part to design an individual rotation, which often works to discourage students from that route. Students may instead choose an international rotation that might be offered through a third-party organization or through an established site that has a long-term relationship directly with the medical program. At one medical school that had a dedicated office for the organization of international rotations, the interviewee said, "I don't think I've ever had any student utilize that [individualized rotation] because it's a lot of work, I mean they're starting from scratch and you've got a third-party company that has done all that work for you." In other cases, there might be funding restrictions that disincentivize use of third-party organizations. An international rotation coordinator at a different medical school stated, "We've had a small pool of funds at the discretion of my office and we have subsidized some of the trips for the students who go to the places where we are the organizer rather than a third-party organizer."

There can also be major challenges or disadvantages to utilizing third-party organizations. They are frequently more expensive for students to use than for a student to organize his or her own individual rotation, and they may not all operate within ethical norms of the profession. Many interviewees commented on the danger of the

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transactional nature when a student utilizes a third-party organization. “There's a million vendors out there who are willing to take your money and put you in a foreign country,” one interviewee stated. There may be no vetting process of the student, to ensure the student is prepared for the experience, or care taken to establish a mutual relationship with a host site. Another interviewee said, “Most cases, you’re not applying, you’re just purchasing a product.” International rotation coordinators acknowledged that sometimes the packages offered to students can be compelling, with built-in tourism activities. An additional interview described how students can browse for experiences: “It’s kind of like if you’re flipping through a catalog...these companies have found a niche area where they can package everything...it’s literally à la carte.”

These statements follow the trend running through higher education of neoliberalism and highlight a students’ power in the landscape of international rotations. Lasker (2016b) cited literature in her study that stated that volunteering can sustain neoliberal ideology and has even been referred to as a new form of colonialism. Third-party organizations can often be more focused on serving their own organizational needs or the needs of the volunteer - in this case, the students - than the needs of the host community. Lasker cautioned that conflicting goals can diminish benefit to the host community even if the third-party organization provides critical care for a community:

Just because an organization has multiple goals does not mean that it cannot also provide valuable, even life-saving, health care services in poor communities. But

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it may make it less likely to do so in a way that provides the greatest possible benefit to host communities (or indeed any benefit) and the least possible harm to communities in need. (2016b)

Prioritizing the students' needs can often, although not always, come at the expense of the community.

Also of interest is the response from interviewees to the particular phrasing of the question. As posed during the interviews, I asked international rotation coordinators, "Why does your medical program partner with third-party organizations?" One interviewee responded, "I don't know if partner is the right word, but we use them." Another interviewee said, "I would be reluctant to use the word 'partner,'" and described how she viewed her medical program as a feeder to third-party organizations without the give and take of a partnership. Even if medical programs use third-party organizations to assist in planning or implementing international rotations, they may not view these connections as partnerships, which means that literature exploring partnerships with community sites may not be applicable to guide investigations of working arrangements between medical programs and third-party entities that organize international rotations.

This study demonstrates the variety of ways in which medical schools can partner directly with community host sites or use third-party organizations to expand opportunities for students. Overall, medical programs offered a combination of individually designed or standardized rotations for students or groups of students at a host

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site that was viewed as a direct partnership with the medical program or used third-party organizations when a student was interested in a specific experience that the medical program couldn't otherwise offer. In general, medical schools tended to partner with additional organizations to plan and implement international rotations. International rotation coordinators often set the intentions for a partnership, although they may be guided by the medical school's mission as well, and partnerships can be threatened by emerging safety concerns. The use of third-party organizations to assist in planning and implementing international rotations can depend on their ease of use and their correlation to the medical program's values and mission.

Structural and Programmatic Components Necessary for International Rotations

In addition to identifying key characteristics of international rotations, my first research question also examined the structures and programmatic components that are necessary to support international rotations. It is difficult based on the characteristics of international rotations evidenced in the data to conclude that certain structural or programmatic components within a medical program might predict the inclusion of international rotations, but the data do suggest that certain features might facilitate and support international rotations at a medical program. Formal structures such as academic or administrative offices dedicated to international rotations, or programmatic features such as formalized and standardized processes can help support international rotations. The majority of international rotations do not include collaboration with other offices

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outside of the medical school (61%), but structures such as dedicated offices or support staff and formal, standardized processes appeared to help facilitate international rotations. These features stood out in examples that interviewees shared about how elements of international rotations at their medical programs evolved over time as features that were necessary for the progression to occur. Instances of change over time included curriculum developments, broader efforts toward internationalization at the medical school, or the creation of new offices, roles, or processes. Many of the changes described by interviewees involved nebulous, informal processes for international rotations being formed into more structured and standardized processes. Together, these data suggest that formalized structures, such as academic or administrative offices, and programmatic features such as standardized or formal processes, can help support international rotations.

This evolution in which medical programs gradually made changes to international rotation processes over time connects to Feldman and Pentland's (2003) claim that routines could create ongoing opportunities for variation, selection, and retention of new practices. Seemingly stable structures with defined boundaries in work roles could be changed and adapted by the employees who could realign work processes with developments in the field of practice (Kondakci & Van den Broeck, 2009). This is also consistent with studies regarding service-learning in medical education that

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demonstrate the iterative process in which courses are designed, implemented, evaluated, and revised depending on the outcomes and circumstances (Stewart & Wubbena, 2014).

Structures and programmatic features identified in this study that help support international rotations are also consistent with the literature that describes components that are necessary for service-learning experiences. Furco (2007) and Littlepage and Gazley (2013) claimed that dedicated staff members and administrative offices promoted the sustainability of service-learning efforts in higher education. Holland (2000) and Jacoby (1999) both claimed that campus-based centers dedicated to service-learning might not be connected with health professions schools, making it difficult to link service-learning with health professions education. Many examples demonstrated how these components supported international education efforts.

The most common response referencing the facilitating structures in this study indicated that the people within the medical program can have a great impact on international rotations. Having administrative support, invested faculty, supportive leadership, and interested students were factors named by medical programs as being supporting elements. Funding was also a frequently mentioned facilitator. Infrastructure, such as dedicated offices, academic tracks, or established processes, and relationships, such as alumni connections or connections to third-party organizations, were also listed by respondents as facilitators. These data suggest that collaborating with other University offices outside of the medical school might support, but is not required for international

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rotations, while structures within the medical school, such as dedicated staff, offices, or funding can also help support international rotations. Structures such as campus-based centers or offices or having dedicated staff members to support experiential learning have also been documented in the literature as being important to institutionalizing and sustaining partnerships (Furco, 2007; Littlepage & Gazley, 2013).

In many, although not all cases, there were multiple offices involved in planning or implementing international rotations beyond just the medical program. Medical programs might partner with a university international or global office, such as a study abroad office, a University risk management office, or another school such as public health. Existing literature also demonstrates the importance of working across departmental silos, which has been tied to transformational change efforts in higher education (Eckel & Kezar, 2003). Hoover and Harder (2015) also argued that informal structures and connections between departments in higher education are widely understudied and underutilized.

Other examples that supported these conclusions about structural and programmatic components that are necessary for international rotations were the interviewees' descriptions of changes that took place within the medical program related to international rotations. These themes supported the data from the survey that suggested particular components in the medical school that could help promote international rotations. For example, one interviewee described how new funds that became available

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led to the creation of new administrative roles within a global health office and small scholarships for students to participate in international rotations. This expanded the opportunities available at that medical program, suggesting that dedicated staff and presence of funding are two components that can promote international rotations.

Other supportive programmatic features were the creation of new curriculum initiatives that required or encouraged international rotations, such as medical language programs, global health certificates, or academic concentrations. Curricula in medical schools have historically controlled teaching of knowledge, skills, and values in medical education (Genn, 2011), and scholars have argued for curricula to attend to new pressures in global health education and stated that international activities are moving from the margins of medical education to more central educational programming (Hanson, 2010; Harden, 2006). Creation of new programmatic elements that require or encourage international rotations was a direct and clear method to support international rotations.

Additionally, new faculty or staff can introduce relationships to the medical program through which host sites could be developed. One interviewee noted that the admissions and human resource office at the medical school had played a role through efforts to increase the diversity in the student and staff composition, and more diverse constituents led to a greater demand for international or global experiences in the medical program. Another interviewee referenced a connection to internationalization efforts at the medical school and stated that his position was created specifically in a centralized

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administrative unit to implement international rotations as part of the internationalization agenda. These examples highlight the strength of student and faculty interest as well as dedicated administrative offices or staff to organize and implement international rotations, which supported survey data related to facilitators of international rotations.

In some cases, interviewees described changes that occurred as part of the programmatic features of the international rotation that strengthened the rotation. Similar to the example of a dedicated administrative office, interviewees described how formal programs and processes were created at the medical program that had grown out of “low key and permissive” opportunities for students. One interviewee, who described this permissive manner, stated that her medical program was found to be falling short of meeting LCME accreditation criteria, so compliance with regulations had to be addressed. More formal structures were put into place to regulate students’ engagement with international opportunities, and curriculum was developed to strengthen the scholarly and educational components.

At the same medical program, processes had been established over time to make sure that students would not be put in situations where they would be pressured to practice outside their scope. Ethical modules were developed and included in pre-departure requirements, which was a component that helped the medical program ensure that the students were prepared to respond in situations in which they may be asked to practice beyond their training. Establishing these modules and training processes for

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students were components that the interviewee cited as being key for student success while on the international rotation. This medical program had offered international rotations for more than 10 years, which demonstrated ample time to make programmatic adjustments to international rotations as lessons were learned during implementation. Theories from organizational studies regarding how incremental changes in routines over time can lead to fundamental change are especially useful to illuminate the evolution of medical programs and how supporting structures and programmatic features that were established over time created changes in the program (Feldman & Pentland, 2003).

Another interviewee described a similar incremental manner of change, referencing how the medical program built new structures as certain situations occurred, such as putting a waiver in place after learning the school was liable for the students. This medical program was had offered international rotations for 6 to 10 years. The international rotation coordinator at this program also described a similar evolution in which her medical program took a loosely regulated approach to international rotations in past years, but grew to include application and interview processes as well as criteria for students and sites to meet. This created a vetting process in which the medical program became more involved in regulating the activities that the students could perform at certain sites. Although the medical schools had different histories related to the length of time international rotations had been offered at the school, the similarity of the approaches taken to adapt over time and introduce change suggests that any medical

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program can introduce new processes and guidelines incrementally to address emerging changes.

Examining instances of change within medical schools through interview data helped illuminate structures and programmatic components that promoted international rotations. Examples of these types of changes included curriculum developments, broader efforts toward internationalization, or the creation of new offices, roles, or processes. Many of the changes described by interviewees involved nebulous, informal processes for international rotations being formed into more structured and standardized processes. Together, these data suggest that formalized structures, such as academic or administrative offices, and programmatic features such as standardized or formal processes, can help support international rotations. These examples are corroborated by literature from both Furco (2007) and Holland (2000, 2009), who described the need for service-learning to be embedded in campus infrastructure, and claimed that by establishing offices, staff, and standardized processes, medical schools can better support international rotations that may include service-learning components in the experience. In addition to certain structural or programmatic aspects that can promote international rotations, there are larger contextual factors that create barriers or facilitators to international rotations and that may drive or deter a medical school's participation in international education experiences.

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Barriers and Facilitators to Implementing International Rotations

The second research question in this study sought to identify barriers and facilitators to implementing international rotations as well as broader factors that could drive or deter a medical school's participation in international rotations. Barriers that exist can be experienced during the planning process of international rotations and exist within structural components of the rotation. Prohibitive barriers include cost and safety challenges as well as challenges meeting student expectations during the design of international rotations. Other barriers included challenges to integrating international rotations into broader medical school curricula, such as finding faculty or school leaders to support international rotations, which could then lead to barriers in establishing and maintaining partnerships. These structural barriers and the barriers experienced during the process of planning an international rotation were similar across medical schools. Planning and implementing international rotations could also introduce ethical barriers, but international rotation coordinators framed these issues as aspects that structures and programmatic features could address.

Elements that helped facilitate international rotations were similar across medical schools, reflecting the relationship to barriers experienced across medical schools, and were similar to features identified earlier as key characteristics that were critical for strong partnerships and to aspects represented in the literature as being contributors to institutionalization of service-learning efforts, indicating that having strong partnerships

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in place at a medical program could better facilitate student involvement in international rotations. Factors such as high student interest, convenient opportunities to develop community partnerships, and international rotation coordinators' personal experiences and motivation, such as passion or personal mission to inspire students or promote health equity also acted as facilitators of international rotations.

The barriers and facilitators present in this study exist primarily in the microsystem and exosystem of a medical school, meaning that elements within the culture of the medical school or its organizational elements could influence international rotations, as well as the students, faculty, and staff within the academic department or within the medical school as a whole. The broad themes of these data suggest that there are organizational components that medical schools could establish to overcome barriers and help facilitate the planning and implementation of international rotations; these components correspond to principles of institutionalization identified in the literature regarding service-learning. Barriers experienced during the planning process or that students experience in participating can be addressed by dedicating offices, staff, and funding specifically to support international rotations, and by attending to the dynamics of a partnership to encourage reciprocal and ethical relationships.

In addition to structural or programmatic features that could act as barriers or facilitators, there were broader contextual and environmental aspects that could drive or deter a medical school's participation in international rotations. The benefits and

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disadvantages associated with international rotations as well as additional contextual factors within and surrounding medical schools held great influence in a medical school's decision to engage in international rotations. Factors that drove medical schools to participate in international rotations included student demand, addressing changing workforce demands, and broader environmental drivers, while factors that deterred a medical school's participation were related to a lack of structures or processes in place or the length of time a medical school had been open. Examining factors that drive and deter a medical school's participation in international rotations reveals connections between certain contextual factors and the inclusion of international rotations at a medical program.

Barriers to implementing international rotations. The barriers indicated in survey responses and interview data were similar across the sample, indicating that most medical schools experienced similar challenges and that these difficulties could be addressed by solutions that can be implemented across diverse types of medical programs. All barriers that were listed in the survey were indicated to be at least slightly influential, and medical schools of all types in this study (i.e., public, private, varied size of student body or location, etc.) expressed similar challenges, which suggested relatively similar influence across the various types of medical schools in this study. This could be due to the similar conditions created by outside entities, such as professional and peer-scholar groups, who endorse the use of strategies such as service-learning and often

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provide funding for community-engaged research and programming, which sets the context in which international rotations are implemented (Horowitz et al., 2009; Seifer et al., 2012). Barriers identified in this study include challenges to the process of structuring a rotation or partnership, barriers that students face to participate in international rotations, and barriers that international rotations coordinators face when planning and implementing the rotations. There is some overlap between barriers that both students and faculty face, and unique ethical barriers that can surface when establishing and maintaining partnerships.

Structure and planning processes. Barriers could surface during the planning process or the structuring of international rotations that were often related to lack of support from faculty, staff, or medical school leaders and were experienced because international rotations were not viewed as key academic or educational pursuits within the medical school curricula. Scholars have argued that there must be systems in place to position experiences such as service-learning as part of curricular practice (Butin, 2006), which supports the importance of structure and programmatic features that can create barriers if not in place at medical schools.

A primary challenge was identifying faculty that were able to either travel with students or serve as mentors at the home institution while students were in the host country. This was because involvement in international rotations was not appreciated as a teaching duty for faculty, and faculty often had to take vacation days to participate in

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international rotations, which supports conclusions from current literature that emphasize the importance of faculty rewards, incentives, and release time in health professions to pursue community engagement (Abes et al., 2002; Calleson & Seifer, 2004; CCESHP, 2005; Israel et al., 2001; Seifer & Calleson, 2004). There is also a high cost involved to send faculty over from U.S. medical programs to supervise students both in terms of travel logistics as well as the cost of leaving work, oftentimes clinical revenue, behind. Faculty are often pressured to prioritize research or clinical care over education in medical schools (Grochowski, 2003). Additionally, there are few structures within the promotion and tenure process that encourage faculty to participate in these types of rotations, which is also cited as a barrier in the literature (Ahmed et al., 2004; Butin, 2005; Furco, 2007; Seifer & Calleson, 2004; Seifer, Wong, Gelmon, & Lederer, 2009). The role of faculty is significant because inertia from faculty can lead to a culture that prevents change in medical education (Ginsburg & Tregunno, 2005; Grochowski, 2003; Lane, 2007).

For example, interviewees who were faculty explained the challenges of having to perform clinical work on top of teaching or giving up clinical work and potentially taking a cut in pay to focus on educational endeavors. One international rotation coordinator who was a faculty member stated that equitable pay for faculty involved in international rotations would be beneficial. She said:

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Valuing in a monetary way...because you're going to be upholding the health of vulnerable people and because you're going to be also teaching our students and residents how to do so. That is part of the vocation and should be part of the education. That [equitable salary] would make it much, much easier. Certainly would make it much easier for me to recruit the different groups to our activities.

This interviewee went on to describe the challenges she faced to recruit other faculty to support and participate in international rotations. In reference to the faculty, she described:

It's not a viable option for everyone and that's unfortunate, because I think people would be engaged. I see a lot of physicians on my campus who want to participate in our activities but have to take their personal vacation time to do so.

International rotation coordinators who were staff members experienced barriers due to a lack of other support staff to help plan and implement the rotation. This was due to the fact that international rotations were not viewed as core aspects of the medical school curricula at most schools. For example, one international rotation coordinator stated, "I wish that since it's a for-credit experience, it could carry the same weight and have the same support as another elective or clerkship." In contrast, at medical schools in the study that had a fully-staffed office of global health to establish and maintain partnerships could support international rotation coordinators in identifying safe sites. Having dedicated staff and an organizing entity at a medical school made a noticeable

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difference in the ease of establishing and maintaining partnerships, according to interview data.

Beyond faculty or support staff, challenges also surfaced when international rotation coordinators set expectations for leadership at the medical school. This also was related to the fact that international rotations were not viewed as core academic programming in the medical school curricula. One interviewee described how international rotations were viewed differently by leadership, despite having a high volume of students who participated:

That [number of students] would be a large elective for anything else. But it's in this nebulous, 'you'd do it because you love it' kind of thing. Trying to increase the quality has been a real struggle. I wish we could see it more as a true academic experience with, you know, 'I've got objectives, this is what we're trying to learn, this is what we could show as outcomes of learning.' But it's more like, 'Oh, that's nice. Yeah, you should do that because that looks good'. The more that we can treat it as an academic subject, I think the better, in my opinion.

Many of the structural barriers or challenges that international rotation coordinators faced during the planning process stemmed from the international rotation not being treated as a core academic subject.

Lack of support from leadership consequently creates additional barriers. One international rotation coordinator explained that it is difficult to help school leaders see

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benefits besides monetary value. She said, “It's all in getting the administration to realize that, yeah, this may not be a money maker, but it is truly worth the investment. And that is the most difficult part is getting your administration to appreciate the value.” A different interviewee described similar challenges and related conversations he had with the Dean of the medical school to try and encourage the Dean to see beyond state boundaries. He said that he is often asked:

‘Why are you going over to country X? When the needs are so great, you know, two blocks away from the medical school.’ And my regular response is, it's not either/or, it is both/and, but I still have to fight that battle on a regular basis. ‘Why are you spending those resources elsewhere when the needs are here?’

The barriers present in this example represent the challenge of garnering support from leadership to define community in a global sense and to invest in communities even if they are beyond the immediate boundaries of a medical school.

Another common barrier experienced during the implementation of international rotations was the difficulty associated with setting expectations for students or for the rotation; again, this was because international rotations were not viewed by students as core educational pursuits. Because of this, international rotation coordinators experienced challenges in helping students connect the international experience with educational objectives. One interviewee said:

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I think the challenge for me at a medical school setting is redefining what these experiences are and what they aren't for medical students. They have an expectation to have it be very hands-on, where they want to practice their Spanish, or they think it'll be fun. So the challenge for me is really redefining and leading with education, leading with the educational objectives and an academic pursuit rather than, 'It'd be fun to hang out somewhere internationally for a month or practice clinical skills on patients.'

These examples demonstrate the concept of embedded agency, which has been explored in organizational studies and proposes that organizational actors can redefine their contexts through adjustments made at multiple organizational levels when institutional arrangements become misaligned with the needs of participants (Feldman & Pentland, 2003; Seo & Creed, 2002). International rotation coordinators can use embedded agency to create change through the processes of setting expectations for students, faculty, or leaders across the medical program.

Additional barriers related to the structure and planning of international rotations affected the creation and maintenance of partnerships for international rotations. These barriers existed largely because of limited spots available for reciprocal exchanges, and challenges faced in the process of establishing new partnerships or formalizing existing connections.

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In cases in which a medical school prioritized reciprocal exchanges, there may be limited spots available either at the home institution or at the host site for a one-to-one exchange. In other cases where international rotation coordinators attempted to either create new partnerships or formalize existing connections, barriers surfaced when the priority for the students' safety affected the creation of what would otherwise be a productive partnership. Competition of sites and lack of convenient opportunities to develop community partnerships were indicated as influential barriers across all medical programs in this study.

One international rotation coordinator referenced the sheer amount of work that is required to sustainably and responsibly establish partnerships:

There are a number of ways to do global health horribly and not sustainably, not ethically, not respectfully of the communities you're working with, and so that just becomes...the barrier to doing it, you know, freely and with large volumes of partners just because we want to make sure that we kind of do that in any organization or global health site that we're establishing, to be sure that it's done well.

This interviewee felt a responsibility to establish partnerships in a sustainable and discriminating manner to both benefit students' experiences while on the rotation and also to safeguard the host community from harm. This was viewed as particularly

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burdensome because interviewees expressed that they often did not have enough time to focus on strengthening rotations.

Overall, barriers related to the structure or programming of the international rotation included faculty involvement, lack of support staff, difficulties setting expectations for students, support from leaders, and adequate funding. These barriers were experienced at medical programs across the study.

Barriers to student participation. Students faced common barriers across medical schools in this study related to cost and timing of taking an international rotation. Cost and timing within the medical program were demonstrated earlier to be key characteristics of international rotations that drove certain design features during the planning process, which suggests that these barriers can be more easily overcome by selecting different options within the planning process to make international rotations more accessible for students.

The most influential barrier in this study was funding and the additional cost that students face to finance an international rotation experience, because medical programs required additional fees but did not provide funds to students to cover these costs. A full 70% of survey respondents indicated that there are additional course fees for international rotations, including travel, beyond regular tuition payment, and these fees were paid solely by students at 83% of the medical schools represented. Students often had to pay for housing and transportation on top of tuition, and there were few scholarships available

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at medical schools that covered the entire cost of an international rotation and no instances where extra fees were covered entirely by the medical program. In cases where a rotation was facilitated by a third-party organization, the cost may be even higher for students. One international rotation coordinator summarized:

I think that that's the biggest issue, that right now it seems to be only available to those who have the funds. And I think that's a big challenge. When you think about the cost of medical school, there should be a way that it's integrated in a way that any medical school student, if they enroll in a school that has this kind of a program, that they could go.

Another example provided by an interviewee demonstrated the impact that high cost also has on partnerships. The coordinator described a partnership that her medical school had established in an African country based on a relationship with a faculty member at that site, but that they eventually had to abandon the site because the cost of airfare was too prohibitive for students and the medical program did not feel like they could maintain the partnership from their end. High cost of international rotations and lack of funding provided for students is an influential barrier that prevents medical schools from requiring international rotations during the four-year program and contributes to the challenge of medical programs recognizing international rotations as key academic components within the curricula.

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Tied closely to the barrier of funding is the barrier that students also face to participate in international rotations because of timing within the medical school's prescribed curricula. International rotations were often taken toward the end of a medical student's tenure at the school, so funds or resources might have been exhausted by the costs associated with applying and interviewing for residency, leaving few resources left to fund international rotations. Similarly, it may be difficult for a medical student to participate in longer-term rotations because of the constraints that scheduling creates when test-taking and required elective offerings are taken into account. There may also be little to no time available upon completion of the international rotation for debriefing, leaving the student without a process or mentor to process the experience with and connect it back to educational objectives. Timing during the academic year, as well as funding, were the greatest barriers to student participation.

Ethical barriers to implementing international rotations. Ethical issues and instances of harms experienced by host communities are well-documented in the literature, and it is widely encouraged that medical schools consider ethical issues and types of appropriate behavior for international settings (Ackerman, 2010; Crumb & Sugarman, 2008; Evert et al., 2015; Hartman, 2016). Due to the rise in literature surrounding potential harms to host communities and ethical challenges of international service-learning, the survey and interviews also included opportunity for participants to provide more detail regarding ethical barriers.

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Although there is no universal agreement of what comprises ethical behavior, ethical frameworks can help determine what is appropriate or inappropriate (Craft, 2016). Scholars have argued that medical students should be held to the ethical standards of their home countries (Asgary & Junck, 2013), while others argue that new ethical models are needed due to the difference between the home and host sites (Pinto & Upshur, 2009). Ethical barriers were present in many cases but were not often described as being influential to the planning and implementation on international rotations due to the steps that medical schools and international rotation coordinators took to mitigate ethical barriers. For example, interviewees referenced ethical barriers such as limitations in a student's scope of practice or level of cultural competence, the struggle to achieve bilateral and reciprocal engagement with international host sites, and potential dangers or harms to students. If these factors are viewed as structural or programmatic barriers, medical programs could establish processes to mitigate these barriers and make them less influential (e.g., establish cultural competency training for students).

In fact, when questioned about ethical barriers, interviewees described processes that were in place to address ethical barriers rather than described the barriers themselves. These processes or structures included ethics training for faculty and students, department oversight, and not offering short-term global health experiences unless they were in the context of a longitudinal partnership. These data demonstrate how medical programs may have mitigated ethical barriers to make them less influential, as the survey data implied.

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Overall, barriers to implementing international rotations fell into similar categories across medical schools in this study. Barriers related to the structure and planning process of international rotations included lack of faculty involvement and support staff, challenges in setting expectations for students, lack of support from leadership, and inadequate funding. Students faced barriers to participating in international rotations related to funding and the timing during the academic year during which the rotation would take place. There were also barriers reflected in partnerships, the experiences of the international rotation coordinators and their work to plan and implement international rotations, and ethical barriers. There were no extremes or outliers in the survey or interview data, which indicated that barriers were relatively similar across the data set.

Facilitators of international rotations. Factors that facilitated international rotations were similar across medical schools, reflecting the relationship to barriers, and were similar to elements identified earlier as key characteristics that were critical for strong partnerships and to aspects represented in the literature as being contributors to institutionalization of service-learning efforts. For example, structural or programmatic facilitators included having dedicated administrative offices or staff to help plan and implement international rotations, establishing a connection to curricula in the medical school, and creating formal or standardized processes. These aspects align with studies that have found structures and programmatic features such as dedicated offices or staff as

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critical components to the sustainability of service-learning practices at an institution (Furco, 2007; Littlepage & Gazley, 2013).

Facilitators were also related to high student interest, convenient opportunities to develop community partnerships, and international rotation coordinators' personal experiences and motivation, such as passion or personal mission to inspire students or promote health equity. Facilitating features that assisted international rotation coordinators also included membership in professional associations related to planning or implementing international rotations, which were key opportunities to share resources and learn from other medical programs. All facilitating factors in this study affected all medical schools represented, which was demonstrated in the lack of extremes or outliers in the data which indicated similar themes across medical schools in the study.

Structural and programmatic facilitators. Many facilitators related to structural or programmatic components of international rotations, such as having dedicated offices or staff or connecting international rotations to academic curricula within the medical program, which is consistent with current literature (Furco, 2007; Littlepage & Gazley, 2013). A key facilitator was dedicating an office or staff member to support international rotations, and for such an office to be visible and easy to access for all medical students. These factors help establish and maintain institutional roles for promoting international rotations in contrast to relatively unstructured opportunities for rotations that might exist if only one particular faculty or staff member has a connection to an international site.

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Institutional roles and infrastructure are also established in the literature as elements that can promote sustainability or institutionalization of partnerships (Seifer, Shore, & Holmes, 2003). Additional resources, such as staff, funding for students, faculty, and administrative entities, and protected time for faculty to participate were also listed as facilitators.

Visionary elements from medical school leadership or supportive Deans who performed higher-level advocacy within the medical school could also serve as facilitating factors for international rotations. One interviewee emphasized the importance of medical school leaders to have a broader understanding of global issues outside of “inappropriately excessive nationalism” that would allow prioritization of the health of global communities alongside the health of communities more local to the medical program. Support from leadership was also listed in survey data as a ‘slightly’ to ‘very’ influential facilitating factor at medical schools in this study, which is consistent with existing literature that demonstrates the importance of support from leadership in creating and sustaining community partnerships (Ahmed et al., 2004; Calleson et al., 2002; Holland, 2009).

Connecting international rotations to the curricula within the medical school could also act as a facilitator. Linking international rotations with a scholarly track, concentration, or certificate in global health could be consistent with existing literature regarding supportive elements for international rotations (Drain et al., 2007). Participants

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in this study also suggested that connecting international rotations with curricula could promote greater support from faculty. One interviewee explained that curricula is often owned by faculty, so embedding a focus on global health or global research topics could strengthen the motivation for both faculty and students to participate in international rotations. Faculty especially have emerged in the literature as a significant predictor of institutionalization (Benigni Cipolle, 2010; Furco, 2007); however, there is little to no research on staff in medical education who also may contribute to institutionalization.

Many of the facilitators that emerged in the data correspond to literature regarding institutionalization of service-learning efforts in higher education, which can help sustain partnerships over time, indicating that the presence of strong partnerships can help facilitate international rotations. Partnerships require infrastructure to develop and sustain relationships (Seifer, Shore, & Holmes, 2003). Scholars have connected structures and systems to institutionalization such as funding, providing faculty rewards and incentives, and dedicating staff members or an office to educational efforts (Bringle & Hatcher, 2000; Butin, 2006; Furco, 2007; Holland, 2009; Littlepage & Gazley, 2013; Seifer, 1998). Having elements of strong community partnerships also acted as influential facilitators for international rotations. A strong partnership could mean that it was formalized with a memorandum of understanding, a long-term relationship with a site or third-party organization, or an established site that regularly accepts students and has all required university documentation in place.

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Additional facilitating elements described by interviewees were the presence of established processes for organizing and implementing international rotations, such as checklists for the medical program to use when establishing partnerships or processes of approval for individualized rotations. Offices or staff focused on logistics or travel preparation, the presence of established rotation procedures, and established sites and partnerships either directly with a host site or with a third-party organization were all influential facilitators. All interviewees referenced funding and student scholarships as facilitating elements as well.

The opportunity for reciprocal exchanges at the U.S. medical program was also referenced as a facilitator and emphasizes the utility of standardizing process or adapting existing structures to more easily facilitate international rotations. For example, 60% of medical schools represented in this study that offered international rotations also hosted international students from other countries at their medical program. If the home medical program could host international students or faculty for clinical shadowing or reciprocal rotations, there were often existing structures and processes that could be adapted to help facilitate international rotations for U.S. medical students.

When examined together, these factors demonstrate a pattern that indicates that structured elements in the planning or implementation process can strengthen partnerships, which often raised the profile of international rotations at medical schools in this study and thus garnered more support across leadership, faculty, and staff. Narratives

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provided by international rotation coordinators as they described international rotations at their medical programs further demonstrated this pattern. As international rotations gained popularity across medical schools and the number of students participating grew, international rotation coordinators described ripple effects that occurred on campus to further propel international rotations.

One interviewee described how international rotations were “becoming a focus within the institution's eye” and drawing attention and participation from other campus entities. Greater acceptance and recognition of the value of international rotations increased as faculty noted that students who participated in international rotations displayed better clinical and cultural communication skills. One interviewee stated that a greater number of faculty see the value in supporting and participating in international activities. He said, “The faculty are the last ones to the party, but that is changing,” and described how faculty noted the interest from incoming students to engage in international opportunities. High student interest observed by faculty was a widely referenced facilitator across the interviews and the survey data. The role of faculty in promoting or hindering new educational initiatives is also emphasized in existing literature (Eyler et al., 2001; Foreman, 1994; Furco, 2007; Jacoby, 2015; Stewart & Wubben, 2015; Zlotkowski & Williams, 2003).

Personal experience and motivations of international rotation coordinators.

Themes were also evident in aspects that motivated international rotations coordinators to

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engage in the work of planning and implementing international rotations which acted as additional facilitators, such as having a passion for health equity, a sense of personal mission or life philosophy, and the drive to inspire students. Many interviewees described personal international experiences and stated that they wanted students to be able to experience the same kind of transformational learning. These themes were expressed by both faculty and staff at the medical programs who were international rotation coordinators. It is worth noting that much of the existing literature regarding service-learning initiatives and other educational innovations explores faculty perspectives and motivation, but there is a lack of research on the same for staff members (Chism, Palmer, & Price, 2013).

Despite challenges such as lower pay, having few support staff, and balancing student expectations, international rotation coordinators referenced their own personal experience with travel or cross-cultural exchange as a motivating factor. Interviewees described living in other countries, having “life changing” or “eye-opening” experiences while learning about different cultural values, and wanting to inspire students. One international rotation coordinator said:

I think one of the things about our program is that we try to broaden the idea of global health from going and providing clinical service somewhere, which is certainly one aspect, but not always a sustainable aspect if it's not paired with capacity building or training or a longer term relationship with those faculty

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members within that clinic or hospital provider system. And so helping students to recognize the benefits of those longer term relationships and the need for capacity building and training in sort of everything that they do in a low-resource setting [is important] to be able to leave the sites where they have learned working at a higher level.

Feeling a personal responsibility to instill values and principles in students to promote global health was a widely referenced theme across interviews.

Other international rotation coordinators further described how they felt a calling to pursue health equity, reduce health disparities, and serve vulnerable populations, which demonstrated alignment with many medical school missions. In addition to promoting global perspectives of health, another international rotation coordinator described how impactful these rotations can be for medical students and their future practice choices. He said:

I'm about making medical students have good experiences in that area because I think it can be transformative for their medical careers. And a badly done international rotation is bad for the student and bad for the site. So I feel this really big responsibility to -- at least at my school, these experiences are going to happen. So I engaged because I want to safeguard both the patients and the medical students when they're doing this kind of work.

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Passion was also a widely shared theme in addition to feeling a responsibility to foster student learning. Interviewees described having a life philosophy of service and seeking out new experiences through travel and cross-cultural interactions. One international rotation summarized her motivation to engage in the work of planning international rotations:

It's my passion. I think there's so much to be gained. It is such a wonderful experience for growth and enlightenment, education, and self-awareness to get out of your comfort zone...it's exhilarating and you bring so much back. So much wonderment, so much new information.

A final factor that several, although not all, international rotation coordinators described as a facilitating element in their work of planning and implementing international rotations was membership in a professional association related to global health. Annual national or international conferences provided opportunities for the coordinators to network and learn from each other's challenges and success stories, and membership on professional email listservs enabled resource sharing. These networks emerged as being critical to collaboration and forming new partnerships. In some cases, new international sites or opportunities for reciprocal exchanges were introduced to international rotation coordinators at annual conferences through professional connections. Professional associations represent an avenue through which new practices, rules, and technologies can spread beyond boundaries within a collaborative group,

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which Zietsma and Lawrence (2010) and Lawrence and Hardy (2002) discussed in relation to boundary work that can lead to change in organizations. Professional associations also enabled greater access to academic resources and evidence for the legitimacy and relevance of international rotations in medical education. International rotation coordinators also stated that third-party organizations participate in these gatherings as well and sometimes disseminated guidelines or tips that can assist international rotation coordinators in their work.

Across the barriers and facilitators explored in this study, there were no extreme cases or outliers that suggested a particular barrier or facilitator was significantly more influential than another. In fact, the majority of the barriers and facilitating factors were similar across medical schools represented in this data. Logically, relationships often emerged between barriers and facilitators; in cases where lack of available funding was an influential barrier, the presence of funding could act as a facilitator. Many of the barriers relate to the structure of the experience and the structure of the partnership, as well as barriers to student participation. The facilitators largely correspond to current structures in place and high student interest.

Medical School Participation in International Rotations

Another element of my second research question sought to investigate factors that drove or deterred a medical school's participation in international rotations. The various benefits or disadvantages associated with international rotations as well as additional

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contextual factors within and surrounding medical schools held great influence in a medical school's decision to engage in international rotations. Factors that drove medical schools to participate in international rotations included student demand, addressing changing workforce demands, and broader environmental drivers, while factors that deterred a medical school's participation were related to a lack of structures or processes in place or the length of time a medical school had been open. However, student interest was high across medical programs and some schools allowed medical students to pursue international rotations individually without formal facilitation by the medical school. Pressures from students, changing demographics in society, and the evolving workforce demands also could lead to growth or expansion of international rotations at a medical program. By examining factors that drive and deter a medical school's participation in international rotations, links are evident between certain contextual factors and the international rotations.

In addition to the presence of barriers and facilitators within the medical program or institution, there were also larger forces at play in the medical school and surrounding contextual environment that influenced a medical school's participation in international rotations. Many factors were expressed by multiple international rotation coordinators in this study, which could be because pressures of internationalization, globalization, and market factors have largely shaped the role of international education within medical schools (Hartman, n.d.; Plater, 2011). Themes are presented below that appeared to affect

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a majority of medical schools, with individual examples provided by interviewees to provide contrasting anecdotes or strengthen the themes that emerged during analysis. Interview and survey data included responses from medical schools that do offer international rotations as well as medical schools that do not offer international rotations.

Factors that drive participation. Interview data provided rich examples of driving factors that motivated medical schools to include international rotations in their educational offerings. Themes were similar across the interview set and fell broadly into motivation to meet student demand, the need to address changing workforce demands, and broader environmental drivers. Other driving factors that emerged in this study corresponded with Furco's (2007) description of elements that promote institutionalization of service-learning, such as dedicated offices and staff, standardized processes, connection to faculty incentives and rewards, supportive leadership, and connection to mission. Many of these elements exist within the exosystem in the conceptual map that frames this study, indicating that organizational factors can both drive and support international rotations at a medical program.

There is an increasing desire expressed by students to participate in international experiences, which largely drives medical programs to include international rotation offerings. This rising demand has been well-documented in the literature (Crump & Sugarman, 2010; Hartman, 2017; Jones & Steinberg, 2011; Lasker, 2016b; Parsi & List, 2008) and was also prominent in this study. Student interest was a strong driving force,

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even according to an interviewee whose medical school did not formally offer international rotations but allowed students to take them on their own initiative. Medical programs have begun to admit a more diverse student body and recognize the value of seeking out different perspectives to inform learning. In many medical programs in this study, international rotation coordinators explained that students may have an existing connection with a country or organization with which they want to study. These could be connections with home countries, if the student was not originally from the United States, or connections with entities through which students may have performed previous volunteer work. These new connections provide relatively streamlined opportunities for medical programs to foster and expand a personal relationship into a formalized partner site.

One interviewee from a medical school that does offer international rotations provided an illustrative example demonstrating the influence of student demand. She noted that prospective students expressed interest before applying to the medical program. She said, “They want it. We've actually had students call us saying, ‘I'm considering applying to the [medical school]. Tell me about global health,’ because the office of global health is visible and they're asking about it because that's what they want.” In this case, advertising the opportunity for international experiences can become a powerful recruiting tool for the medical school. She added:

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I think from the standpoint of it being an expectation of medical schools, [we need] to begin to do this in a more structured way, because if we don't do it then we're going to lose out on students who are interested in this. And they, I think are a distinctive group of students that we don't want to miss out on it.

This international rotation coordinator, who was a staff member, also noted that faculty at her program had commented on the conversations that they had with prospective students during interviews or informational sessions during which students inquired into international experiences before applying to the medical program or deciding to accept an offer to attend.

Eby (1998) critiqued higher education's tendency to use community engagement and service-learning experiences as a public relations tool, but this interviewee described how the pressure that student interest created affected the medical program at a deeper level and emphasized how critical it was for her medical school to offer appropriate, meaningful international rotation experiences. She said, "Our students will still pursue other types of activities, but they'll be doing it independently without any oversight or guidance, and that presents a health and safety risk to them." In this example, the international rotation coordinator felt that it was imperative for the medical school to provide formal opportunities to safeguard the students from seeking out other international offerings where there may be no oversight or regulations, which

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demonstrates consideration far beyond simply using international experiences as a recruitment tool.

Interviewees also cited the need to meet changing workforce needs and the ability of international rotations to offer robust experiences that could relate directly to the demands and realities of future practice, which is also supported by literature that explored the power of industry to influence aspects of higher education (Hogg & Hogg, 1995). Participants in this study claimed that students need greater skill and practice in working with immigrant or refugee communities and practice communicating across cultures, which are observations supported by existing literature (Stewart & Wubbena, 2015). Interviewees also explained that international rotations often offered opportunities to broaden interdisciplinary skills and practice working with integrated healthcare teams. All of these skills have been documented in the literature and have been connected to service-learning as a pedagogical approach that promotes these outcomes (Connors et al., 1996; Dharamsi et al., 2010; Eyler et al., 2001; Lasker, 2016a).

Environmental factors such as influential stakeholders, like leaders or faculty, or the medical school location or culture also acted as driving factors. Higher-level leadership often appeared to “see the value” from a clinical or experiential perspective that offering international rotations could provide for students, as described by interview participants. One interviewee said, “There is a world beyond our own borders and we need to participate in that world.” International rotation coordinators reported that their

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medical program leaders began to recognize the importance of providing students with a global perspective, and of meeting faculty or staff needs as a matter of retention. At one medical program, the interviewee described that faculty often joined the medical program with existing relationships that they wanted to develop into international partnerships, and that this type of work could ultimately help prevent faculty from burning out. Pursuing a passion or feeling like personal experience was valued by medical school leadership was a theme cited often by both faculty and staff interviewees.

The physical location or environment of the medical school was also an aspect that motivated students to pursue international experiences, especially for medical programs that were located in rural areas. This was evidenced in interview data; one international rotation coordinator from a rural Midwest program stated that students wanted to experience something more than the rural setting in which the medical program was established, so they pursued international rotations. In another example, a different international rotation coordinator whose medical program was also in a rural setting, described how the history of medical missions in the surrounding community promoted a culture that encouraged international rotations. The medical program, surrounding higher education institution, and the neighborhood where the college was located had a service-oriented culture, which influenced student participation in international experiences. Both of these examples display how the environment of a medical school can influence

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students and emphasize the power that students have to demand international experiences as part of the medical school's educational offerings.

Another driving factor related to the medical school environment that promoted international rotations was the medical program's mission. About half of the interviewees explained that the inclusion of international rotations was tied directly to the pursuit of fulfilling the medical school's mission. Themes from these interviewees were similar, in which medical programs had a mission to be community-oriented, to serve the most vulnerable or underserved communities, or to promote primary care. In these cases, global health was seen as a key component of these priorities. One interviewee explained that since his medical program had structures and risk management procedures in place as the basic foundation of international rotations, the medical program was now trying to focus on the connection between international experiences and future career choice because the medical program had a mission to create family practitioners or providers who would work in under-resourced areas. Connection to a mission of instilling values of social accountability or promoting careers in service fields has also been well-documented in literature that connects institutional culture which drives activities to a vision or mission (Kezar & Eckel, 2002; Preston et al., 2016).

Benefits of international rotations. The benefits that international rotations introduce were also influential factors that promoted international rotations, such as increased knowledge, skills, or attitudes for students, as well as potential benefits for the

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host community or the medical program. Greater benefits for student learning were associated with more structured experiences in which international rotations were tied to academic goals, which is consistent with literature on experiential learning that emphasizes the importance of connecting structured learning with educational objectives (Seifer, 1998). Students also appeared to experience far more benefits through international rotations than the host communities did and were often placed at the center of models of transformation instead of the community, which is in line with existing literature (Crabtree, 2008). One interviewee stated, “I think the benefits are mostly for the students. I’m very open about that with the school and the administration.” Across interviews, there was a sense that the benefits of international rotations were self-explanatory, with several interviewees describing benefits with that exact phrase. One interviewee stated that, “The benefits are far more than any disadvantages.”

Students obtained great learning benefits when they saw a different perspective of health and the resources available for healthcare, which some international rotation coordinators described as a humbling experience for students. Exposure to different languages, cultures, medical systems, healthcare workers, and lifestyles were cited as critical to student learning. Another interviewee described how host community members could teach students invaluable lessons: “They teach our students skills and values that they might not learn in the classroom.” An interviewee from another medical program said, “That kind of humility, you don’t find anything here, you are not going to learn that

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from a textbook.” These quotations from across medical schools in this study all emphasize the benefit of learning outside of the classroom, which corresponds to literature that cites experiential learning as a strategy that provides greater benefit to students than traditional classroom learning (Crabtree, 2008).

In addition, international rotations could increase a student’s clinical skills. Faculty, staff, and even employers had referenced improved clinical skills as an observed change after students participated in international rotations. For example, one international rotation coordinator who was a staff member explained that faculty at her medical program noted a difference in performance in the simulation lab between students who completed international rotations and students who did not. Interviewees also stated that students were better at physical exams, communication, critical thinking, decision making, and building rapport with patients. These observed improvements are consistent with studies which have found improved academic or clinical skills in students who had performed international rotations (Celio et al., 2011; Chavez-yenter et al., 2015; Dharamsi et al., 2010; Eyler & Giles, 1999; Fitch et al., 2013)

One factor that could explain an improvement in a student’s clinical skill level was the expanded and comparative perspective of health systems and the experience gained in lower-resource settings where there may be less diagnostic technology available or fewer resources for patients to access. One interviewee provided an example of this:

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I think they also come back with an awareness of how challenging the lack of transparency is around our insurance and the costs of tests and medication. And, the role of a physician in helping a patient identify not only the best tests and medication, but the one that's most affordable or feasible within that patient's scope as well.

Since most international rotations occur in low-income countries, as demonstrated by this study, settings that have lower resources could promote improved skill-building for students.

In addition to clinical skills, students also improved in leadership skills, ethical skills, professionalism, resilience, and confidence during international rotations, as well as cultural humility or awareness. Examples that interviewees provided were corroborated by existing literature that has found similar outcomes (Chavez-yenter et al., 2015; Dharamsi et al., 2010; Leeper et al., 2013; Smith et al., 2013). Students could also practice working with interpreters at international sites, which was an example of a transferrable skill that could give students a competitive edge. "It gives them a leg up on their ability to be competitive for residency," one interviewee claimed, regarding skills learned through international rotations.

In addition to improving various skills, international rotations also allowed students to learn more in general about public health issues, social determinants of health, and the global burden of disease, as well as learning about aspects of other healthcare

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systems that may be better than the U.S. system, according to interview data. The themes across the data related to student learning outcomes in community-based settings correspond with findings of additional studies related to student outcomes from international and experiential learning in which students interact with others in manners that are not easy to replicate in classroom settings (Crabtree, 2008; Smith et al., 2013).

Interviewees also described that participation in international rotations can benefit and enrich peer learning back at the home institution as well, especially when students can bring real world experiences back into classroom discussion. One interviewee explained, “The travel part is sort of the -- I think of it as the lab experience for the things that we're trying to teach in the rest of the curriculum about social justice and access and equity of issues.” Connecting classroom learning to global examples that students could experience or see firsthand while on an international rotation was cited as a great benefit to student learning.

The findings of this study related to benefits that students experience in increased knowledge or skills correspond to other results of studies performed on international service-learning. The literature regarding use of service-learning as a strategy in medical education is less developed than literature regarding service-learning in higher education in general; however, the examples provided by interviewees support previous studies related to student outcomes due to service-learning and are consistent with the literature on service-learning in higher education. As evidenced by this data, medical students can

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experience a number of benefits and learning outcomes through international rotations, which can be used as an avenue for international service-learning. These outcomes, documented in the literature as well as this study, include changes in attitude, refined clinical and critical thinking skills, and improved intercultural communication (Celio et al., 2000; Eyler & Giles, 1999; Fitch, Steinke, & Hudson, 2013; Leeper et al., 2013; Smith et al., 2013).

In contrast to the numerous benefits international rotations offered to students, there were few benefits for host communities evidenced in this study. This could be due to the fact that experiential learning theories often emphasize student learning and transformation rather than social transformation within the community, according to Crabtree (2008). International rotation coordinators acknowledged that there was some benefit to the host communities when students performed international rotations, but that those could be lessened if the rotations were of shorter duration. Longer-term rotations or longitudinal partnerships between medical programs and the host site might increase the benefit to the host community. One international rotation coordinator, whose medical school had a long-standing relationship with a particular international site and led student rotations to it several times a year, described how the medical students' presence benefitted the community by instilling a sense of connection. She said:

What I've been told by the people on the ground is there's a feeling of 'Wow, there are people that are aware of our needs on the outside,' and then it gives a

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sense of connection. And not only a sense of connection, but also that there is a care, you know, just beyond their own community...when internationals come in, the community sort of rallies around what the internationals doing there and so it even helps the NGOs get the attention from their communities.

Two other interviewees from separate medical schools also mentioned how international rotations engage the wider school community as well. One described how international rotations engage the entire medical school community and even community members from the city in which the medical program resides. Another provided a more specific example, describing that supply drives had been conducted by the local library, and other members of the medical school community in addition to students had traveled to the host site with the medical students to help carry boxes, refill water bottles, or make sandwiches to support the students' work.

Recognition that students often experience greater benefit than other stakeholders involved in community-based education has also been documented in the literature regarding both domestic and international service-learning. There is often an assumption that the results of service-learning strategies are universally beneficial, but there is little empirical evidence to demonstrate if service-learning strategies can provide long-term solutions for host communities (Butin, 2003). Many scholars have critiqued the lack of community perspective in studies related to service-learning and international service-

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learning (Bloomgarden, 2017; Eby, 1998; Reeb & Folger, 2013; Sandy & Holland, 2006; Stewart & Wubbena, 2015).

Benefits listed in the data acted as driving factors in a medical school's environment that supported the inclusion of international rotations. The majority of benefits that interviewees listed were benefits that students experienced, with only a few mentions of benefit to the host community or the medical school. These benefits, however, are compelling to medical schools that aim to serve societal needs, prepare medical students for careers in a changing workforce, and promote educational strategies that encourage social accountability (Burrows et al., 1999; Hunt et al., 2011; Seifer, 1998; Seifer & Sisco, 2006).

Factors that deter a medical school from participating in international rotations. Elements that discouraged a medical school from engaging in international rotations corresponded to a lack of structures or processes in place at the medical school or the length of time a medical school had been open. Student demand, however, could overcome these factors and, in some cases, medical schools that did not formally facilitate international rotations would allow students to pursue those experiences independently. The majority of this data originated from survey respondents who indicated that their medical programs did not engage in international rotations, and from one interviewee from a medical program that did not formally offer international rotations.

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Only 12% of medical schools in this study did not offer international rotations. Medical schools did not offer international rotations if they had been open for a shorter period (e.g., “new medical school”) because coordinators had to convince school leadership that international rotations were worth the investment, or they did not yet have structures in place to provide malpractice insurance for students taking international rotations. Medical schools that did not formally offer international rotations also tended to view international rotations as student-driven activities, not driven or facilitated formally by the medical program or related to core academic programming. Students could take an international rotation if they identified a site and planned the rotation individually, but the medical program did not conduct the experiences.

An example of how these factors interacted at one medical program was provided by a coordinator from a relatively new medical school that did not formally offer international rotations. She stated that there were other priorities for the medical school in its early stages, and that there were not yet any standardized options for international rotations that were tied to broader learning objectives in the overall curricula. However, she also said that students could design their own international rotation as an optional rotation in the last year of medical school, so international rotations were allowed although not part of the school’s electives catalog or formally facilitated by the program. Faculty from the medical program were not involved in these rotations, and the rotations were often conducted by other outside organizations. The interviewee stated that high

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student interest was the reason that international rotations were allowed, although not formally facilitated by the medical school.

Although this is one example, it is supported by survey data from respondents who also stated that students could pursue international activities even though a medical school might not formally organize international rotations. These data reveal that medical schools may allow students to complete international rotations even if they are not offered formally through the medical program. This suggests that there may be other ways that medical schools engage internationally besides formal international rotations and broadens the scope of research possible on a medical program's international activity. This example also again highlights the influence that student interest holds in a medical school's decision to participate in or allow international rotations. The data regarding deterring factors correspond to the previous data regarding driving factors; support from leadership, standardized options tied to curriculum, and student interest are drivers, while the lack of these factors can deter a medical school's participation in international rotations.

Other factors across the interview set that could contribute to a medical school deciding not to include international rotations are the disadvantages associated with such experiences. Disadvantages of international rotations were described by many international rotation coordinators across the interview set.

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Disadvantages of international rotations. Disadvantages that international rotations present to students or host communities also act as factors that may discourage medical schools from including these types of offerings for students. While many of the benefits described earlier focused on the student, disadvantages expressed tended to be those that the host community experiences, although there were also several disadvantages for students listed as well, which were framed as disadvantageous elements that prevented students from participating in international rotations, such as funding, timing, and safety. International rotation coordinators described many of these disadvantages in terms of the structures that were or should be put in place to address the issues.

A perception shared across medical schools was that students did not experience many disadvantages through international rotations. Many international rotation coordinators struggled to name the downsides that international rotations presented. One interviewee said, “I see very few disadvantages when it’s done well...I’m at a loss for thinking of disadvantages when it’s done well.” Another interviewee said, “The benefits are far more than any disadvantages.” A third interviewee contrasted shorter term non-medical trips with international rotations and stated, “Is it so much a disadvantage in regards to the rotations?...I feel that way about that around service trips.”

The disadvantages for students that emerged in this study were framed as elements that prevented students from participating, such as funding or timing issues. As

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evidenced through other data in this study, challenges of timing and funding are influential and may prevent students from being able to take advantage of international opportunities. Due to these disadvantages posed, international rotations could not be required, so a disadvantage that international rotations introduced was simply the fact that it was an exclusive opportunity from which not all students could benefit.

Stewart and Wubben (2015) claimed that “The need for funding can be reduced by students who find their own service-learning placements and take responsibility for planning, decision making, problem solving, and assessing their learning” (p. 120). As evidenced earlier in this analysis, if students self-fund their international rotation, they tend to have control over their choice of site and the independence to design their own activities and experiences. This could create challenges or present risks to students and host sites if a medical program does not have oversight of the student during the rotation. In addition, the potential for learning could be at risk if the student designs and assesses their learning independent of the broader medical school curricula.

Another set of disadvantages to students were the potential health and safety risks while a student is in a host country, although there are arguably health and safety risks to be faced in any type of domestic rotation as well. One disadvantage unique to international rotations because of the setting – often in a low-income and lower-resource country – is the risk of a student acting outside his or her scope of practice. One interviewee described, “There’s always that danger of getting in a situation where [the

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student thinks], ‘I can do with this population what I couldn’t do at home.’” Another interviewee said, “I think we rely very heavily upon our partners to provide the education that it is relatively standardized here, but is not necessarily similarly standardized elsewhere.” Even if medical students have adequate supervision at a community site, the supervisor may follow different procedures that make it difficult for students to appropriately respond to situations where they may be called upon or have an opportunity to work outside their scope of practice. This further emphasizes the importance of adequate preparation prior to the international rotation and supervision and safety measures, which surfaced as key priorities when designing and implementing international rotations.

Other disadvantages listed by interviewees also related more to the structure of the international rotation, the logistics, or the planning involved. Several interviewees claimed that activities needed to be more structured and more closely tied to the academics at the medical program. One interviewee described subsequent challenges that come along with tying international rotations more closely with curriculum: if the experience becomes curricular, then it falls into Title IX rules that higher education institutions are federally required to follow related to inclusive participation in educational activities. There may be greater challenges in meeting those rules, such as ensuring a host site has adequate accommodations for a medical student with a disability, for example. Another danger could be present if a medical program included international

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rotations for the sake of attracting students without building an academic structure around the experience, which several interviewees referenced. Students need to be prepared to understand what they might see on site and the social context of the community they will be working within, which requires structure and connection to curricular objectives as part of a pre-departure process.

Although interviewees framed these situations as disadvantages for students, they also clearly represent disadvantages of international rotations to the host community as well. The dangers of students working outside their scope of practice have been explored by scholars concerned with the ethics of international service-learning (DeCamp, 2007; Hartman, 2017; Lasker, 2016a; Sullivan, 2016). The pervading attitude that medical care is always beneficial and that medical students can supplement shortages in the healthcare workforces of under-resourced countries, along with the rising demand for global health experiences, present challenges if medical schools do not consider potential risks to host communities as well as students (Evert et al., 2015).

Finally, other disadvantages referenced across the data set related to downsides to the international community at large. These could be broad negative impacts, such as building a “save the world” mentality, as one interviewee listed, or contributing to the broader phenomena of medical tourism or to a sense of cultural arrogance or superiority in the student. Another interviewee referenced the inherent power differential created by sending U.S. students on international rotations. She described:

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There is a definite power disadvantage between us as well, sending physicians, and any host sites that we work with. Coming from a resource rich institution, you know, relatively rich institution to a resource poor setting.

Students could also be at risk of creating other issues at the site or burdening the site with the challenges of hosting learners. This interviewee also described a concept of “learned helplessness” that host communities might be at risk of developing if they are dependent on the U.S. visitors to provide healthcare. If capacity is not built within a host community, they might be prevented from seeking their own solutions by hosting international visitors.

Many of the disadvantages connect to structural or programmatic components that international rotation coordinators identified as necessary for international rotations, as described in this analysis. For example, lack of funding or structure connecting international rotations to educational components can be addressed by implementing scholarships for students or academic concentrations related to global health. This implies that certain structures or programmatic components that correspond to disadvantages may lessen or eliminate the disadvantages if in place within a medical school.

Despite the existence of deterring factors or disadvantages to offering international rotations, many interviewees expected growth of these offerings at their medical programs in the future which related, in many instances, to the driving forces that facilitate a medical school’s participation in international rotations.

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Growth of international rotations. Many international rotation coordinators anticipated growth or expansion of international rotations, which also drove medical schools to establish supporting structures and processes. Growth was expected primarily due to the rising interest from current and incoming students, as well as future faculty that could bring more relationships to the medical school. In some cases, ‘growth’ meant an expansion of host sites while in other cases, ‘growth’ represented a deepened connection with existing host sites or strengthened components of academic curricula. Growth of international offerings was often framed by international rotation coordinators as inevitable because of globalization and increased opportunities for connections around the world as well as pressures from the changing workforce.

Literature related to change is particularly useful to apply to medical education when considering the concept of growth of international rotations. Van de Ven and Poole (2005) proposed that change could be observed in a narrative of how developments occurred at an organization, and stories related to growth of international rotations illuminated levers or supports for change in medical education. Many of the changes or areas of growth in this study can be examined through lenses of routines (Tsoukas & Chia, 2002; Weick, 2000), emergent change (Van de Ven & Hargrave, 2004), and adaptation (Kezar, 2015; Lueddeke, 1999).

Although many factors that could lead to growth of international rotations were specific to medical school context, broader pressures of a changing world and changing

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workforce promoted growth of international experiences at medical programs. One interviewee linked the expansion of international offerings to globalization:

The shrinking of the world or the flattening of the globe or whatever phrase you want to call it...reaching out across cultures is increasingly becoming the norm. There is a broader awareness of the multicultural nature of the U.S. and engagement in globalization stuff broadly.

Another interviewee also described the increasing complexity of the world as leading to growth in international rotations: “The world is getting more complex and we need to get ourselves out there to learn more about different aspects in these countries, and fill some of the shortage gaps.” These examples connect the medical school’s context to the macrosystem of the conceptual model of this study and additionally indicate the influence of an even broader system level that the conceptual framework used in this study does not include. Reeb et al. (2017) proposed a psycho-ecological systems model (PESM) that included a supramacrosystem to account for broader global systems that influence all lower-level systems. These data demonstrated that medical schools face pressures from contexts outside their control, such as globalization and market factors, which can be identified in a supramacrosystem. These pressures are consistent with literature that described the power of industry to create pressure within higher education (Hogg & Hogg, 1995) as well as the ability of a higher education institution to respond to emerging circumstances through adaptation (Hearn, 1996).

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Growth of international rotation programming at medical programs was also expected in direct correlation to the increase in student interest in global health experiences. For example, one interviewee explained that having a global health office or offering international experiences was not required by any licensure or accreditation bodies, and yet it was considered prudent for medical schools to have these offices or structures to meet student demand. Another interviewee, whose medical school participated in reciprocal exchanges with other international medical programs, said that students from outside the U.S. also want experience within the States as well, so reciprocal exchange offerings should be expanded.

In some cases, international rotation coordinators expected growth in the academic components connected to an international rotation. Resulting from the rising demand for international experiences from students is a greater need to have structures and processes established to be able to meet students' needs and maintain international rotation partnerships in an efficient, sustainable manner. One interviewee intended to strengthen the reflection components that students performed post-travel to help them process their experiences, and to connect existing partnerships to longitudinal academic goals across the medical school's curricula. To address many of the pressures and factors described in this study, medical schools were in the process of or had plans to develop global health academic tracks, certificate programs for global health, or medical language

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pathways, which would integrate international rotation experience directly with the requirements of the curricula.

Cases in which growth of international rotations was not expected at a medical program in the future were tied directly to distinct situations related to the medical school's environment or context within the exosystem. For example, one interviewee said that her medical program "may have kind of tapped out," and that she thought they were "hitting everyone who is interested." She wondered if simply increasing the number of host sites would increase the number of students and stated that increasing funding available to students would likely have a greater impact on raising the participation. A different medical school that focused exclusively on reciprocal one-to-one exchanges with international medical programs had also reached capacity, according to that school's international rotation coordinator. She explained that the medical school's student body had grown and that they barely had enough local sites remaining to meet their own students' needs. Competition for sites meant that they were not able to host any more international learners and therefore could not send any more of their own students. This unique instance at one medical program demonstrates that competition for sites might depend on the medical programs' context and goals for reciprocal exchange.

For some medical programs, growth was not anticipated in terms of the volume of students who participate in international rotations, but rather in the quality of partnerships. New faculty entering medical schools sometimes brought their own

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connections and relationships to a medical program, which presented new opportunities for the medical school to develop quality partnerships. One interviewee described, “I would like to grow in depth of the partners...as far as depth and quality of the partnerships and investment in the site and faculty involvement and faculty going back and forth between a site.”

In response to a lack of funding for international rotations, targeted funding from medical schools intended specifically for international experiences may lead to growth in international rotations; however, general funding for medical students across the four-year program might dissuade participation in international rotations. In one unique case, an increase in funding for the medical school on a broad scale was anticipated to affect student participation in international rotations. An interviewee from this medical program explained that students often sought out scholarships that happened to be connected to international rotations, but that increases in funding available might relieve some financial pressures for students and lessen the urgency to find scholarships, such as the kinds that the medical program offered for international rotations. In this case, the interviewee felt that greater funding across the medical school in general might lower participation numbers, whereas in different interviewee examples as well as survey data, greater funding specifically for international programming was anticipated to increase the level of student participation in international rotations.

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Factors that were listed as deterring a medical school's participation in international rotations largely relate to structures not in place or lack of support from leadership. High student interest, however, leads some schools to allow international rotations even though they are not organized or facilitated by the schools, and the initiative is left up to the students. Many of the responses about deterrents to participation came from institutions that indicated they do not offer international rotations, but it is clear that international experiences often still take place or are still allowed for students, even though the school may not formally organize them. This demonstrates that rotation coordinators may have different interpretations of what it means to offer or allow international rotations, and that survey data indicating that 12% of medical programs in the study do not offer international rotations may have more nuance than the survey captured.

Overall, the second research question in this study sought to identify barriers and facilitators to implementing international rotations as well as broader factors that could drive or deter a medical school's participation in international rotations. Across the interview data, international rotation coordinators expressed the opinion that medical schools need to provide international experiences for students to stay competitive in admissions processes, and to help their students consequently be competitive for residency and the future job market after medical school. Increasing student interest was a highly cited driving factor and cause for growth of international rotations at a medical

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school. In some cases, the particular environment or context of the medical school or surrounding higher education institution could also act as a driving or deterring factor for the inclusion of international rotations.

Factors that drive or deter a medical school's participation in international rotations, according to interview data, fall mostly into the macrosystem of the conceptual model guiding this study, although some also originate from the exosystem or an additional supramacrosytem. In the macrosystem, which includes the culture of the surrounding higher education institution or community in which the medical school resides, there were more references to the influence of the surrounding community than the encompassing higher education institution environment. This could suggest that the community within which a medical school is located is more influential than the higher education institution, in terms of external environmental pressures.

By examining factors that drive and deter a medical school's participation in international rotations, links appear between certain contextual factors and the international rotations themselves. The final research question in this study deepened this exploration to investigate potential relationships between components in the medical school and the inclusion of international service-learning in international rotations.

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Relationships Between Medical School Components or Institutional Environment and Inclusion of Service-Learning

The final research question in this study examined potential relationships between aspects of the medical school or institutional environment and the inclusion of international service-learning components in international rotations. While factors that drove or deterred a medical school's participation in international rotations existed in the broader environment represented by the macrosystem of a medical school, factors that appeared to be related to the specific inclusion of service-learning components existed largely within the exosystem and microsystem. This suggests that aspects within a medical program are more likely to influence the inclusion of international service-learning components than factors within the macrosystem, such as aspects of the broader institutional environment. This could be due to the influence of the distinct culture of medical schools in the higher education landscape on the effectiveness of reform efforts and the connection to a medical school's mission to uphold social accountability with surrounding communities, which has also been observed in the literature (Holland, 2000; Preston et al., 2016). Organizational priorities or the goals of an international rotation coordinator can have greater influence to determine the use of educational strategies, such as international service-learning, than the influence of factors such as the culture of the encompassing higher education institution or other external bodies such as those related to licensing or accreditation.

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International rotations are a primary vehicle for international service-learning, and certain features such as a medical school's mission, length of time international rotations had been offered at a medical program, presence of sites in lower-income countries, and whether international rotation coordinators held joint appointments or affiliations with other offices could be related to the inclusion of international service-learning components in international rotations. Throughout the interview process and thus far in the analysis, the term "international rotation" has been used far more often than "international service-learning." This was intentional in the research design of the interview protocol to avoid diluting the data with different interpretations of "service-learning." As evidenced earlier in this analysis, the term "service" could mean a plethora of different things to the international rotation coordinators in this study. In contrast, the term "international rotation" conjured examples of international offerings at a medical program, with or without components that would fit the definition of "service-learning" that is used to guide the study.

To answer this research question, Seifer's (1998) definition of service-learning guided my analysis. Seifer wrote that service-learning is

a structured learning experience that combines community service with explicit learning objectives, preparation, and reflection. Students engaged in service-learning are expected not only to provide direct community service but to learn

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about the context in which the service is provided, the connection between the service and their academic coursework, and their roles as citizens. (p. 274)

For this phenomenon to become international service-learning, the service-learning experience must take place across national country borders. Since international rotations take place across country borders, they represent opportunities for the inclusion of international service-learning components.

As described in Chapter 4, I sorted survey responses from respondents who had indicated that their medical schools included international rotations into two categories that corresponded with Seifer's definition of service-learning. Based on the data provided in a question that asked respondents to check activities that were included in international rotations, I determined if programs did include components of international service-learning or if they did not. A respondent must have checked boxes for "course activities tied to learning objectives," "pre-departure orientation," "reflection done on site" or "reflection done upon return," and "clinical service" or "non-clinical service" to be categorized as offering service-learning, based on Seifer's definition. Programs that did not select clinical or non-clinical service but may have selected engagement in research or observation only were sorted into the category of programs that do not include service-learning since they may not include direct community service and since research activities are often peripheral to service (Stewart & Wubbena, 2015). Based on this categorization, there were 30 medical programs that appeared to include components of

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international service-learning in their international rotations and 26 that did not. Patterns were apparent in the data even though these categories had too small of a sample size to determine any level of statistical significance. These patterns suggested certain factors that may related to the inclusion of international service-learning components in international rotations.

As suggested earlier in the discussion of driving and deterring factors, the broader institutional context did not have a strong influence over whether or not international rotations included components of international service-learning, if a medical program was part of an encompassing higher education institution. Connection to school mission, institutional environment with or without Carnegie Community Engagement Classification status, which is a recognition of collaboration between higher education institutions and their various communities for mutual benefit, and reciprocal exchanges did not emerge as strong factors related to the inclusion of service-learning components in international rotations. In contrast to the data that suggest that institutional context in the macrosystem may promote the inclusion of international rotations, it is not clear that these same factors also promote international service-learning components within those rotations. Inclusion of domestic community-based rotations may not be contextual factor connected with the inclusion of international service-learning components in international rotations, since all respondents across the set indicated their medical schools included domestic community-based rotations.

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For example, institutional mission and environment appeared related in some, but not all, cases in which international service-learning components were included in international rotations; only 23% of medical programs represented in this study indicated that their program included international rotations because of a connection to the school's mission. Most respondents in both categories were unsure if their surrounding higher education institution within which the medical school was located (if applicable) held the Carnegie Community Engagement Classification. If a medical school was not surrounded by a broader higher education institution, it did not have an opportunity to hold this classification. Only 7% of the medical programs that did include components of international service-learning hold the classification, while 4% of the medical programs that did not include service-learning hold the classification.

In addition, existence of reciprocal exchanges at a medical program did not appear to be related to the inclusion of international service-learning components. Of the medical programs that did include international service-learning components in international rotations, 60% of the programs also hosted students from other international universities, while 55% of the programs that did not include international service-learning components also hosted students from other international universities. All of the respondents in both categories also indicated that their medical programs engage in domestic community-based education opportunities, and the size and location of all

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medical programs across both categories was widely distributed, indicating no apparent relationships.

Features that could be related to the inclusion of international service-learning components were the length of time a medical program had offered international rotations and the location of host sites. Of the medical programs that did include components of international service-learning components in international rotations, 75% had offered international rotations for more than 10 years. In contrast, 36% of the medical programs that did not include international service-learning components had offered international rotations for more than 10 years. As described earlier in this analysis, international rotation coordinators explained how their medical programs made changes over time in response to evolving situations. These changes over time might lead to development of more robust international rotation programming to include aspects of service-learning, depending on the types of sites available for student learning.

There was also a strong tendency for medical programs that included components of international service-learning in international rotations to offer those rotations in low-income countries, with 87% of medical schools reporting that most rotations were held in low-income countries. Future studies could explore what is unique about the environment in low-income countries that supports the inclusion of international service-learning components as opposed to middle- or high-income countries.

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Another feature that could be related to the inclusion of international service-learning components in international rotations is whether international rotation coordinators are boundary spanners in the medical school. According to Zietsma and Lawrence (2010), institutional innovators are usually in peripheral positions or positions that spanned across boundaries. In this study, 61% of the respondents at programs that did include components of international service-learning had a joint appointment, job, or affiliation with another department or academic unit, and 53% of the respondents of the programs that did not include components of international service-learning had a joint appointment, job, or affiliation with another department or academic unit. It is difficult to claim any significant difference in these numbers, although it is clear that there were more instances of international rotations coordinators holding joint appointments or affiliations in medical programs that included components of international service-learning in international rotations. These data and existing literature suggest that positions that allow international rotation coordinators to span boundaries in the medical school might be related to the inclusion of international service-learning components in international rotations. This is because boundary work can disrupt practices and introduce new changes through collaboration, creation of accountability structures, and cultivation of new networks to transmit information across a medical school (Lawrence et al., 2002; Sturm, 2006; Zietsma & Lawrence, 2010).

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While data in this study largely explores what supports or hinders international rotations, this research question investigated at a deeper level to examine whether or not certain factors at the medical school or surrounding institution were related to components of international service-learning. Factors that appeared related based on survey and interview data were a connection to the medical school's mission, length of time international rotations had been offered (for more than ten years, in particular), presence of sites in lower-income countries, and whether or not an international rotation coordinator had a joint appointment or affiliation. Factors that did not appear to be related were if the institution held the Carnegie Community Engagement Classification, if the medical school hosted other international students, and if medical programs engaged in domestic community-based learning. In sum, factors that seemed to be related were largely within the exosystem and microsystem, and factors not related appeared within the macrosystem. The location of these factors within the conceptual framework of this study suggests that aspects within the medical school may have an impact on the inclusion of international service-learning components. Organizational priorities or the goals set by international rotation coordinators might have more of an influence to determine the use of educational strategies such international service-learning than factors such as the culture of the higher education institution or surrounding community, or other external bodies such as licensing or accrediting entities.

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Overall, this study offers findings that suggest numerous implications on the current literature and practice within medical education. Chapter 6 describes these implications in relation to current literature, practice, and future studies that explore the use of international service-learning in medical education.

CHAPTER 6

Implications

This study has several implications for the fields that inform the use of international service-learning in medical education, such as higher education, organizational studies, and medical education. The findings also provide new information that is relevant to practitioners and scholars. Although there were limitations to this study, the results illuminate areas for future research and investigation. The study addresses several current gaps in the literature on international service-learning in medical education and highlights areas that scholars and practitioners can continue to investigate and refine. This chapter will discuss the implications of this study on current literature, the field of medical education and other health professions education fields interested in the use of international service-learning, the utility of the ecological systems model to inform studies on transformation in medical education, and overall implications for practitioners and scholars who engage with or student international service-learning in medical education.

Interaction with Current Literature

This study reinforces several concepts that have been discussed in the literature regarding domestic and international service-learning in medical education, and the potential for such educational strategies to contribute to the transformation of medical education. The multitude of examples provided in survey and interview data regarding

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the characteristics of international rotations at U.S. medical schools reflect the heterogeneity of opportunities available in designing and implementing international rotations.

Although this study did not empirically explore student outcomes, participants commented on student outcomes they had observed due to international rotations that were consistent with literature. Consistent with Smith et al. (2013), Chavez-yenter et al. (2015), and Dharamsi et al. (2010), students appear to have improved interprofessional skills, professionalism and ethical awareness, and greater intercultural competence as a result of participating in international rotations. Participants in this study noted that they had observed that students had improved clinical skills and a better ability to understand the social determinants of health that influence a patient's life after completing international rotations, which also corresponds to current literature (Leeper et al., 2013; Seifer, 1998). Interviewees also noted a relationship between a student's participation in international rotations and meeting medical school goals of producing primary care physicians or encouraging future careers in underserved areas. Service-learning experiences have been found to lead to career choices in a service field such as primary care, which has important implications to address a predicted shortage in the number of community physicians in the United States (Borges & Hartung, 2007; Brandenberger, 2013; Jeffrey et al., 2011).

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The evidence in this study is also consistent with existing literature regarding service-learning within higher education. The numerous examples provided by interviewees that place the student lens at the center reflect the tendency of experiential learning theories, such as international service-learning, to prioritize the transformation a student might experience through learning rather than a social transformation in the host community (Crabtree, 2008). Butin (2003) stated that service-learning may reinforce deficit perspectives or harmful stereotypes in students, which was a disadvantage noted during the interview phase of this study.

Pressures that affect a medical school's engagement with international rotations explored in this study are also consistent with previous studies that have related the forces of internationalization, globalization, and market factors to the role of service-learning in international settings (Hartman, n.d.; Plater, 2011). Evidence in this study suggests that medical programs may be undergoing a shift from situations in which international rotations could be offered as disconnected and disjointed experiences in a "low key and permissive way," as one interviewee noted, to the establishment of structures and procedures that have evolved to meet the rising demand for international experiences during medical education. International activities have historically been marginal in medical education but are starting to become part of core educational programming (Harden, 2006) and scholars have emphasized the need for new pedagogical strategies, such as service-learning, to meet new demands in global health education (Hanson,

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2010). Numerous examples from this study demonstrate the ways in which medical schools are creating standard procedures and processes to help streamline the design and implementation of international rotations as well as strengthen the connection of such rotations to curricular goals through academic concentrations and certificate programs.

This study also interacts with literature that describes the unique context and environment of medical education. Examples were provided by study participants that support studies demonstrating that faculty face pressure to prioritize research or clinical care over education (Grochowski, 2003), and that pressure in response to calls for reform in medical education to return to community-oriented care in underserved areas have increased the emphasis on global health education (Beck, 2004; Drain et al., 2007). Ginsburg and Tregunno (2005) cited the power of formal regulations or pressures from accrediting bodies or professional organizations in promoting change, which is supported by examples in this study in which international rotation coordinators described making changes in response to the LCME or because of resource sharing from national conferences or professional networks.

The impetus for including international rotations in medical education was attributed in portions of this study to the desire of medical programs to fulfill a mission of serving under-resourced and disadvantaged groups as well as to pursue a personal imperative of the international rotation coordinators to achieve equitable health outcomes. Cox et al. (2006) claimed that medical education was grounded in the culture

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of higher education to the extent that it ignores the “moral orientation” (p. 1,341) which is necessary for the practice of medicine. This study, however, suggests that the culture of the medical school and the personal motivations of those faculty and staff who organize and implement international rotations may in fact feel a strong orientation toward moral principles associated with health equity, serving under-resourced and underserved populations, and improving community health. Factors in this study that appeared to have stronger influence on a medical school’s engagement with international rotations originated largely from areas within the medical program as opposed to within the surrounding higher education environment. This suggests that medical education has a unique culture and responds to factors distinct from many other aspects of higher education, which is supported by existing literature (DasGupta et al., 2006).

This study also demonstrates the relevance of certain theories of change to medical education. The use of international service-learning through international rotations to contribute to the transformation of medical education appears to follow a model of emergent, continuous, and incremental change in this study, often through micro changes made in routines and processes over time. Burnes (2004), Tsoukas and Chia (2002), and Weick (2000) described emergent change models that arose in organizational studies that explained how small alterations, adaptations, and accommodations over time could lead to fundamental change. Other scholars proposed that routines are opportunities for continuous innovation, adaptation, and modification

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(Feldman & Pentland, 2003; Kezar, 2014; Lueddeke, 1999) Organizational flexibility and the capacity to adapt to evolving circumstances over time were described in this study as participants provided examples of change in the medical program over time or areas of anticipated growth. Another study performed by Eckel and Kezar (2003) illuminated transformational change that occurred through incremental changes over time. Examples in this study of the accumulation of small changes over time leading to the establishment of structures and processes to streamline international rotations support these models and suggest that models of change in higher education might be an appropriate fit for the study of transformation in medical education. Few of these theories have been applied in the context of medical education, which points to appropriate lenses to apply to future research investigating change processes in medical education.

Another important connection to the literature regarding change in higher education is the location of the impetus for change. Baldrige and Deal (1983) claimed that the pressures of change in higher education shifted from endogenous to exogenous and that scholarship focuses in greater detail on external pressures of change. This study, however, implies that in medical education, drivers of change may originate within the medical school, including from the faculty and staff who organize and implement international rotations. This suggests that a focus on internal drivers of change might be more illuminating to study in medical education.

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Related to the concept of endogenous pressures for change is the concept from organizational studies literature regarding human agency, which was also demonstrated by international rotation coordinators in this study. Seo and Creed (2002) argued that human agency is an essential driver of change and that human agents within an organization can introduce new processes that lead to new rules and standards of work. Within higher education, most studies related to the concept of human agency focus on faculty or formal leaders, but organizational scholars encourage exploring the power that other participants have, such as middle managers or front-line workers (Morrill et al., 2003; Reay et al., 2006). The international rotation coordinators at the core of this study demonstrated the influence they can hold to change processes related to activities within international rotations or structural and programmatic elements.

There was also an indication that international rotation coordinators at medical programs that include components of international service-learning in international rotations hold joint appointments or positions within the medical school. Sturm (2006) studied transformational change in higher education and cited academic staff as organizational catalysts who could carry information, build bridges, and cultivate networks across boundary spanners to promote change initiatives. This is also consistent with a study performed by Zietsma and Lawrence (2010) in organizational studies in which institutional innovators were found to be in positions that spanned boundaries. This suggests that the role of the international rotation coordinators as front-line workers

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and potentially as boundary spanners might be an element related to the transformational potential of international service-learning in medical education.

This study also provides evidence to support the claim that institutionalization is needed to sustain and maintain community partnerships. Seifer et al. (2003) highlighted the critical aspect of infrastructure in designing and sustaining community-university relationships. Participants in this study identified structures that had contributed to the growth of international rotations at their program or features they felt should be in place or standardized to support partnerships. Many factors examined in this study correspond to features of institutionalization, such as connection to curricular practice, presence of faculty rewards, adequate funding, and dedicated staff or offices for service-learning initiatives (Bringle & Hatcher, 2000; Butin, 2006; Furco, 2007; Holland, 2009; Littlepage & Gazley, 2013; Seifer, 1998).

While scholars such as Furco (2007) and Chism et al., (2013) have explored the relationship between faculty motivation, faculty development, and institutionalization of service-learning efforts, few scholars have explored the staff perspective. Participants in this study were a mix of faculty of staff, and themes from the data emphasized the importance of the motivation of the international rotation coordinator on design elements of international rotations, regardless of whether the coordinator is faculty or staff. There is also little connection in higher education literature to the concept of human agency,

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especially in staff roles as opposed to leadership or faculty roles, and little to no research on staff in medical education in particular.

Contributions to gaps in existing literature. This study addressed several gaps identified in Chapter 2 regarding the literature that informs the role of international service-learning in transforming medical education. Many scholars have called for an examination of the organizational perspective of service-learning initiatives (Butterfoss & Kegler, 2015; Janke, 2013; Meili et al., 2011) as well as how service-learning components impact institutions and instructors, especially in health fields (Gelmon et al., 2000). Tonkin (2011) and Stewart and Wubbena (2014; 2015) called for studies of international or domestic service-learning in health professions to include descriptions of program structures and course types, such as duration, activity, and funding. Tonkin (2011) suggested investigating what factors contribute to the growth of service-learning. This study integrated perspectives from international rotation coordinators to summarize themes regarding program features as well as areas the coordinators identified as being connected to growth of international rotations.

This study also explored several organizational factors, such as structures or programmatic features that support or facilitate international rotations, which are an avenue for international service-learning. Fumasoli and Stensaker (2013) also noted how national policy agendas have dominated organizational research and that views of administrators and other organizational actors in higher education have not been

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adequately explored; this study focused primarily on the perspectives of the front-line workers who design and implement international rotations, whether they hold faculty or staff positions. Focusing on international rotation coordinators as central actors in this study illuminated ways in which change can occur, processes that can be put in place to streamline the work of international rotations and sustain it at an institutional level, and the challenges involved in organizing international educational experiences for students.

Hodges et al. (2009) also stated that there are few comparative studies in medical education or research on the impact of international education in medical schools. By following an exploratory research design, this study provided a basis of information on which comparative case studies could be developed. Although the nature of the survey and interviews did not allow for a thorough investigation of international rotations at each participating medical school, it was possible to compare the data gleaned from the medical programs and integrate findings into themes that highlight both similarities and differences across medical schools.

Implications for the Field of Medical Education

Previous scholarship has investigated the growth in demand for and inclusion of international experiences in medical education (Lasker, 2016a; Plater, 2011). Recent criticisms of medical education demonstrate the need to improve educational strategies to connect medical students to the communities they will serve by using pedagogies that can better prepare students to serve patients with diverse cultural backgrounds (Gregg &

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Saha, 2006), teach civic and advocacy roles of physicians (Irby et al., 2010), and that can lead to sustainable outcomes for students and communities (Boelen, 2002). In response to many of these criticisms, medical education as a field has experienced an expansion in the use of community-based educational strategies (Boelen, 2002; 2008; Mann, 2011) as well as a notable increase in the demand for international education experiences (Lasker, 2016a). Scholars have claimed that international experiences can often address the preceding criticisms more effectively than learning that takes place in domestic settings (Bringle & Hatcher, 2011; Jones & Steinberg, 2011; Tonkin, 2011), and that international service-learning (ISL) can integrate professionalism, cultural competency, and an awareness of global health systems into training to serve a changing social landscape (Lasker, 2016a). Data from this study indeed indicated that international rotations can offer many of these benefits to students, as observed by the international rotation coordinators who participated in this study.

The rising student interest in international experiences in medical education coupled with the belief that ISL can contribute to addressing many of the critiques of medical education has led to pressure on U.S. medical schools to provide and even expand ISL, although there are also documented harms of ISL (DeCamp, 2007; Hartman, 2017; Lasker, 2016a; Sullivan, 2016). Evidence from this study supported the work of previous scholars by further demonstrating the prevalence of and demand for international rotations. Interviewees expressed a sentiment that the growth of

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international rotation offerings in medical education is inevitable; one interviewee simply stated, "...at my school, these experiences are going to happen." As demonstrated in this study, students can often pursue international experiences independently through third-party organizations even if medical schools do not formally offer these rotations.

Anticipated growth in international rotation offerings at medical schools in this study was expected primarily due to rising student interest. Medical schools in this study engaged in international rotations in the pursuit of a medical school's mission to improve health equity, reduce disparities, and serve vulnerable populations in areas of great need, as well as produce future primary care physicians. Consistent with models of experiential education that place students at the center of models of transformation instead of the community (Crabtree, 2008), this study demonstrated the prioritization of meeting student demand and the power that students hold in the neoliberal landscape within higher education. As one interviewee explained, medical schools simply cannot ignore the influence of student demand for international rotations: "Our students will still pursue other types of activities, but they'll be doing it independently without any oversight or guidance, and that presents a health and safety risk to them."

While scholars may debate various benefits and harms of ISL, it is clear that the use of ISL in medical education is an established and growing phenomenon in the field of medical education. Across medical schools that did and did not offer international rotations in this study, student demand led many students to pursue international

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activities either through formal medical school offerings or independently through the use of third-party organizations. The question of whether or not ISL is an appropriate strategy to address criticisms and shortcomings of current strategies in medical education, increase social accountability, and transform medical education may not be the appropriate question for scholars and practitioners to ask. This phenomenon is present and growing, and a more appropriate question is how medical education can and will react to the various pressures that have led to the expansion of community-based strategies such as ISL through international rotations.

Importance of coordinators and structures. Although international rotations are a growing phenomenon in medical education, this study demonstrated that they have yet to be positioned as core academic programming within medical schools, which leads to greater challenges in planning and implementation. Issues of funding and timing create barriers to student participation and program planning, and because of the exclusivity created largely in regard to high cost, international rotations are not required at a majority of medical schools. As an elective option, international rotations are therefore not standardized across medical schools, as demonstrated in this study, and have immense variation in many rotation components. The location of the international rotation, length of time a student participates, connection to educational goals, elements of pre-travel orientation or post-travel debrief, and evaluation components can be vastly different

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across medical programs and depend largely on the influence of the international rotation coordinator.

The fact that international rotations are not positioned as core academic programming in medical schools contributes to a cycle of additional barriers. The data in this study demonstrated a lack of support for international rotations at an equitable level to other rotations or clerkships across the board in terms of faculty involvement, leadership support, funding, infrastructure, and staffing. This leads to additional challenges for international rotation coordinators to set expectations for students who participate in international rotations that the activity is an educational pursuit, since international rotations do not structurally match other required components of medical education. Participants in this study traced many of these challenges back to issues of funding; without directly providing monetary support for additional costs related to international rotations and therefore address the issue of exclusivity, it is unlikely that medical schools could require international rotations and establish international rotations as key components of the medical program curricula.

This study indicated that many design elements of the rotation depend on the individual international rotation coordinator who plans and implements international rotations, due to the lack of standardized options of international rotations across a medical school. Given the influence of international rotation coordinators demonstrated in this study, medical schools could utilize international rotation coordinators as key

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levers for change by providing training or encouraging the pursuit of professional development related to best practices and ethical guidelines for international rotations. International rotation coordinators in this study often defined partnerships with a community site and directly influenced components of international rotations, such as pre-departure activities, activities performed during the rotation, post-travel debrief, and evaluation. In addition, the most influential factor to the design of an international rotation was a coordinator's definition of "service," which dictated the activities mentioned above. This study highlighted the power and agency that international rotation coordinators hold to revise policy and practice to contribute to incremental and continuous change, which can lead to broader cultural or transformational changes in medical schools (Jacobs, 2002; Sturm, 2006). By utilizing theories of emergent and continuous change coupled with recognition of the influence that international rotation coordinators hold over international rotations, training for coordinators on topics such as cultural competency, global health ethics, and partnership management could have a direct impact on the educational components of international rotations.

This study also demonstrated the importance and impact of structures and programmatic features within medical schools to support international rotations. Data indicated that formal structures, such as academic or administrative offices dedicated to international rotations, or programmatic features such as formalized and standardized processes can help support international rotations. Organizational and programmatic

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structures dedicated to international rotations can help support them at the same level as other rotations or clerkships within the medical school. Additionally, this study indicated that any ethical barriers present could be addressed by structures or processes to mitigate the barriers, such as providing cultural competency training for students before the international rotation. Many of the barriers demonstrated in this study as well as factors that could deter a medical school from participating in international rotations were present because of lack of structures to support international rotations. Although lack of structures could impact whether a medical school formally offered international rotations, the lack of support did not deter student participation and instead left students to either pursue international rotations independently or through third-party organizations, which limited the oversight of the medical schools.

This study has implications for other health professions fields or any other graduate or professional field interested in the use of experiential pedagogies. International service-learning has also been pursued in fields such as dentistry, physical therapy, and nursing, among others, to allow professional students to learn outside classroom settings and experience immersive education (Bentley & Ellison, 2007; Lattanzi & Pechak, 2011). Similar pressures that affect medical education, such as globalization and a need to integrate international health perspectives into training, also affect other health professions (Pechak & Thompson, 2009; Walsh, 2003). Given both the similar contexts affecting the fields and the growing inter-professionalization of health

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fields, this study can offer lessons for other health professions as ISL continues to develop in additional educational programs.

Utility of the Ecological Systems Model to Inform Studies on Transformation in Medical Education

This study also demonstrates the utility of the ecological systems model (Bronfenbrenner, 1979) to studies of change in medical education. The ecological systems model was developed to describe human development in relation to broader environmental factors and was used as a conceptual framework in this study to guide data collection and analysis across the broader ecological system and context of medical education, with the international rotation coordinator at the center as a previously unexplored perspective in medical education.

The ecological systems model allowed organizational factors that may act as levers of change within U.S. medical schools to be explored in this study. Throughout analysis, the use of this model provided structure to locate the various pressures, drivers, and constraints that affect how international rotation coordinators design and develop international rotations. Figure 6 summarizes system factors discussed previously in Chapters 4 and 5 in relation to the ecological systems model and additional perspective of the supramacrosystem.

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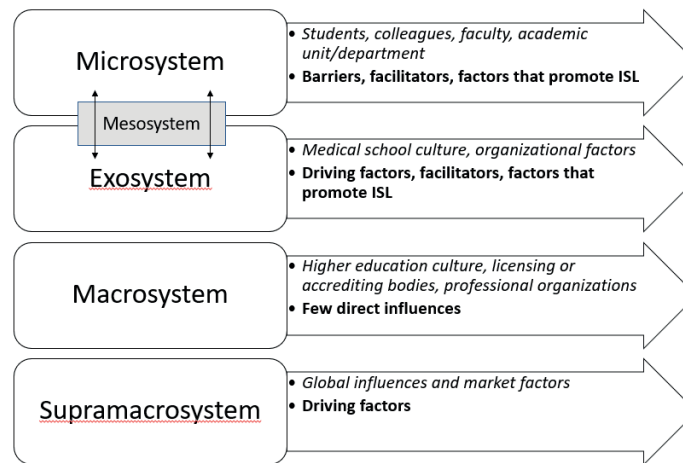


Figure 6. Summary of system factors affecting ISL in U.S. medical education.

While the ecological systems model was useful for the initial design phase of this study, it did not include an analytical frame broad enough to capture influences such as globalization or other market factors on international rotations. Data from this study indicated that these broader influences also impacted international rotations in U.S. medical schools; growth of international offerings was often framed by international rotation coordinators as inevitable because of globalization and increased opportunities for connections around the world as well as pressures from the changing workforce. These data demonstrate that medical schools face pressures from contexts outside of their control, which the ecological systems model fails to capture.

A more appropriate conceptual framework that captures an additional level of analysis is the psycho-ecological systems model (PESM). PESM was proposed as a

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systems-level approach to planning and measuring community impact of community-engaged scholarship efforts in higher education (Reeb & Folger, 2013; Reeb et al., 2017).

PESM is also based on an ecological systems approach but additionally incorporates biopsychosocial approaches as well as emphasizes person-environment interactions.

PESM focuses heavily on an individual placed in the center of the model and the psychological factors that influence the individual's behavior and interaction with environments, such as vulnerabilities, resiliency, and developmental pathways (Reeb et al., 2017). This central focus of PESM originally limited its applicability to this study, because the purpose of this study was to go beyond individual factors and additionally investigate organizational perspectives of international rotations, as expressed by coordinators. However, PESM adds a supramacrosystem to Bronfenbrenner's original model to capture the global system that can influence all lower-level systems and the growing interest in international activities within higher education (Reeb et al., 2017). Data from this study indicated the presence and influence of factors within the supramacrosystem that affect medical education, which emphasizes the importance of using frameworks that can capture pressures and influences across multiple, broad systems that influence medical education. Future studies on transformation within medical education due to the increase in use of ISL can adapt the PESM to investigate and analyze additional influences from the supramacrosystem, which can include the

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global economy, governmental relations, and sociopolitical forces and movements (Reeb et al., 2017).

Implications for Practitioners and Scholars

This study introduces several implications for practitioners in medical education who organize and implement international rotations, as well as other practitioners in higher education who utilize service-learning strategies. Given the growing inter-professionalization of the health fields and the similarities across graduate and professional education in the health fields, the implications for practitioners and scholars can also inform other areas of health professions education as the desire to interact with communities in meaningful ways continues to develop in those educational environments.

Implications for practitioners. A primary recommendation for practitioners and educators based on this study is to attempt to position international rotations as core academic pursuits with medical school curricula. Across the range of international rotation options a medical school might offer, practitioners should strengthen the connection between the international rotation and educational objectives by making explicit ties to broad goals of medical school curricula. Pre-departure orientation activities should be connected to the objectives for the rotation and include more curricular aspects than just travel logistics. Connection to educational goals and curricula within the medical school could help to justify the need for support staff, faculty, and

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funding to support a standard educational rotation, like any other clerkship in medical education. Connecting experiential learning activities to educational objectives is critical for student learning and could help improve student learning outcomes, such as greater clinical skills and an improved ability to work across cultures.

Another recommendation to strengthen international rotations is to provide clear expectations regarding what the student should or should not do as part of the international rotation. Students may find themselves in compromising ethical situations, but practitioners can prepare them for such situations by including ethical guidelines in pre-departure educational components. Medical schools can also include or require students to reflect on their experiences and learning while on the rotation, to help facilitate debriefing and processing of experiences. The timing available for a post-travel debrief emerged as a common challenge in this study, so identifying other opportunities for students to reflect on their experience while on the international rotation can encourage the reflection process even if gathering students after the rotation is challenging.

Both of these aspects can be addressed by including more comprehensive materials in pre-departure activities. While programs typically include orientation to safety considerations and travel logistics, additional materials can be developed by medical programs to be distributed to students during pre-departure orientation. These

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curricular materials could include modules related to ethics, professionalism, social medical use, tips to work with interpreters, and practice in a simulation lab.

Practitioners should also be attentive to constraints that issues of funding and time available for international rotations create. Since funding and timing issues prevent all medical students from being able to access international rotations, it is not likely that medical programs would be able to require international rotations as part of the core academic programming at a medical school; however, international rotation coordinators can take steps to remove barriers for students by establishing formal structures and standardized process to support international rotations and encourage ties to academic curricula where possible, such as academic concentrations or certificates. In addition to promoting accessibility of international rotations for students, structure and standardized processes can also strengthen partnerships with community sites.

This study also demonstrated how policies, processes, and funding can guide a student in his or her choice of an international rotation. Funding that is tied to international rotations can encourage students to take these electives, and scholarships can steer students to direct partner sites instead of third-party organizations. Cumbersome and complicated processes for students to design their own rotations may encourage the use of standardized international rotations at partner sites. By crafting the policies and procedures that surround international rotations, medical programs can encourage or discourage certain activities, sites, or types of partnership. In addition, if third-party

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organizations are used for international rotations, coordinators should seek out or encourage students to identify third-party organizations whose values align with the values and mission of the medical school.

Practitioners should also consider how post-travel activities and evaluation components can strengthen student learning. It is clear that there is limited time available after a student performs an international rotation, so medical schools should reconsider if traditional academic products, such as papers or posters, promote the greatest learning for students. Including new or strengthening existing reflection components performed after the international rotation may promote greater learning benefits by helping tie experiences to educational objectives, which is a key aspect of experiential learning. Medical programs should also examine if or how students are evaluated during or after the international rotation. These rotations present a unique opportunity to evaluate student learning in international contexts, and medical schools could redesign evaluations to match this context rather than simply use existing evaluations that are generally used for domestic rotations performed at the home institution. Evaluation components should also include questions to explore the impact of international rotations on host communities, which can provide useful information to contribute to the sustainability of partnerships.

Lastly, practitioners should create structures or processes to help guide the creation and maintenance of partnerships with host sites and situate international rotations as core academic endeavors in the medical program. Many of the structural

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barriers that international rotation coordinators identified during the planning process stemmed from the international rotation not being treated as a core academic component and from a lack of formal structures and processes in place to support international rotations. Items such as checklists can help a medical school identify a partner site that has the capacity to host student learners, and standardized expectations for what types of activities an international rotation can include can help align student experience to the community need at the host site. In many cases, participants in this study referenced informal relationships that faculty or students might bring to a medical program; formalizing these relationships can benefit both the educational experience as well as the sustainability of the partnership. Formal mechanisms such as memorandums of understanding between the medical school and host site can help promote regular evaluation and attention to the health of the partnership. Regular evaluation should be completed at the host site to investigate the impact that hosting international rotations has on the community partner site.

Implications for scholarship. This study also has implications for future scholarship on international rotations and international service-learning in medical education. First and foremost, this study highlighted the need for definitional clarity regarding the use of the term “service” in studies in medical education. Service and service-learning can mean many different things to different audiences. Service-learning is informed primarily by research from higher education but can be interpreted in vastly

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different ways in other fields. Future studies should clarify definitions and be attuned to the differences in interpretation depending on the field of study and the study participants.

This study also suggested the importance of third-party organizations as well as professional associations, which are entities that are typically viewed to be outside of the higher education field and not included in many studies. Third-party organizations and professional associations with national gatherings can serve as areas for resource sharing and may contribute to setting standards across medical schools. Exploring the relationship between medical schools and third-party organizations that organize international rotations can also illuminate other ways in which students can pursue international experiences if they are not formally offered at the medical program.

Scholarship regarding international service-learning in medical education would also benefit by further investigation into best practices for pre-departure preparation, post-travel debrief, and evaluation of student activity as well as impact on the host site. These aspects can capitalize on the benefits that international service-learning offers and strengthen student learning by helping to make connections between experiences during the rotation, learning objectives, and future practice. Variation of activities while on the international rotation could also impact the outcomes that both a student and the host site might experience.

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This study also highlighted the role of students in driving medical school participation in international activities as well as how the motivations of international rotation coordinators can influence the design of the rotations. These two factors are largely unexplored in literature in higher education and medical education. Focus on the influence of student interest as a driver and the influence of front-line staff or faculty who organize and implement international rotations could provide additional insights into the use of international rotations or international service-learning and how these factors could contribute to changes in medical education.

Related to the idea of change or transformation in medical education, this study also has implications for studying organizational change efforts in higher education and medical education. Advancing service-learning strategies in medical education depends on an understanding of organizational change in higher education, awareness of where pressures for change exist and how they influence processes within the medical school, and strategies to sustain change efforts. An understanding of theories of change can help provide insights into how a discipline, such as medical education, that is rooted in tradition and established norms of practice, can undergo change.

This study demonstrated that theories of continuous, emerging, or incremental change may be well-suited to the contexts of higher education and medical education. Ongoing adaptations can lead to fundamental change as processes are changed over time by the international rotation coordinators who create structures and new routines to

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respond to emergent situations in medical education. Pressures from external forces such as industry or globalization can lead to changes, as well as pressures from internal forces such as faculty, staff, or students.

Methodological implications. This study also demonstrates the utility of inductive analysis and interpretive description in exploratory studies. Inductive analysis led to the emergence of themes and concepts that cut across the survey and interview data, presented in rich, descriptive accounts. Inductive analysis was well-suited to the purpose of this study to uncover relevant details and identify issues for follow up research, providing pragmatic information that is useful to health education fields.

The use of interpretive description in particular demonstrated its relevance to research studies that are oriented toward providing information that can assist professionals in their practice. Interpretive description allowed patterns to be analyzed across the data, within and between individual cases. As Thomas (2006) noted, interpretive description is not a strong method for theory development but provides a clear approach for exploring data to answer focused and grounded questions. This method of analysis emphasizes the importance of linking new research questions to existing knowledge in the field. By grounding the research questions of this study in the literature base, findings were highly contextualized and provided concrete strategies that practitioners in medical education and other health professions fields can utilize.

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Limitations of the Study

While this study had many strengths as an exploration of the use of international service-learning in medical education, it naturally had limitations as well. The literature review that provided the foundation of this study was limited in scope to a historical overview of the major concepts in service-learning and organizational change, but it integrated several bodies of literature with the potential to inform future strategies to incorporate service-learning as a pedagogical approach for reform in medical education.

The methods in this study, namely the use of interpretive description, also contributed to limitations of this study. This method is not a strong approach for theory development and is less widely known outside of health disciplines, so there are limited resources to consult as examples (Hunt, 2009). However, the use of interpretive description is useful to produce findings relevant to practice that are grounded in an orientation to current knowledge in the field.

This study is also potentially limited by its mixed methods design. With any study that involves a survey, the frequencies may be overstated or not representative due to nonrespondents. The sampling method may have excluded participants if international service-learning was not organized by academic or co-curricular units. In addition, an examination at the organizational level presents challenges because a respondent may not always speak for the organization (Janke, 2013). Despite challenges during phase one of

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this study, which relied upon survey data, the interviews in phase two provided much greater detail to illuminate themes across medical schools.

This study also does not include the perspectives of the community host populations, which are key stakeholders in international service-learning partnerships, and the data may not represent all manners through which U.S. medical schools engage in international programming. As an exploratory approach, however, this study provided insights into how medical schools in the U.S. approach, organize, and implement international service-learning, and highlighted several questions that can guide future study.

Future Research Questions

As an exploratory study, this research provided a foundational basis of information regarding international rotations and international service-learning in medical education and identified areas for future research to continue investigating.

First, future studies regarding the use of international service-learning in medical education should include the critical perspective of the host community to examine the concept of mutual benefit and outcomes or impacts that the host community might experience. This study suggested that lower-income countries may be used more often for international rotations and international service-learning, and future research can explore the aspects within these countries that make them appear to be better suited for international service-learning as opposed to middle-income or high-income countries.

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Future studies can also explore aspects of partnerships between medical schools and host communities to determine which factors contribute to effective and sustainable partnerships. An examination of the institution's stake in a partnership, financial or otherwise, could also provide information regarding the sustainability of partnerships even in the face of challenging circumstances, such as safety concerns or changes in funding. This study also demonstrated that many medical programs rely on third-party organizations to expand opportunities for students to participate in international rotations; future studies should investigate the relationships between medical programs and third-party entities that are used to help plan and implement international rotations.

Second, future studies that aim to explore transformational processes in medical education should also focus on the location of the impetus for change, and the incremental change processes that are undertaken at the medical program. Focusing on internal factors can illuminate effective, context-based strategies for change in the unique environment of medical education. In addition, examining how small changes over time can contribute to fundamental shifts in routines, processes, and structures can also illuminate transformational strategies. Studies that examine change processes can focus on the agency exhibited by stakeholders within the medical school, such as faculty and staff who organize and implement international rotations and can have greater influence over the design of the rotation. Additional studies should also consider how strong of an influence driving factors have on a medical school's participation in international

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activities, and what happens if these factors shift. For example, student interest emerged as a driving presence in this study that encourages medical schools to offer international rotations and establish partnerships at host sites. If student interest wanes, or other driving factors lessen in influence, there may be negative implications for community partners. This study also demonstrated that the motivations and capacity for international rotation coordinators affected a variety of program features. Future research regarding service-learning initiatives and other educational innovations should explore the factors that motivate international rotation coordinators and affect the design decisions that are made in the process of planning and implementing international rotations.

Lastly, regarding the rotations themselves, there are many opportunities for future studies to explore how particular components may affect student outcomes or impacts on the host site. This study revealed great variety in terms of activities included, length of time at a host site, and number of international rotations taken during medical school. These all represent variables that could affect the efficacy of international service-learning approaches on student learning or improved health outcomes in the community. This study also implied that in many cases, a student performs activities on the international rotation similar to the types of activities he or she would perform at the home institution on a similar rotation. Future studies can explore how experiential learning in international sites differs from learning in domestic settings, and explore what is unique about the environment in low-income countries that supports the inclusion of

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international service-learning components as opposed to middle- or high-income countries.

In any future study performed on international service-learning in medical education, definitional clarity is critical to establish operational definitions of service-learning in the context of medical education. Studies should clearly define terms and attend to how various interpretations of “service” in different disciplines can affect the data. Regarding methodology, this study highlighted the difficulty in comparing medical schools and their approaches to international service-learning due to the heterogeneity across programs. Comparative case studies could be performed on smaller subsets of medical schools across the U.S. that have similar institutional contexts within the exosystem or macrosystem to investigate themes identified in this study in greater detail.

Conclusion

The purposes of medical education institutions are increasingly scrutinized for their value and relevance to society, similar to all other institutions of higher education. Questions regarding the most effective ways to prepare students to meet changing societal, industrial, and global needs are asked by students, politicians, and public actors. Trends that affect higher education, such as the need for greater accountability, improvement of quality, and increase in equity also affect medical education. Common criticisms of medical education have led to calls for reform to make medical education more relevant to current societal needs using educational strategies that connect medical

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students to the communities in which they will serve. However, there is a general lack of knowledge surrounding how to most effectively transform medical education in a lasting and meaningful way.

Criticisms of medical education state that medical students are not adequately prepared to serve patients with diverse cultural backgrounds, that curricula is no longer connected to current practice challenges, and that current service activities do not lead to sustainable and beneficial impacts on communities or students. In response, experiential learning strategies such as service-learning have been proposed to address many of these concerns and to encourage medical schools to be socially accountable to the communities in which their graduates will serve. At the same time, there has been a notable increase in the demand for international education experiences, leading to an expansion of the use of international rotations and international service-learning.

Scholars have argued that international service-learning is a strategy that can address many of the criticisms of medical education and promote social accountability in medical education. Experiential learning strategies can provide many benefits to student learning, but also present risks to the host communities and have implications regarding the most sustainable way that medical schools can support mutually beneficial relationships with host communities. As a result of these factors, medical schools in the U.S. face a situation in which international service-learning creates new areas of uncertainty but also offers great promise for student learning and improved health

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outcomes in various communities; international service-learning experiences are in high demand but may be implemented despite a lack of comprehensive understanding of the change processes in medical education that can lead to effective experiential learning outcomes for all stakeholders involved.

This study examined international service-learning in medical education programs in the United States and territories by investigating international rotations, which represent the avenue through which international service-learning can be pursued. Details regarding the variety of ways that international rotations are designed and implemented were collected, as well as information about the barriers and facilitators to implementing international rotations, and about the larger contextual factors that affect a medical school's participation in international service-learning. This study provided an examination of themes across medical schools described by international rotation coordinators, who represent critical and influential institutional actors who design, develop, and implement international rotations. The study offered several conclusions relevant to practitioners and scholars, and highlighted areas for future research to explore. By integrating concepts of organizational change, transformational pedagogical strategies such as service-learning, and ethical practices of international service-learning in medical education, this study ultimately provided useful insights for any scholar or practitioner interested in the landscape of international service-learning in medical education.

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Appendix A Survey Questions*

**Survey print-out from Qualtrics platform. Question numbers do not necessarily represent the amount of questions included but are assigned by Qualtrics to direct built-in logic.*

Definitions:

This survey refers to the following terms as follows. Definitions will be repeated on relevant pages of the survey as a reminder.

“Program” or **“medical program”** refers to a medical degree program with structured curriculum leading to MD or DO

“Institution” refers to a college or university that encompasses medical program and other academic schools/departments for undergraduate or graduate education

“International rotation” refers to elective, non-elective, or required experiences in which a U.S.-based medical student travels to a different country (non-U.S.) to meet educational objectives as part of the medical program

“Domestic community-based learning rotation” refers to elective, non-elective, or required experiences in which medical students meet educational objectives in a community setting (non-classroom setting) in the United States

Page Break

The following questions relate to key characteristics of your medical program.

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About how many students **per year** does your medical program have? (Medical program refers to degree program with structured curriculum leading to MD or DO)

☐ Less than 100 (1)

☐ 100-199 (2)

☐ 200-299 (3)

☐ 300-399 (4)

☐ 400-499 (5)

☐ 500 or more (6)

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Please select from the following characteristics about your medical program - choose all that apply:

- ☐ Public (1)
- ☐ Private (2)
- ☐ Research university (3)
- ☐ Faith-affiliated (4)
- ☐ Urban (5)
- ☐ Rural (6)
- ☐ Suburban (7)
- ☐ MD-granting (8)
- ☐ DO-granting (9)

“International rotation” refers to elective, non-elective, or required experiences in which a U.S.-based medical student travels to a different country (non-U.S.) to meet educational objectives as part of the medical program.

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Does your medical program offer international rotations?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Unsure/Don't know (4)

Skip To: Q40 If "International rotation" refers to elective, non-elective, or required experiences in which a U.S... = No

Skip To: Q40 If "International rotation" refers to elective, non-elective, or required experiences in which a U.S... = Unsure/Don't know

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Display This Question:

If “International rotation” refers to elective, non-elective, or required experiences in which a U.S... = Yes

Which of the following components are part of the international rotations? Please choose all that apply:

- ☐ Activities tied to course learning objectives (1)
 - ☐ Non-clinical service projects (2)
 - ☐ Observation of medical procedures (3)
 - ☐ Pre-departure orientation (4)
 - ☐ Post-travel debrief (5)
 - ☐ Student reflection while at international site (6)
 - ☐ Student reflection of the activity upon return to home program (7)
 - ☐ Preceptor or mentor from home program (8)
 - ☐ Preceptor or mentor from international site (9)
 - ☐ Clinical service (medical treatment given by student to patient) (10)
 - ☐ Student engagement in research (11)
-

INTERNATIONAL SERVICE-LEARNING IN MEDICAL EDUCATION

Taking into account all of the international rotation experiences within your medical program, what do you consider to be the average duration?

- ☐ Less than 1 month (1)
 - ☐ 1-3 months (2)
 - ☐ 4-6 months (3)
 - ☐ Longer than 6 months (4)
 - ☐ Unsure/Don't know (5)
-

On average, about how many international rotations might a student take over the course of the entire medical program?

- ☐ 0 (1)
 - ☐ 1 (2)
 - ☐ 2 (3)
 - ☐ 3 (4)
 - ☐ 4 (5)
 - ☐ 5 (6)
 - ☐ More than 5 (7)
-

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Taking into account all of the international rotation experiences within your medical program, in which countries do *most* international rotations occur?

- ☐ Low-income countries (1)
 - ☐ Middle-income countries (5)
 - ☐ High-income countries (6)
 - ☐ Unsure/Don't know (7)
-

Page Break

Do the majority of students take international rotations as:

- ☐ An elective component of the medical program (1)
 - ☐ A required component of the medical program (2)
 - ☐ Both a required component and elective components of the medical program (3)
-

Display This Question:

If Do the majority of students take international rotations as: = An elective component of the medical program

Do the majority of students take international rotations as electives in:

- ☐ The first two years of the medical program (1)
 - ☐ The last two years of the medical program (2)
 - ☐ Unsure/Don't know (3)
-

INTERNATIONAL SERVICE-LEARNING IN MEDICAL EDUCATION

Display This Question:

If Do the majority of students take international rotations as: = A required component of the medical program

Do the majority of students take international rotations as required components in:

- ☐ The first two years of the medical program (1)
- ☐ The last two years of the medical program (2)
- ☐ Unsure/Don't know (3)

Display This Question:

If Do the majority of students take international rotations as: = Both a required component and elective components of the medical program

How do the majority of students typically take international rotations during the medical program?

	The first two years of the medical program (1)	The second two years of the medical program (2)	Unsure/Don't know (3)
As a REQUIREMENT during which years: (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As an ELECTIVE during which years? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Are there additional course fees for international rotations, including travel, beyond regular tuition payment?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Unsure/Don't know (4)

Display This Question:

If Are there additional course fees for international rotations, including travel, beyond regular tu... = Yes

In your medical program, the additional course fees for international rotations are *most commonly* paid by which of the following:

- ☐ The student (1)
- ☐ The medical program or institution (2)
- ☐ Scholarships for students (3)
- ☐ Grants for students (4)

Page Break

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Please select the frequency at which the following occur in your medical program:

	Never (7)	Sometimes (8)	About half the time (9)	Most of the time (10)	Always (11)
Students receive academic credit for their international rotations (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students' international rotation performance is evaluated by members of the home/sending program (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students' international rotation performance is evaluated by members of the host/receiving program or site (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students are precepted or supervised during international rotations by someone from their home/sending program (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students are precepted or supervised during international rotations by someone from the host/receiving program or site (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
International rotations require a pre-departure orientation (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
International rotations require a post-travel debrief (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

INTERNATIONAL SERVICE-LEARNING IN MEDICAL EDUCATION

Does your medical program partner with any of the following types of other entities to design, plan, or implement international rotations? Please check all that apply.

- ☐ None, all completed at medical program (1)
- ☐ Host/receiving institution or site (7)
- ☐ Non-governmental organizations (NGOs), including non-profits (2)
- ☐ International NGOs (3)
- ☐ Private companies (4)
- ☐ For-profit companies (5)
- ☐ Faith-based organizations (6)

Page Break

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Please select your level of agreement with the following statements related to implementing the international rotation:

	Strongly agree (11)	Somewhat agree (12)	Neither agree nor disagree (13)	Somewhat disagree (14)	Strongly disagree (15)
The GOALS of the international rotation host site are considered (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The NEEDS of the international rotation host site are considered (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The TIMELINES of the international rotation host site are considered (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The RESOURCES of the international rotation host site are considered (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The CAPACITY of the international rotation host site is considered (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faculty or staff from international rotation host sites are involved in designing the international rotation (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Does your medical program host students from other countries?

- ☐ Yes (1)
- ☐ No (4)
- ☐ Unsure/Don't know (5)

Skip To: Q36 If Does your medical program host students from other countries? = No
Skip To: Q36 If Does your medical program host students from other countries? = Unsure/Don't know

Display This Question:

If Does your medical program host students from other countries? = Yes

If your medical program hosts students from other countries, are the majority of these students from:

- ☐ Low-income countries (1)
- ☐ Middle-income countries (2)
- ☐ High-income countries (3)
- ☐ Unsure/Don't know (4)

[Q36] Does your medical program also offer domestic community-based education opportunities? (elective, non-elective, or required experiences in which medical students

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meet educational objectives in a community setting (non-classroom setting) in the United States)

- ☐ Yes (1)
- ☐ No (2)
- ☐ Unsure/Don't know (4)
-

Are international rotations a focus within your medical program's mission or purpose statement?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Unsure/Don't know (3)
-

About how many years has your medical program included international rotations?

- ☐ Less than 1 year (1)
- ☐ 1-5 years (2)
- ☐ 6-10 years (3)
- ☐ More than 10 years (4)
-

Please list up to three other offices at your institution that are engaged in planning or implementing international rotations in collaboration with your medical program (study abroad office, community integration, etc.). If none, please leave blank.

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Skip To: Q41 If Please list up to three other offices at your institution that are engaged in planning or implementing... Is Displayed

[Q40] To the best of your knowledge, why doesn't your medical program offer international rotations?

Skip To: Q43 If To the best of your knowledge, why doesn't your medical program offer international rotations? Is Displayed

The following section explore barriers and facilitators of international rotations.

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Please select the level of influence these **barriers** have on your medical program engaging in international rotations:

	Not at all influential (1)	Slightly influential (2)	Very influential (3)	Extremely influential (4)
Lack of grants or other funding (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of convenient opportunities to develop community partnerships (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insufficient rewards or roles for research with the community (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unfamiliarity with leaders of community-based organizations/community agencies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouragement of leadership (program, department, university) to perform research with the community (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insufficient time for research with communities (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competition of sites for community-based research or teaching (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Low student interest (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ethical barriers (please specify) (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Please select the level of influence these **facilitators** have on your medical program engaging in international rotations:

	Not at all influential (1)	Slightly influential (2)	Very influential (3)	Extremely influential (4)
Access to grants or other funding (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenient opportunities to develop community partnerships (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adequate rewards or roles for research with the community (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiarity with leaders of community-based organizations/community agencies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouragement of leadership (program, department, university) to perform research with the community (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adequate time for research with communities (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of sites for community-based research or teaching (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High student interest (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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[Q42] Please list up to three facilitating structures that are in place to support implementation or advancement of international rotations (e.g., administrative support, dedicated funding, etc.). If none, please leave blank.

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The following section explores institutional factors related to international rotations at your medical program.

"Institution" refers to a college or university that encompasses the medical program and other academic schools/departments for undergraduate or graduate education

Is your medical program situated within a larger higher education institution or university?

☐ Yes (1)

☐ No (2)

Skip To: Q47 If "Institution" refers to a college or university that encompasses the medical program and other ac... = No

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Display This Question:

If "Institution" refers to a college or university that encompasses the medical program and other ac... = Yes

About how many students does your **institution** (college or university that encompasses medical program and other academic schools/departments for undergraduate or graduate education) have **per year**?

- ☐ Less than 500 (1)
 - ☐ 500-2,999 (2)
 - ☐ 3,000-5,999 (4)
 - ☐ 6,000-8,999 (5)
 - ☐ 9,000-11,199 (6)
 - ☐ 12,000-14,999 (7)
 - ☐ 15,000 or more (8)
-

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Please select from the following characteristics about your **institution** - choose all that apply:

- ☐ Public (1)
 - ☐ Private (2)
 - ☐ Research university (3)
 - ☐ Faith-affiliated (4)
 - ☐ Urban (5)
 - ☐ Rural (6)
 - ☐ Suburban (7)
-

Does your **institution** have Carnegie Community Engagement classification?

- ☐ Yes (1)
 - ☐ No (2)
 - ☐ Unsure/Don't know (3)
-

Page Break

[Q47] Does your medical program also engage in domestic community-based education opportunities? (elective, non-elective, or required experiences in which medical students

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meet educational objectives in a community setting (non-classroom setting) in the United States)

☐ Yes (1)

☐ No (2)

About how many years has your medical program engaged in community-based education opportunities?

☐ Less than 1 year (1)

☐ 1-5 years (2)

☐ 6-10 years (3)

☐ More than 10 years (4)

Page Break

The final section will collect your demographic information.

What is your role at the medical program?

☐ Faculty (1)

☐ Staff (2)

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Display This Question:

If What is your role at the medical program? = Faculty

Which best describes your position?

- ☐ Adjunct/Affiliate Professor (1)
- ☐ Assistant Professor (2)
- ☐ Associate Professor (3)
- ☐ Full Professor (4)
- ☐ Other (please specify) (5) _____

Display This Question:

If What is your role at the medical program? = Staff

What is your job title? _____

What is your home department or academic unit? _____

How many years have you been in the position indicated above?

0 5 10 15 20 25 30 35 40 45 50

Please slide the bar to select the number
of years ()



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Do you have a joint appointment, job, or affiliation with another department or academic unit?

☐ Yes (please specify) (1) _____

☐ No (2)

Do you belong to any professional associations related to planning or implementing international rotations?

☐ Yes (1)

☐ No (2)

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Please select the ethnic background(s) you most identify with (choose all that apply):

- ☐ Caucasian/White (1)
 - ☐ African American (2)
 - ☐ American Indian/Alaska Native (3)
 - ☐ Asian (4)
 - ☐ Native Hawaiian/Other Pacific Islander (5)
 - ☐ Hispanic/Latino (6)
 - ☐ Other (please specify) (7)
-

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The second stage of this research project includes follow-up interviews. Please enter your email address below if you are willing to be contacted for a 30-60 minute phone or video interview. Your email address will not be included with survey responses.

Yes, I am willing to be contacted for a follow up interview (please enter email address):

If there are any other institutional stakeholders that you believe should be contacted for a follow-up interview, please list their contact information below. The name and email address will not be included with survey responses.

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Name: _____

Email

address: _____

Please briefly describe why you believe they should be contacted for a follow-up interview: _____

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Thank you for your time in completing this survey. Please enter your email address below if you would like a copy of the study results.

Email

address: _____

End of Block: Default Question Block

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Appendix B

Interview Protocol

Introduction: The following questions explore international rotations in medical education. This portion of the study is voluntary, and the interviewee may stop the interview at any time. Responses will be recorded and any identifying information will be removed before the data is analyzed.

Semi-structured questions for follow-up interviews. Other questions may be designed based on individual survey responses. For the interview, some or all questions may be selected from the following:

Key questions:

1. Describe common international rotations at your medical program.
 - a. What are some of the products or activities that students produce for successful completion of the rotation (project, paper, presentation, etc.)
 - b. What types of activities are included in international rotations? Clinical?
Non-clinical?
2. Please list up to three steps that are taken to identify suitable sites for international rotations.

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3. Please list up to three steps that are taken to match students to sites for international rotations.
4. Why does your medical program engage in international rotations?
5. What do you perceive as benefits of international rotations at your medical program?
6. What do you perceive as disadvantages of international rotations at your medical program?
7. Do you expect growth of international rotations in the medical school in the future?
8. In what way has the medical school program changed since incorporating international rotations?
9. Is there anything else you would like to add?

Secondary questions (if time allows):

1. If your medical program partners with other organizations to plan or implement international rotations (indicated on survey response): Why does your program partner with these types of organizations?
2. Why do you, as an individual, engage in international rotations? What are the main challenges you face? What would make it easier?
3. Does the medical program include pre-departure orientation before the international rotations? What types of activities are included?

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4. Does the medical program include a post-travel debrief after the international rotations? What types of activities are included?
5. If the medical program host students from other countries as well (indicated in the survey response): why does your program host students from other countries? In what components of the program do they engage?
6. If students are evaluated on the international rotation (indicated in the survey response): how are students evaluated? Who evaluates them?

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Appendix C

Research Question Mapping

Research Question	Survey	Interviews
1)What do coordinators of international rotations identify as key characteristics of international rotations in U.S. medical schools?	<p>Q23: Which of the following components are part of the international rotations? Please choose all that apply</p> <p>Q24: Taking into account all of the international rotation experiences within your medical program, what do you consider to be the average duration?</p> <p>Q68: On average, about how many international rotations might a student take over the course of the entire medical program?</p> <p>Q25: Taking into account all of the international rotation experiences within your medical program, in which countries do <i>most</i> international rotations occur?</p> <p>Q71: Do the majority of students take international rotations as: [requirement or elective]</p> <p>Q72: Do the majority of students take international rotations as electives [or</p>	<p>1. Describe common international rotations at your medical program. 1a. What are some of the products or activities that students produce for successful completion of the rotation (project, paper, presentation, etc.) 1b. What types of activities are included in international rotations? Clinical? Non-clinical?</p> <p>2. Please list up to three steps that are taken to identify suitable sites for international rotations.</p> <p>3. Please list up to three steps that are taken to match students to sites for international rotations. 2-1. If your medical program partners with other organizations to plan or implement international rotations (indicated on survey response): Why does your program partner</p>

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	<p>requirements] in: [first two years or last two years or unsure]</p> <p>Q75: Are there additional course fees for international rotations, including travel, beyond regular tuition payment?</p> <p>Q76: In your medical program, the additional course fees for international rotations are <i>most commonly</i> paid by which of the following:</p> <p>Q29: Please select the frequency at which the following occur in your medical program: [credit, evaluated, precepted, pre-departure, post-travel]</p> <p>Q30: Does your medical program partner with any of the following types of other entities to design, plan, or implement international rotations? Please check all that apply.</p> <p>Q31: Please select your level of agreement with the following statements related to implementing the international rotation: [goals, needs, timelines, resources,</p>	<p>with these types of organizations?</p> <p>2-3. If students are evaluated on the international rotation (indicated in the survey response): how are students evaluated? Who evaluates them?</p> <p>2-5. Does the medical program include pre-departure orientation before the international rotations? What types of activities are included?</p> <p>2-6. Does the medical program include a post-travel debrief after the international rotations? What types of activities are included?</p>
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	capacity, faculty/staff from host involved in planning]	
1a)What are the foundational structural and programmatic components that are necessary for international rotations?	<p>Q39: Please list up to three other offices at your institution that are engaged in planning or implementing international rotations in collaboration with your medical program (study abroad office, community integration, etc.). If none, please leave blank.</p> <p>Q42: Please list up to three facilitating structures that are in place to support implementation or advancement of international rotations (e.g., administrative support, dedicated funding, etc.). If none, please leave blank.</p>	8. In what way has the medical school program changed since incorporating international rotations?
2)What do international rotation coordinators identify as barriers and facilitators to implementing international service-learning in U.S. medical schools?	<p>Q10: Please select the level of influence these barriers have on your medical program engaging in international rotations:</p> <p>Q12: Please select the level of influence these facilitators have on your medical program engaging in international rotations:</p>	2-4. Why do you, as an individual, engage in international rotations? What are the main challenges you face? What would make it easier?
2a) What do international rotation coordinators identify as factors that drive or deter	Q40: To the best of your knowledge, why doesn't your medical program offer international rotations?	4. Why does your medical program engage in international rotations?

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<p>participation of a U.S. medical school in international service-learning?</p>		<p>5. What do you perceive as benefits of international rotations at your medical program?</p> <p>6. What do you perceive as disadvantages of international rotations at your medical program?</p> <p>7. Do you expect growth of international rotations in the medical school in the future?</p> <p>2-2. If the medical program host students from other countries as well (indicated in the survey response): why does your program host students from other countries? In what components of the program do they engage?</p>
<p>3) Is there a relationship between certain components in the medical school or institutional environment and a medical school's inclusion of international service-learning in international rotations?</p>	<p>Q20: About how many students per year does your medical program have? (Medical program refers to degree program with structured curriculum leading to MD or DO)</p> <p>Q21: Please select from the following characteristics</p>	<p>2-2. If the medical program host students from other countries as well (indicated in the survey response): why does your program host students from other countries? In what components of the program do they engage?</p>

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	<p>about your medical program - choose all that apply</p> <p>Q33: Does your medical program host students from other countries?</p> <p>Q34: If your medical program hosts students from other countries, are the majority of these students from:</p> <p>Q36: Does your medical program also offer domestic community-based education opportunities? (elective, non-elective, or required experiences in which medical students meet educational objectives in a community setting (non-classroom setting) in the United States)</p> <p>Q37: Are international rotations a focus within your medical program's mission or purpose statement?</p> <p>Q38: About how many years has your medical program included international rotations?</p> <p>Q47: Does your medical program also engage in domestic community-based education opportunities? (elective, non-elective, or required experiences in which medical students meet</p>	<p>4. Why does your medical program engage in international rotations?</p> <p>5. What do you perceive as benefits of international rotations at your medical program?</p> <p>6. What do you perceive as disadvantages of international rotations at your medical program?</p> <p>7. Do you expect growth of international rotations in the medical school in the future?</p>
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	<p>educational objectives in a community setting (non-classroom setting) in the United States)</p> <p>Q44: Is your medical program situated within a larger higher education institution or university?</p> <p>Q45: About how many students does your institution (college or university that encompasses medical program and other academic schools/departments for undergraduate or graduate education) have per year?</p> <p>Q48: Please select from the following characteristics about your institution - choose all that apply:</p> <p>Q49: Does your institution have Carnegie Community Engagement classification?</p> <p>Q50: About how many years has your medical program engaged in community-based education opportunities?</p> <p>Q52: What is your role at the medical program?</p> <p>Q1: Which best describes your [faculty] position?</p>	
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	<p>Q53: What is your [staff] job title?</p> <p>Q54: What is your home department or academic unit?</p> <p>Q5: How many years have you been in the position indicated above?</p> <p>Q55: Do you have a joint appointment, job, or affiliation with another department or academic unit?</p> <p>Q56: Do you belong to any professional associations related to planning or implementing international rotations?</p> <p>Q6: Please select the ethnic backgrounds(s) you most identify with</p>	
Additional Information		Is there anything else you would like to add?