Cultural Embeddedness & the International Traveler

Influences on Travel Behavior for the Prevention of Imported Dengue
CULTURAL EMBEDDEDNESS AND THE INTERNATIONAL TRAVELER: INFLUENCES ON TRAVEL BEHAVIOR FOR THE PREVENTION OF IMPORTED DENGUE

A dissertation submitted to the Kent State University College of Public Health in partial fulfillment of the requirements for the degree of Doctor of Philosophy

By Koya C Allen August 2013
A dissertation written by

Koya C Allen

BA, University of Rochester, 2004;
MSPH, Tulane University, 2005;
MS, Georgetown University, 2010;
PhD, Kent State University, 2013;

Approved by

Mark James
_______________________, Chair, Doctoral Dissertation Committee
Mark James

Eric Jefferis ____________, Member, Doctoral Dissertation Committee
Eric Jefferis

R. Scott Olds ____________, Member, Doctoral Dissertation Committee
R. Scott Olds

Laura Dzurec ____________, Graduate Faculty Representative, Doctoral Dissertation Committee
Laura Dzurec

Accepted by

Sonia Alemagno ____________, Dean, College of Public Health
Sonia Alemagno
ABSTRACT

Background: Dengue prevention for U.S. travelers focuses on compliance with mosquito avoidance practices (MAP) and passive surveillance. Understanding determinants of MAP among high-risk travelers can improve Dengue prevention strategies. In travel medicine, a risk assessment framework of social determinants of health and travel purpose of visiting friends and relatives (VFR) determines risk of travel-associated diseases. This risk assessment framework is subject to bias and inaccuracy because it fails to account for factors of influence on travel behaviors from a social-ecological perspective. A mixed methods approach identified and characterized determinants of MAP in U.S. West-Indian American VFR travelers. Two pilot studies revealed travelers’ decision-making processes for MAP and outlined determinants of intended MAP through a qualitative interview and cross-sectional survey. Survey analyses included an exploratory factor analysis, Chi-squared/ Fisher’s exact test, logistic regression and qualitative coding for development of an ‘Intended MAP International Travel Behavior’ (IMAP-ITB) model.

Methods: To expand the IMAP-ITB model and describe factors of influence on actual MAP, 2 subsequent qualitative studies were conducted. A multi-case ethnographic study of travel cohorts to Trinidad, Brazil and Thailand identified social/physical environmental influences on actual MAP in a cross-case content analysis of field observations data. An interpretive phenomenological analysis of semi-structured interviews yielded similarities and differences in MAP by revealing the meaning of ‘going home’ in VFR travelers versus another travel destination.

Results: A ‘Cultural Embeddedness and MAP’ model extends the IMAP-ITB, using a social-ecological perspective, including factors of influence on intended and actual MAP. MAP during international travel was associated with travel logistics, social interactions, risk perceptions and cues to action. The concept of ‘Cultural Embeddedness’ may explain compliance behaviors with MAP, irrespective of VFR status.

Discussion: Prevention strategies at each level of influence within a social-ecological framework would address Dengue emergence because individual level prevention using MAP is capricious by individual, type of travel and social/physical environmental influences. Findings demonstrate that VFR terminology does not accurately depict high-risk travelers. Next steps should include more research on the concept of ‘Cultural Embeddedness’ and CEMAP. Furthermore, improvements to current Dengue surveillance are needed to prevent to prevent and monitor imported Dengue.
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PREFACE

Dengue fever as a significant travel health concern has gained considerable attention over recent years. With increases in imported cases and the slow, but steady spread of Dengue in Southern Florida, researchers and practitioners have become more aware of Dengue as an important Arboviral infection in temperate regions. Dengue prevention has been an important part of my education, career and personal experience over the last 6 years. Once I witnessed firsthand, the travel risk, lack of education among health professionals in the United States (U.S.), poor prevention strategies, and lack of security for imported diseases across international borders, I began conducting research in the area of Emerging Diseases with a particular focus on Dengue Fever.

This dissertation project is the result of evolving interests and different research experiences over the past few years. However, Dengue as a travel health concern became an interest while falling ill after travel to Republic of Trinidad and Tobago for the annual Carnival in 2008. Already being knowledgeable in tropical diseases, including Dengue, from my educational background in Microbiology and Parasitology, I was convinced that I was a probable case of Dengue fever. On a visit to my primary care provider at the time, I attempted to provide my travel history and list of symptoms. To my surprise, when I informed her of a recent outbreak of Dengue in Trinidad, and that I had returned to the U.S. 3 days prior, she asked me what Dengue was, and said she hoped I had a good trip! Dismayed by her lack of knowledge, I told my parents to take me to the emergency department if my fever spikes any higher or if it seemed like my condition was getting worse. Equipped with Tylenol and water, I nursed myself back to health and used the experience as an opportunity for a new research agenda.
At the time, Dengue was not included in the Nationally Notifiable Diseases Surveillance System (NNDSS) as a mandatory reportable disease in the U.S. Many considered Dengue an exotic disease and insignificant threat. Over the years that followed, I had the opportunity to participate in research, planning committees and workshops for addressing Dengue fever in the Caribbean sub-region. I developed and recommended a Dengue Outbreak Prevention and Surveillance Program (DOPS) for the U.S. Virgin Islands, while serving as an Environmental Health Fellow at the U.S. Environmental Protection Agency. In addition, I participated in the Pan American Health Organization (PAHO) workgroup that elaborated the Integrated Management Strategy for Dengue Prevention and Control in the Caribbean Sub-region (IMS-Dengue). Upon returning to school, I began to fill what seemed to be an obvious gap in the literature for travel health research and imported Dengue in temperate regions, specifically the U.S.

For this dissertation, I began to investigate Dengue, as a travel issue; looking specifically at a population of travelers that are of importance based on certain characteristics for research and practice of imported travel-associated diseases. Yet, these travelers often remain neglected in prevention strategies.

Chapter 1 includes an introduction to the topic of social-behavioral health and disease emergence. Chapter 1 also provides the background research for this dissertation project. There are descriptions of two pilot studies that laid the groundwork for two subsequent ethnographic and phenomenology studies, which are the focus of the dissertation. The first pilot study was a case study of a potential visiting friends and relatives (VFR) traveler going to her country of ancestry for Trinidad Carnival. The case study revealed that more research is necessary to understand the decision-making process for compliance with MAP when the travel purpose to VFR is confounded by another travel purpose. The traveler had two travel purposes. The travel
plans were to VFR and participate in Trinidad Carnival. The second pilot study determined factors of influence on intended use of MAP in VFR travelers to Dengue-endemic regions. A survey was developed, tested and validated among travelers to Trinidad Carnival. The survey (n=75) analysis used an exploratory factor analysis (EFA), which revealed an underlying tentative intended MAP international travel behavior (IMAP-ITB) model. Additional analyses using Fisher’s exact test, Chi-squared tests for association and simple logistic regression, revealed that VFR status was not significantly associated with intended MAP, whereas level of comfort in the travel destination was significantly associated with intended use of MAP. In this regard, more research is necessary to understand differences across travel types, influences of the social and physical environment of the travel destination on actual use of MAP during travel, and the meaning of traveling to the home country as a VFR traveler.

Chapter 2 presents a review of current literature on Dengue epidemiology and travel medicine and provides a basis for identifying gaps in research. There is a discussion of Dengue as a travel health concern, and more specifically as an issue for high-risk populations of travelers in the U.S., specifically VFR travelers. The definition of VFR travelers has evolved over time in the field of travel medicine. Currently, travel health specialists use a risk assessment framework of the social determinants of health to determine risk of travel-associated diseases for VFR travelers. The current risk assessment framework, although an improvement from past definitions that focused on immigrant status, is still subject to bias and inaccuracy. The risk assessment framework is lacking for VFR travelers in its ability to account for multiple factors of influence on travel behaviors from a social-ecological perspective.

One of the most common imported diseases among travelers is Dengue. Determining the risk of acquiring Dengue must therefore include the health behaviors of mosquito avoidance
practices (MAP) because it is the only primary prevention strategy recommended to travelers for Dengue prevention. In the U.S., imported Dengue is a concern because of the potential for secondary transmission and subsequent outbreaks from infected travelers. Evidently, it is important to understand how VFR status affects travel behavior and determine factors of influence on intended and actual travel behaviors for compliance with MAP using a social-ecological framework.

Chapter 3 discusses the mixed methods approach providing detailed descriptions of the qualitative methods used in the two main studies of this dissertation. In addition, the role of this research in addressing gaps in the literature for travel medicine and Dengue is highlighted. Chapter 4 presents the results and implications of the two main qualitative studies that followed the survey research. To determine factors of influence on actual behavior during different types of travel, the study used a qualitative multi-case study of travelers to the Dengue-endemic regions of Thailand and Brazil. A cross-case content analysis between travel cohorts to Brazil and Thailand, with travelers to Trinidad Carnival (included from the pilot studies) revealed the following concepts: (A) Logistics as determinants of the international travel experiences; (B) Social Environment: Me, You and the Travel Destination; and (C) MAP: Perceptions, Space and Time. These concepts, discussed in entirety in Chapter 3, present the factors that influence actual use of MAP during international travel.

Chapter 4 also presents the results of the second qualitative study, which was an interpretive phenomenology of eight West-Indian/Caribbean American international travelers. The purpose of this second follow-up study was to understand the meaning of ‘going home’ for VFR travelers to determine influences between travel to the home country versus travel to other travel destinations on compliance with recommendations to use MAP. The phenomenology study
revealed that international travel, in general, is about the anticipated experience. Themes that defined the experience of “going home” were (1) Connectedness; (2) Control of the Travel Experience: Childhood versus Adulthood; (3) Two different experiences at home; (4) Seeing what home has to offer; and (5) There is no place like home. These themes related to compliance with MAP through risk perceptions, level of comfort or cultural familiarity and the concept of cultural embeddedness, irrespective of VFR status.

Results of the four studies combined, contributed to the development of an improved model of ‘Cultural Embeddedness and MAP’ that accounts for each level of influence within a social-ecological framework on compliance with MAP. Furthermore, the results point to the need for multi-level prevention efforts instead of solely individual level recommendations to use MAP for prevention of imported Dengue. Prevention strategies at each level of influence within a social-ecological framework would decrease risk of secondary transmission and outbreaks in the U.S. This project recommends more research on the concept of ‘Cultural Embeddedness’ for individual level prevention to facilitate improved and unbiased risk assessments for pre-travel advice. For community and policy level prevention, increased surveillance resembling the Dengue Early Warning Surveillance System (DEWSS) and fever screenings program at high-risk international airports could effectively mitigate the risk of imported Dengue. Chapter 5 discusses next steps in research and practice for the project results and discusses the controversy of VFR terminology, calling for a change in Dengue prevention strategies for international travelers.
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Additionally, I would like to thank Dr. Fermin Arguello who worked with the Centers for Disease Control and Prevention (CDC) Dengue Branch, for his assistance in developing the pilot study on MAP in travelers to Trinidad Carnival. I would also like to acknowledge the financial support received from Dean Sonia Alemagno at the Kent State University (KSU) College of Public Health and the KSU Graduate Student Senate, who both were integral parts of making the research possible. Finally, I would like to acknowledge my dissertation committee, specifically the committee Chair, Dr. Mark James for his mentorship and support in my research and career.

Koya C. Allen MS, MSPH
CHAPTER I

The Significance of Behavior in the Emergence of Dengue Fever

Introduction

The essential components for emergence or re-emergence of a pathogen are the arrival, establishment, and subsequent spread of the pathogen within a geographic space (Randolph & Rogers, 2009). Many complex systems interlink to create the conditions necessary for disease emergence or re-emergence to occur. Emerging diseases are defined as diseases caused by novel etiologic agents or as diseases that have increased in incidence over the previous two decades. Re-emerging infectious diseases have been defined as the resurgence in incidence of a known disease following a significant decline in incidence (Lederberg, Shope & Oaks, 1992). The epidemiologic complexity of systems related to disease emergence, makes it difficult to determine the consequences associated with changes in a given system and the extent to which any of the 3 essential components of emergence is possible. Moreover, emergence of vector-borne diseases includes the biological model for the cycle of transmission, in addition to interlinked systems, such as social or ecological processes, and the many factors that influence these systems (Possas, 2001; Randolph & Rogers, 2009).

Epidemiologic cycles of vector-borne diseases act as non-linear complex systems. Evidence of changes to these systems includes factors of emergence such as globalization and its effect on social and ecological processes (Possas, 2001). Furthermore, small changes to measures that may occur within the force of transmission model used to determine the capacity for maintenance and spread of a pathogen in a naïve population, results in dramatic consequences such as the emergence or re-emergence of disease in a region (Randolph & Rogers, 2009). In
order to begin understanding the complexity of vector-borne disease cycles, it is necessary to address the complexity of the systems that interlink with the disease cycle, particularly social systems and the individual behaviors that influence such networks (Possas, 2001).

The concept of social ecosystem health utilizes the paradigms of risk anticipation and application of interventions to prevent the amplification of correlated risk conditions (Harvard Working Group on New and Resurgent Diseases [HWGNRD], 1995; Levin et al., 1994; Levins & Lopez, 1999; Possas & Marques, 1994; Possas, 2001). Risk anticipation refers to the necessary capacity to predict risk conditions relative to disease emergence or re-emergence. The intersectorial interventions necessary to prevent the amplification of correlated risk conditions then points to the need for knowledge sharing and implementation of health policies that will ensure advancements in science and technology for addressing disease emergence and re-emergence (Possas, 2001). An important aspect of anticipating risk includes understanding of both the population at risk and the associated health behaviors that impact that risk. Therefore, social ecosystem health includes a social sciences perspective of social and ecological processes within the risk evaluation of a system (Possas, 2001).

Globalization affects social and ecological processes and in turn affects the epidemiology of infectious diseases. A consequence of globalization on social and ecological processes includes the emergence or re-emergence of infectious diseases (Levins, et al., 1994; Possas, 2001). Evolutionary emergence of diseases is linked to biological processes. Intrinsic biological barriers determine host-pathogen interactions, and transmission competence. Extrinsic environmental factors determine the ability for maintenance of new transmission cycles. Together, intrinsic biological barriers and extrinsic environmental factors relate to evolutionary emergence of new human pathogens (Randolph & Rogers, 2009). However, if biological
processes and environmental factors are the only factors accounted for in the transmission cycle of a pathogen, then we are ignoring the effects of globalization on social and ecological processes, and their resulting influence on disease emergence. Furthermore, since the likelihood of evolutionary emergence for new human pathogens is rare, the factors of disease emergence and re-emergence for known pathogens of importance are ecological systems (Randolph & Rogers, 2009), environmental change and human behaviors (Possas, 2001).

Understanding that an individual’s behavior is a factor of both biology and the environment (e.g., determinants of health), alongside the concept that interactions between people and the environment occur for all people simultaneously, which then affects the broader ecosystem, requires research that looks to single aberrations of individual behavior as important factors of the variation that contributes to the complexity of a system. Herein, it is argued that understanding social processes independent from its interaction with the physical environment is necessary before integrating it with what is already known about natural processes. Once complex systems are understood independently, these can be brought together to understand the larger systems at play. Our ability to apply concepts of risk anticipation to more complete models of individual processes will contribute to the broader models of disease transmission and improve understanding of how social and ecological systems interact.

In contrast to Possas (2001), the use of empirical anthropological or social-behavioral methods for representation of perceptions or cultural values of specific communities, is not more important than understanding the broader structural processes; it is essential in understanding the broader system. From this perspective, scientific research on emergence must include an understanding of social systems and social-behavioral aspects of disease transmission.
Although it is known that environmental changes and human activity are significant triggers to vector-borne disease transmission, it is virtually impossible to determine the extent to which single factors within those triggers influence the emergence or re-emergence of specific diseases (Wilder-Smith & Gubler, 2008). However, social-behavioral influences within a complex transmission cycle, and as an aspect of disease emergence is a small, but highly significant means towards achieving a fully functional biological model for vector-borne pathogens (Randolph & Rogers, 2009).

Social determinants, as a factor of a basic force of transmission model for the capacity of a pathogen to spread and be maintained within a population, are associated with health behaviors. These factors may determine the degree of risk associated with exposures and immunity or resistance to infection, resulting in changes to incidence rates within a population without changes to the strength of the biological transmission cycle (Randolph & Rogers, 2009). Estimating the epidemic threat for a mosquito-borne disease then becomes difficult when lacking data needed to quantify the relationships that exist within the biological model; especially if sociological factors can have a great impact on parameters within the model (Randolph & Rogers, 2009).

This project sought to contribute to an understanding of the social-epidemiological aspects of the vector-borne disease Dengue Fever. Specifically, the aims of this project were to
1: Identify and explain the factors that influence intended and actual travel behavior, in the context of compliance to recommendations for mosquito avoidance practices (MAP) for Dengue prevention in high-risk travelers to Dengue-endemic regions; 2: Describe the lived experience of ‘going home’ in high-risk U.S. international travelers; and 3: Develop recommendations for tools
and/or programs that can aid in decreasing the risk of imported Dengue by U.S. international travelers to endemic regions.

Despite the complexity of the re-emergence of Dengue Fever as a vector-borne disease, the main factors that have been identified in the geographic expansion of Dengue include the movement of populations or travel by individuals (Wilder-Smith & Gubler, 2008). Travel and population movement are aspects of globalization, which is an important factor of disease emergence or re-emergence because of its impact on social and ecological processes. In addressing the re-emergence of Dengue, it is important to consider human activity or behavioral factors in determinations of risk anticipation for projection of continued Dengue re-emergence in the Americas and preventative behaviors for mobile populations and travelers.

The Problem Statement

Travel health risk assessments among visiting friends and relatives (VFR) travelers are important in determining potential health threats for an international traveler. Understanding purpose of travel, planned activities, medical history, as well as potential exposures during travel will allow for a better representation of the risks (Shlim, 2010; Freedman, 2010). Research shows that VFR travelers are at increased risk for acquiring diseases endemic to the travel destination due to poor use of pre-travel preventive services, high-risk exposures during travel, and low compliance with travel health recommendations (Baggett et al., 2009; Behrens & Hendel-Patterson, 2011). The major issue with generalizing the conclusions of various studies includes the differing definitions of VFR and the way they were applied in each study. Depending on factors such as immigrant status, ethnicity, or multiple travel purposes aside from VFR, conclusions may not be generalizable to all populations of VFR travelers. In addition,
barriers to pre-travel recommendations include poor provider knowledge of travel medicine, inadequate insurance coverage, and misperceptions of disease risk among VFR travelers (Angell & Cetron, 2005; Leder et al., 2006). Poor provider knowledge relates to both a lack of knowledge for travel health issues and the provider’s perceptions of patients for travel-associated illnesses. Factors such as inadequate insurance coverage and misperceptions of disease risk among VFR travelers may be a function of culture and social determinants of health, rather than an aspect of VFR status. Lack of provider knowledge and misperceptions of risk are important factors for increased risk for Dengue acquisition and severe disease among VFR and repeat travelers to Dengue-endemic regions. Control measures such as early diagnosis and timely case management point to the importance of preventative behaviors and compliance with travel health recommendations (Wilder-Smith & Schwartz, 2005).

VFR travelers with a cultural connection and/or heritage in the travel destination may also exhibit relaxed preventive measures as a result of feeling ‘at home,’ irrespective of immigrant status. Furthermore, relaxed prevention may also be present in ‘repeat’ travelers to a travel destination, irrespective of ancestry or ethnicity associations with the travel destination. In determining travel health risk, it is necessary to acknowledge this phenomenon in VFR and repeat travelers where culture and/or ethnicity may be important factors in travel purpose, and where VFR status does not always imply cultural associations or similar ethnicity. For Dengue fever, determinations of VFR status are important in estimating risks for severe disease because although high-risk travelers have been defined as VFR travelers, the behavioral aspects of travel relative to VFR status, which makes them high-risk, have not been clearly defined in the literature. Understanding the behaviors of VFR travelers and the risk of secondary exposures to
Dengue on subsequent trips is important to thwart the increased risk of severe Dengue by focusing on compliance behaviors with recommendations during travel to endemic regions.

**Pilot Investigations**

The purpose of the pilot studies (Allen, 2011b, 2012) was to investigate Dengue risk in the context of travel behavior when culture, ethnicity and/or nationality have a direct influence on the traveler’s travel purpose and destination (Allen, 2011a, 2011b; Allen, 2012). These studies resulted in the development of an Intended MAP International Travel Behavior Model (IMAP-ITB) (Figure 1).

*Figure 1. Intended MAP International Travel Behavior Model*

The IMAP-ITB model is grounded in the Health Belief Model (Hochbaum, Rosenstock, & Kegels, 1950s), but begins to account for the complex interactions that occur at each level of
influence within a social–ecological framework to depict factors associated with intended MAP during travel (Figure 1) (Allen, 2012a). The Health Belief Model (HBM) is a health behavior theory at the individual level of influence that explains behavior based on an individual’s perceived risk, susceptibility, severity of a disease or health issue; in addition to their perceived benefits and barriers to prevention of that disease or health issue (Rimer & Glanz, 2005; Rosenstock, 1966). Constructs within the HBM are represented in the IMAP-ITB through the predictors or variables that help frame the individual’s perceptions regarding use of MAP and Dengue. The HBM as an individual level theory does not account for factors that influence behavior irrespective of perceptions. This would include aspects of the social determinants of health.

**Pilot Study #1.** The purpose of the initial pilot study was exploratory in nature and used to determine if there was a need for further research on culture and travel behavior for Dengue prevention. Lennon (2005) described Dengue issues that exist for each construct of the HBM for individuals living in Dengue-endemic areas, but this was not developed for traveler’s health (Table 1) (Lennon, 2005). In Table 1, evidence from the pilot interview has been included with some of the results from the Lennon (2005) study, to begin viewing Dengue issues in the context of traveler’s health.

**Table 1. Health Belief Model Constructs & Dengue Issues**

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<th>Perceived Susceptibility</th>
<th>Belief that one most likely will not contract Dengue (Lennon, 2005)</th>
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<td>Perceived Severity</td>
<td>Belief that Dengue is not a serious health threat (Lennon, 2005)</td>
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<tr>
<td>Perceived Barriers</td>
<td>Not enough time or forgetting about personal protection because of travel events/schedule- (Allen, 2011)</td>
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<tr>
<td>Perceived Benefits</td>
<td>One’s belief that they play a role in reducing personal risk of infection or a role in Dengue transmission in general- (Allen, 2011)</td>
</tr>
<tr>
<td>Self Efficacy (SCT)</td>
<td>Confidence to perform necessary action-Compliance to CDC guidelines for personal protection</td>
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The goal of the pilot study was to gain an understanding of the decision-making process in travelers for Dengue prevention during travel to Trinidad Carnival. The research question was ‘Does culture (and ethnicity) influence international travel behavior among VFR travelers during travelers to Trinidad Carnival?’ The participant of the qualitative pilot interview was a Trinidadian-American traveler to Trinidad for Carnival. This interview provided evidence for the need of more research regarding the decision-making process for use of MAP during international travel. Results represented the decision-making process for Dengue prevention during Trinidad Carnival specific to that traveler. Resultant themes included the following: decision to use MAP was associated with time management; prevention of infection was not a main priority; and the Carnival experience was worth the risk of Dengue infection. The participant also revealed the concept of being “called home” for the celebration. The research participant spoke as a Trinidadian discussing her country, rather than as an American traveler discussing her vacation to Trinidad. This behavior suggests an association between one’s heritage and their perceptions and beliefs relative to their culture (Allen, 2011b).

This pilot study, in addition to a literature review, suggested that further research might reveal a decision-making process in travelers for Dengue prevention during Carnival, and possible changes in risk perception and behavior in the traveler when traveling to their home country. Additionally, these results indicate the importance of understanding the intended and actual behavior of such travelers in a different context; where travel purpose is not cultural, and travel destination is to a new international destination allowing assessment of varying behavior across different travel experiences (Allen, 2011b).

Pilot Study #2. Disease risk and transmission are complex processes that are influenced by a variety of conditions within the environment, the individual’s biological background, and
the individual’s behavior (Randolph & Rogers, 2009). In order to improve understanding of the transmission cycle of Dengue in travelers, it was necessary to begin identifying factors that may influence compliance to guidelines for MAP and subsequently risk of disease acquisition (see Chapter 1).

In the second pilot study, factors associated with compliance to recommendations for MAP in travelers were identified (Allen, 2012a). A mixed methods survey (e.g., closed and open-ended questions) was developed and tested to correspond with the Precaution Adoption Process Model (PAPM) (Weinstein & Sandman, 1992), which was specifically revised for this study to correspond with Dengue issues and MAP use in travelers (Figure 2).

**Figure 2: Precaution Adoption Process Model for Dengue Prevention in International Travelers**

Survey participants (n=74) included travelers to the 2012 Carnival in the Republic of Trinidad & Tobago. The survey measured Dengue knowledge, attitudes, intent, motivation and cultural influence on planned travel behavior. Data collection was completed via snowball sampling through social media. Social media sites included Facebook, population-specific blogs (e.g. blogs associated with Trinidad Carnival), social media fan-pages specific to Trinidad Carnival groups, Trinidad radio-stations web pages, chat rooms and e-mail. Data were collected over a 1-month period preceding the dates of Trinidad Carnival 2012.
Data analysis was conducted using the statistical software SAS 9.3. Raw data from the online survey were exported into SAS 9.3 and recoded for ease of analysis. Construct validity and reliability were determined through an exploratory factor analysis (EFA), with a Cronbach alpha for instrument reliability of 0.73. Total variance explained by the factors within the EFA model was approximately 30% and the reliability of constructs used in the model ranged from 0.413 to 0.946. Table 3 presents the reliability for each construct that emerged from the EFA data analysis process, which represents the reliability of each construct within the IMAP-ITB model. Resultant constructs derived from the underlying structure in the EFA results served as the basis for the tentative IMAP-ITB model (Figure 1). Constructs in the IMAP-ITB model are knowledge, cultural embeddedness, past experiences, perceived barriers, and intent to use MAP.

Table 2. Reliability of IMAP-ITB Constructs

<table>
<thead>
<tr>
<th>Theoretical Constructs</th>
<th>Cronbach Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge</strong></td>
<td></td>
</tr>
<tr>
<td>Familiarity with Dengue symptoms</td>
<td>0.839</td>
</tr>
<tr>
<td>Familiarity with severe Dengue</td>
<td></td>
</tr>
<tr>
<td>Dengue Prevention</td>
<td></td>
</tr>
<tr>
<td>Dengue Transmission</td>
<td></td>
</tr>
<tr>
<td>Healthcare seeking behavior</td>
<td></td>
</tr>
<tr>
<td><strong>Cultural Embeddedness</strong></td>
<td>0.726</td>
</tr>
<tr>
<td>Familiarity with Trinidad</td>
<td></td>
</tr>
<tr>
<td>Annual Travel to Trinidad</td>
<td></td>
</tr>
<tr>
<td>Awareness of Dengue in Trinidad</td>
<td></td>
</tr>
<tr>
<td>Past Dengue Experiences</td>
<td></td>
</tr>
<tr>
<td><strong>Type of Travel</strong></td>
<td>0.413</td>
</tr>
<tr>
<td>Visiting Friends &amp; Relative Status</td>
<td></td>
</tr>
<tr>
<td>Length of Stay</td>
<td></td>
</tr>
<tr>
<td><strong>Past Experiences</strong></td>
<td>0.946</td>
</tr>
<tr>
<td>Past Insect Repellent use</td>
<td></td>
</tr>
<tr>
<td>Past Protective Clothing use</td>
<td></td>
</tr>
<tr>
<td>Past Insecticide use</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived Barriers</strong></td>
<td>0.766</td>
</tr>
<tr>
<td>Difficulty: International Travel</td>
<td></td>
</tr>
<tr>
<td>Difficulty: Trinidad Carnival</td>
<td></td>
</tr>
<tr>
<td><strong>Intended MAP</strong></td>
<td>0.898</td>
</tr>
<tr>
<td>Thoughts on MAP use</td>
<td></td>
</tr>
<tr>
<td>Plans to use MAP</td>
<td></td>
</tr>
<tr>
<td>Intent to pack &amp; carry</td>
<td></td>
</tr>
</tbody>
</table>
The behavioral assessment survey on MAP among international travelers to Republic of Trinidad and Tobago Carnival 2012 was developed, tested and validated in a high-risk population of travelers for Dengue fever (Allen, 2012a). Results of this survey indicated a need for an alternative approach to understanding factors that influence intended and actual MAP. In the open-ended questions asked in the Trinidad Carnival survey, participants described reasons for not getting pre-travel advice, and not using MAP, in addition to their experience with Trinidad. Participants who did not receive pre-travel advice stated that pre-travel advice is “not...
needed” or that they “had not thought about it.” Of the 41% of participants who had Dengue knowledge, they were able to accurately state symptoms of Dengue, severe Dengue, and treatments for Dengue. Participants were also knowledgeable about Dengue prevention; 45% of participants accurately reported how to prevent Dengue either as a traveler using MAP or as household and environmental prevention to decrease breeding grounds for mosquitoes. Approximately 1 in 5 (22%) participants were unsure about Dengue prevention, and 32% reported that they did not know how to prevent Dengue. Some participants reported differences in difficulty to maintain insect repellent during international travel versus during travel to Trinidad Carnival. Of the 37% of participants that reported it is, or sometimes is difficult to maintain insect repellent use during international travel, the most common reasons were remembering to put it on or forgetting to reapply. Of the 39% of participants who reported that it is difficult to maintain insect repellent use during Carnival, the most common reason for difficulty was that “so much is going on” that you forget to use. The most common reason for not using protective clothing was the temperature and it being “too hot” to wear long sleeves and long pants. For insecticides, the reason for not using varied between the smell of insecticides, availability of products and the lack of need to use both an insecticide and an insect repellent. Interestingly, in models of association between use of MAP and constructs within the IMAP-ITB model, Carnival dedication as a risk distraction, was significantly associated with lack of intent to use MAP, with a p-value of 0.025 using Fisher’s exact test and p-value of 0.032 using a simple logistic regression model. Use of MAP, however was not significantly associated with VFR status with p =0.405 in a simple logistic regression and p = 0.567 using Fisher’s exact test. In contrast, participants who reported that they feel at home in Trinidad was significantly associated with intended use of MAP (p=0.007). Those travelers who felt at home in the travel
destination were 1.5 times more likely not to use MAP. Table 5 shows the proportions, Chi-
squared or Fisher’s exact test p-values and odds ratio estimates for factors of influence on MAP.

In order to increase understanding of the differences in factors associated with intended use and
subsequently actual use of MAP, it is necessary to understand differences in types of travel
experiences and influence of VFR status on behavior during international travel.

| Independent Variable          | Proportion, % Estimate | Tests of Association, Chi-
|                             |                     | squared/ Fisher's Exact | Odds Ratio Estimate |
| VFR status                   |                      |                          |                    |
| Yes                         | 43                  | 8.51                     | 2.88 (0.240 34.462) |
| No                          | 4                   | 91.49                    |                     |
| Length of Stay               | 0.411**              |                          |                    |
| 1 - 7 days                  | 23                  | 48.94                    | 2.286 (0.559 9.366) |
| 8 -10 days                  | 14                  | 29.79                    |                     |
| 11+ days                    | 10                  | 21.28                    | 0.857 (0.161 4.554) |
| Carnival Dedication         | 0.0251*              |                          |                    |
| No                          | 12                  | 22.22                    | 10.928 (1.231 97.037) |
| Yes                         | 54                  | 77.78                    |                     |
| Knowledge                   | 0.474**              |                          |                    |
| No                          | 22                  | 40.74                    | 1.5 (0.455 5.432) |
| Yes                         | 32                  | 59.26                    |                     |
| Feel at Home                | 0.0066*              |                          |                    |
| No                          | 9                   | 18.75                    | 1.5 (1.130 1.991) |
| Yes                         | 39                  | 81.25                    |                     |
| Perceived Difficulty- International Travel | 0.414** |                          |                    |
| No                          | 33                  | 63.46                    | 0.591 (0.166 2.098) |
| Yes                         | 19                  | 36.54                    |                     |
| Perceived Difficulty- Trinidad Carnival | 0.987** |                          |                    |
| No                          | 30                  | 60                       |                     |
| Yes                         | 20                  | 40                       | 0.99 (0.279 3.506) |
| Past Experience             | 0.0012*              |                          |                    |
| No                          | 27                  | 75                       | 1.9 (1.240 2.911)  |
| Yes                         | 9                   | 25                       |                     |

* Fisher's Exact Test p-value
** Chi-squared p-value
*** Total number of observations

NOTE: Carnival dedication and feeling at home in the travel destination are aspects of cultural embeddedness and act as risk
distractions. See Chapter 5 for further discussion on cultural embeddedness.
The survey and resultant model can serve as research and practice tools to investigate factors associated with compliance to recommendations for MAP. The survey measured PAPM-Dengue stage for the participants of the study. Table 4 shows the resultant proportions of the survey participants in their respective PAPM-Dengue stages. In addition, the survey can identify the individual or population stage within the PAPM-Dengue framework for assessing likelihood for compliance with MAP guidelines. Actual travel behavior may differ from intended behavior based on influences within the social and physical environment of the traveler before and during the travel experience, so it is also necessary to view travelers across a spectrum of types of travel, in different locations to determine additional influences on actual travel behavior (Figure 3) (Allen, 2012a).

Figure 3: Influential factors on intended versus actual MAP and subsequent Dengue risk.
These two pilot studies contributed to gaps in travel medicine research by presenting factors of influence on intended MAP during international travel, and highlighted the importance of culture in decision-making processes for intended behaviors. More importantly, the pilot studies clarify the problem with VFR classifications. In the Trinidad Carnival Survey, VFR status was insignificantly associated with intended MAP behaviors. In addition, cultural familiarity or cultural embeddedness, and past experiences, which are constructs in the IMAP-ITB model, were significantly associated with lack of compliance to MAP recommendations.

In subsequent studies on international travel behavior, qualitative approaches revealed the presence and role of individual cultural influences on travel behavior, but also the overarching culture of the international traveler. These studies allowed critical analysis of the pathways of influences on travel behavior (e.g., culture, motivation, past experiences) for use of MAP. In the latter stages of the PAPM-Dengue framework, where influences on behavior are more abstract (e.g., culture and past experiences versus knowledge and perceptions), according to the tentative IMAP-ITB model, it is imperative to identify potential variables that would indicate PAPM-Dengue stage and the decision-making process for movement to latter stages. Subsequent qualitative inquiry is an important step in understanding the influences on behavior of an international traveler to identify these variables and progression to a later stage in the model because these variables may be manipulated in future interventions to achieve MAP compliance.
CHAPTER II

Literature Review: Travel Health & Dengue Fever

Dengue Epidemiology

Dengue fever virus is the most common Arbovirus in the world. Approximately 40% of the world’s population lives in areas at risk for Dengue (CDC, 2010; Domingo et al., 2009; Mohammed et al., 2010; Morens & Fauci, 2008; WHO, 1997, 2009; Wilder-Smith & Schwartz, 2005) and over 100 countries are considered endemic for Dengue virus transmission (WHO, 2010). Approximately 50-100 million cases occur each year, with 500,000 severe Dengue Hemorrhagic Fever (DHF) cases and 22,000 deaths (CDC, 2010; Domingo, Ory, Sanz, Reyes, Wichmann, 2009; Mohammed et al., 2010; Rigau-Perez et al., 1998; WHO, 1997, 2009; Wilder-Smith, 2005). The actual prevalence of disease worldwide is unknown. Prevalence rates are under-reported because of the range in symptomatology and lack of surveillance and reporting tools in developing countries (Wilder-Smith, 2012). However, it is known that the disease continues to reemerge due to globalization, increased travel, urbanization, and changing ecological factors (Gubler, 1987, 1997; Gubler & Clark, 1995; Rigau-Perez et al., 1998; WHO, 1997, 2009). In order to control Dengue, increased vigilance for outbreak surveillance and prevention is needed, as well as new tools for controlling further spread of disease (Madoff, Fisman & Kass-Hout, 2011; Racloz, Ramsey, Tong & Hu, 2012; Wilder-Smith & Gubler, 2008; Wilder-Smith et al., 2012).

There are 4 similar, but distinctly different serotypes of Dengue virus: DEN-1, DEN-2, DEN-3 and DEN-4. Transmission occurs through the bite of an infected Aedes sp. mosquito with a 4-7 day incubation period; symptoms usually last for 2-10 days (CDC, 2010; Gubler, 1987,
An infected individual can present with symptoms of varying degrees that range from being asymptomatic (e.g., no clinical presentation) to severe hemorrhagic manifestations. When symptoms are present, they are classified by 3 clinical presentations of increasing severity for infection: Classic Dengue Fever (DF), Dengue Hemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS). Classic DF patients present with rapid onset of high fever, severe headache, retro-orbital pain, and severe muscle pain. This syndrome is commonly referred to as “break-bone” fever (Gubler, 1987, 1997; Gubler & Clark, 1995; Rigau-Perez et al., 1998). Conversely, approximately 80% of primary cases in adults infected with Dengue present non-specific symptoms that are usually self-limiting. As a result, most primary infections go undiagnosed and unreported. As previously mentioned, the asymptomatic cases and cases with non-specific symptoms, result in lower reporting of incidence rates and the actual prevalence rates of Dengue worldwide are unknown. Despite the uncertainty surrounding incidence and prevalence rates of Dengue and range of symptomatology of primary cases, subsequent Dengue infections are a major concern. Infection with one serotype of Dengue confers life-long immunity to that serotype and transient immunity to the remaining 3 serotypes. However, infection with a different serotype after transient immunity is lost can result in increased severity of disease and risk of DHF, DSS or death (Chen et al., 2008; Domingo et al., 2009; Gubler, 1987, 1997; Gubler & Clark, 1995; Guzman & Kouri, 2003; Pang, Cardosa & Guzman, 2007; Rigau-Perez et al., 1998; WHO, 1997, 2009; Wilder-Smith & Schwartz, 2005).

Additional risk factors for severe disease include the length of time between Dengue infections, patient ethnicity, and patient history of chronic conditions (Guzman & Kouri, 2003). Early diagnosis and knowledge of patient history are important in determining the patient’s risk for severe disease to ensure appropriate case management during the illness. Specific guidelines for
case management of severe Dengue infections are an important factor in patient outcomes and case fatality rates (WHO, 2009). Unlike the risk factors of early diagnosis, patient history and time between Dengue infections, the risk factor of patient ethnicity for severe Dengue is primarily in reference to travel health when exposures and risk of Dengue acquisition occur during travel to endemic countries. Controversially, the type of travel in relation to the patient’s ethnicity is often a primary factor assessed when looking at patient risk (Barnett et. al, 2010).

**Dengue in the Continental United States**

Dengue in the Americas has re-emerged as a major health concern (Morens & Fauci, 2008; San Martin et.al, 2010). Travel is one of the primary causes for re-emergence of Dengue. Dengue is one of the most common travel-associated infections in returning travelers (Wilder-Smith, 2012), and is the second most common cause of febrile illness in travelers after Malaria (Mohammed et al., 2010; Wichmann & Jelinek, 2004). In addition, Dengue is a significantly under-reported disease associated with travel (Allwinn et al., 2008; Mohammed et al., 2010; Wilder-Smith & Schwartz, 2005; Wilder-Smith, 2012) due to limited surveillance (Wichmann & Jelinek, 2004), and nonspecific and self-limiting symptomatology in primary infections in adult travelers (Wilder-Smith & Schwartz, 2005; Wilder-Smith, 2012). Misdiagnosis or lack of knowledge in primary care physicians on Dengue signs and symptoms in returning travelers are also issues that lead to under-reporting (Baggett et al., 2009).

With competent mosquito vectors present in the U.S., secondary transmission of Dengue is a serious threat when viremic individuals return from travel to an endemic region. Physicians should be aware of a patient’s travel history, and of Dengue clinical presentations for accurate diagnosis of infected individuals, so that preventive measures can be carried out to minimize risk
of secondary transmission (Mohammed et al., 2010). Locally-acquired cases have occurred in Miami and Key West, Florida over the last three years; and, there were reports of three locally-acquired cases in Dade County, Miami on November 25, 2012 (Hotez, 2011; ISID, 2012). The initial occurrence of an autochthonous case was the result of secondary transmission within the household of a travel-acquired Dengue case. Secondary transmission of Dengue after a travel-acquired case followed by subsequent cases within the community of a previously Dengue-free area highlights the important role travelers can play in the force of transmission within a naïve population and potential for subsequent Dengue outbreaks.

There has also been increased reporting of imported Dengue during peak travel seasons in the U.S. to specific travel destinations (Freedman et al., 2006; Schwartz, 2008). In addition, there are increases in cases that coincide with epidemics in common travel destinations such as the Caribbean (Bregman & Slavinski, 2010). Of imported cases reported between 2006 and 2008, 43% occurred in travelers to the Caribbean (CDC, 2011). More importantly, there is evidence of increases in imported Dengue to non-endemic and temperate regions after cultural celebrations, specifically Carnival (Frank, 2004; Schioler & Macpherson, 2009). As a mass-gathering event, Carnival poses the threat for increases of imported Dengue in travelers returning to the U.S. However, poor surveillance has limited our ability to detect if this trend exists.

Another important concern is the potential increase in severe Dengue cases among travelers attending cultural celebrations such as Carnival. Frequent travel presents the risk of secondary, tertiary and quaternary Dengue exposures in frequent international travelers, which makes them high-risk for severe disease. Increases in severe Dengue infections will influence hospital costs and imported cases may cause secondary transmission of Dengue in the U.S. (Streit et al., 2011). In addition, in locations in the U.S. where immigrant populations reside and water storage
practices in the home or community are reflective of cultural practices from their home
countries, Dengue transmission may increase because of availability of vector-breeding sites.

**Travelers Health: Visiting Friends & Relatives Travelers and Dengue Prevention.**

An emerging issue in Dengue epidemiology involves travelers who are ‘visiting friends
and relatives’ (VFR) during international travel to a Dengue-endemic region (Behrens & Hendel-Patterson, 2011). Originally, the term VFR described the population of travelers whose sole
travel purpose and intent was to visit friends and relatives abroad. In the classic definition, after
adoption in the field of travel medicine, VFR travelers were typically of a different ethnicity
relative to their host country (country of departure), but of similar ethnicity to residents in the
travel destination. The travel purpose was to visit friends and relatives ‘at home’ and the travel
destination would pose an increased risk of exposure to tropical diseases (Barnett et al., 2010).
This classic definition became inadequate to capture the true population of travelers at increased
risk for travel-related health issues because it assumed that all VFR travelers were minority
immigrants living in a host country. In a proposed re-defining of the VFR terminology, Barnett
and colleagues (2010) stated that VFR travelers should represent the population of travelers
whose travel purpose is to visit friends and relatives and where there “is an epidemiologic
gradient of health risk between the two locations supported by an assessment of health
determinants (Barnett et al., 2010; p165).” Two specific changes associated with this definition
are the exclusion of immigrant status in the departure country, and the exclusion of race or
ethnicity as a means for enhancing ‘scientific rigor’ in the travel risk assessment (Barnett et al.,
2010). Behrens and colleagues (2010) provided additional evidence of the need to improve risk
assessments for VFR travelers. A new definitional framework to redefine the VFR traveler uses
the suggestions of Barnett and colleagues (2010) to assess risk by using travel purpose to VFR in
conjunction with an assessment of determinants of health, including socioeconomic status, traveler behavior, genetic or biologic attributes, and environmental exposures (Behrens et. al, 2010).

Exclusion of immigrant status is an important change that enhances capabilities of identifying at risk travelers because this eliminates the assumption that travelers of a certain ethnicity must be immigrants if traveling to an international destination, irrespective of their culture or ethnicity, to VFR. However, this research argues that exclusion of ethnicity eliminates a factor of culture and potential association with the travel destination that may diminish risk assessments. Although the traveler may not be an immigrant, cultural association or ancestry with the travel destination may be an important factor of health behaviors during travel. Baggett and colleagues (2009) studied the importance of ethnicity in United States (U.S.) residents traveling to India. In their analysis of seeking pre-travel advice and compliance to recommendations, results showed that ethnicity, in regards to travel destination, played a significant role in compliance, whereas VFR status did not. Barnett and colleagues (2010) would argue that the health determinants at the individual and societal level should capture the high-risk factors of travel to a particular destination for that individual, regardless of ethnicity. However, considerations to the significance of ethnicity for understanding the cultural perceptions that may play an important role in understanding specific travel health risks should be made. Furthermore, accurate measurement of the epidemiologic gradient of risk, within the context of ethnicity and cultural perceptions of travel health, may not be possible for the behavioral factors associated with those health risks, particularly compliance with travel health recommendations, if cultural perceptions are not included.
Compliance with Travel Health Recommendations as a Health Behavior. A primary prevention strategy for mosquito-borne diseases includes mosquito avoidance practices (MAP). This includes: use of insect repellent, spatial repellents or insecticides to treat clothing with an U.S. Environmental Protection Agency (EPA)-registered active ingredient such as DEET, Picaridin, Oil of Eucalyptus or IR3535; wearing protective clothing (light-colored, long sleeves and long pants); awareness of mosquito-biting behavior; and killing visible mosquitoes (Zielinski-Gutierrez, Writz, Nasci & Brogdon, 2011). In a knowledge, attitudes, practices (KAP) survey conducted in the New York City international airport, travelers demonstrated poor travel health knowledge, and showed that they were inadequately prepared to prevent travel-associated illnesses (Hamer & Conner, 2004). A primary risk factor for acquisition of mosquito-borne diseases during travel is lack of adherence to guidelines for use of MAP (Lobel, et al., 2001; Sagui et al., 2011). An additional concern is the behavior that sometimes exists when individuals fail to seek pre-travel consultation and health advice (Baggett et al., 2009). Certain classifications of travelers, particularly those VFR, repeat travelers and immigrant travelers or U.S. children of foreign-born parents returning to their country of origin tend to exhibit poor health-seeking behaviors for pre-travel health consultation (Baggett et al., 2009). This behavior may occur because risk perceptions for traveling home often inhibit objective thinking for health risks in the home country since home is sometimes synonymous with going to a safe and familiar place.

Studies show that protective factors for prevention of travel-associated, mosquito-borne diseases include compliance to MAP, pre-travel consultation (Provost & Soto, 2001), and access to materials for prevention (e.g., bed nets, chemoprophylaxis, repellents, window screens, air conditioning, etc.) (Lobel et al., 2001). Additionally, knowledge of disease, perceived severity of infection, and perceived susceptibility influence compliance behaviors for MAP (Sagui et al.,
Other significant factors that may also predict compliance with MAP include length of stay, age, and type of travel (Sagui et al., 2011). Short-term travel and older travelers have been significantly associated with compliant behaviors for MAP recommendations (Laver, Wetzels & Behrens, 2001; Lobel, et al., 2001; Sagui et al., 2011). In contrast, long-term travelers, VFR travel status and travelers with low-risk perception, or misperceptions of prevention methods were significantly associated with poor compliance (Baggett et al., 2009; Leder et al., 2006; Laver et al., 2001).

Understanding compliance as a health behavior would involve research that seeks to assess all of the factors surrounding disease acquisition, risk management, and risk perception to determine the potential influence on compliance behavior outcomes (Leventhal & Cameron, 1987). Interventions for improved compliance behavior of travelers should be based on theory which not only explains the health behaviors of concern, but also uses the knowledge of those predictive behaviors for achieving behavior change (Farqueharson, Noble, Barker, & Behrens, 2004). However, before any interventions for improved compliance behaviors can be developed, it is necessary to understand why compliance behaviors may or may not occur in the population of travelers under investigation, and to understand the factors which may influence compliant behaviors during travel.

Past research used the Health Belief Model (HBM) to explain compliance behaviors with MAP (Abraham, Clift & Grabowski, 1999; Provost & Soto, 2001; Sagui et al., 2011). Moreover, researchers have attempted to identify predictors and determinants of compliance to MAP based on demographics, as a means to identify areas for travel medicine interventions and public health programs to improve levels of compliance for at-risk travelers (Abraham et al., 1999; Angell & Cetron, 2005; Barnett et al., 2010; Lever et al., 2001; Provost & Soto, 2001; Sagui et al., 2011).
The goal of the present study was to further understand these factors and determine what aspects of the physical and social environment influences poor compliance behaviors to inform risk anticipation and subsequent prevention programs for imported Dengue.

In studies that did not address theoretical frameworks, study designs measured the HBM construct risk perception. Some studies utilized the Theory of Reasoned Action and the Theory of Planned Behavior to develop a more comprehensive approach to understanding compliance in travel behavior (Abraham et al., 1999; Provost & Soto, 2001). However, neither of these approaches considers a systems level concept of behavior as an aspect of the broader disease transmission cycle. Relating back to the concept of social ecosystem health and the chaos of vector-borne disease transmission cycles, the lack of a systems level concept of behavior, leads to a diminished understanding of the role behavior plays in disease emergence and maintenance within a population. The lack of a systems level concept of behavior also excludes the abstract thinking of multiple types and levels of influence on behavior, in addition to the influence of behavior on the system. It is important to understand the full spectrum of associations between the identified factors on compliance behaviors, specifically in regards to MAP (Allen, 2011a). The association between factors of compliance behaviors and the risk of Dengue infection contributes to a more complete assessment of the transmission cycle for Dengue and continued emergence in the Americas. This research focuses on creating order through understanding in a small, but significant aspect of the behavioral factors of Dengue transmission because it contributes to understanding and possibly estimating risk of Dengue emergence in the U.S.

An Approach to Understanding International Travel Behavior and Dengue Risk. The goal of this research project was to explain the determinants of travel behavior, specifically for mosquito avoidance practices (MAP), among United States (U.S.) international travelers to aid in
the development of a theoretical model to improve assessments of Dengue risk among high-risk travelers. Specifically, this project investigated the influence of culture, type of travel and travel destination on MAP when traveling to Dengue-endemic countries. The research project employed a novel approach to travel medicine and Dengue research by focusing on the social-behavioral aspects of vector-borne disease transmission in travelers. This information is important in making progress toward prevention and control of Dengue imported into non-endemic regions (Wilder-Smith et al., 2012).

This dissertation represents a synthesis of four studies; two pilot studies, which are discussed later in this chapter, and two subsequent qualitative studies, an ethnographic multi-case study and an interpretive phenomenology study. The target population was U.S. travelers of West-Indian/Caribbean descent who are familiar with travel abroad to their country of heritage, in addition to other international travel destinations. This group represents an important population at risk for severe Dengue and highlights the only means of Dengue prevention for travelers (Allen, 2012a). More research will be necessary to test the efficacy of MAPs in reducing Dengue risk in travelers; however, as the sole means for Dengue prevention, measures to understand factors of compliance with recommendations to use MAP are necessary despite uncertainties regarding efficacy.

As briefly discussed in Chapter 1, application of a social-ecological framework to research in travel medicine would improve our ability to address compliance behaviors with MAP. Recognizing Dengue emergence as a consequence of globalization highlights the need for focusing on factors of human behavior as a key component in the social and ecological processes that are linked with globalization and subsequently disease emergence. In effect, imported Dengue can only be dealt with by focusing on preventative measures taken by travelers during
travel, and through interventions for preventing Dengue establishment in the U.S. Social ecosystem health is the broader basis of applying a social-ecological perspective to understanding compliance behaviors with MAP and addressing Dengue emergence. The key concept in an ecological framework is the idea of multiple levels of influence affecting a given health behavior, in this case MAP. The levels of influence include intrapersonal (biological or psychological), interpersonal (social or cultural), community or organizational, physical environment, and public policy (Sallis, Owen & Fisher, 2008). In applying this model to research, it is possible to improve our understanding of determinants of a health behavior in complex systems. The four core principles of an ecological perspective for health behaviors are: (1) Multiple levels of factors influence health behaviors; (2) Influential factors may interact across levels; (3) Multi-level interventions are the most effective in achieving behavior change; and (4) Models need to be behavior-specific to elicit positive effects (Sallis et. al, 2008). For the health behavior MAP, understanding factors that influence behaviors at the individual level, in addition to the social and physical environment, provides a means for targeting interventions at the community and policy level for improving compliance behaviors with MAP. In addition, this framework provides a template for research in building an explanatory model specific to understanding determinants of compliance with MAP during international travel.

**Gaps in Travel Medicine and Dengue Research**

The subspecialty of travel medicine provides travel health advice, which can range from immunizations prior to travel and self-treatment of travel-associated illness, to recommendations for preventive travel health behaviors (Hill et.al, 2006). In a recent study, Wilder-Smith et al. (2012), identified the following significant gaps in Dengue and travel health research: (1) insufficient data on the magnitude and trends of importation and virus evolution over time and
by geographic origin; (2) a poor understanding of vector density, preferred breeding sites, and vectorial capacity of vectors in temperate climates that are needed for predictive models under changing climate conditions; and (3) lack of predictive models for the risk of establishment of Dengue in non-endemic regions taking into account global travel networks and climate change. Moreover, Talbot, Chen, Sanford, McCarthy and Leder (2010) reported on priorities for travel medicine research including improvements in understanding pre-travel preparations of special populations such as VFR travelers. Investigation on compliance behaviors for MAP is necessary for advancing in pre-travel interventions and safety during travel against Arboviral infections (Talbot et al., 2010).

Major gaps identified by Wilder-Smith and colleagues (2012) and research recommendations by Talbot and colleagues (2010) indicate that travel medicine research needs improved study designs to capture the full extent of traveler’s health behaviors in models for Dengue emergence. Improved research designs should capture the various stimuli at each level of influence within a social-ecological framework to understand individual characteristics, interpersonal factors, community level factors, and policy level factors that may influence the social and physical environment, and subsequently the ability to comply with MAP recommendations. Conceptually applying this framework can aid in identifying: (1) where travelers are in the decision-making process from awareness to motivation and compliance of travel health guidelines; (2) risk and protective factors of travel for the individual and societal determinants of health at the travel origin and travel destination, which may impact barriers to compliance; and (3) inclusion of intra- and inter-personal factors of personality, culture, ethnicity and beliefs that may impact perceptions of risk despite knowledge, leading to compliant or non-compliant travel behavior. Investigating the various influences on compliance behavior will
contribute to the evidence base necessary for improving interventions to achieve behavior change in travelers for prevention of mosquito-borne diseases (Allen, 2011a).

The importance of travelers in the introduction of Dengue to non-endemic areas should be a concern for all Dengue-free areas. It is necessary to develop tools to increase our capability of accurately assessing risk of Dengue infection among high-risk travelers based on health behaviors during international travel. Developing a theoretical framework for use in both research and practice may increase the ability to identify high-risk travelers, seasons and populations to guide targeted interventions to reduce risk of acquiring Dengue during travel, and subsequent importation of Dengue into Dengue-free zones.

Generating Knowledge for Travel Medicine Research & Practice

Resultant themes identified in the multi-case study and the phenomenological study informed the pathways of the IMAP-ITB model for reconstruction to an improved explanatory behavior model. In addition, qualitative constructs that appeared significant to the individual gave an indication of which factors might be more influential on the outcomes of travel behavior and could potentially act as targets in intervention approaches to provoke movement to latter stages in the PAPM-Dengue tool developed and used in pilot study 2. Results also informed recommendations for future research on types of program planning and interventions necessary prior to and after international travel. Identifying factors in compliance as well as defining the influences of culture, social environment and travel destination, offered supportive evidence for the need of multi-level prevention within a social-ecological framework, rather than solely individual prevention using MAP to address the issue of Dengue re-emergence in the U.S.
CHAPTER III

Main Qualitative Studies

The ‘Ethnic Minority Traveler’

An underlying misconception regarding the travel experiences of ethnic minority travelers extends from restricted access and utilization of healthcare to socio-economic factors that would imply the inability to travel internationally for varying travel purposes. Shah, Tanowitz and Wittner (1998) described ethnic minority travelers as a variety of heterogeneous groups. This ‘variety of heterogeneous groups’ refers to individuals who have immigrated and currently live in the United States, temporary residents ranging from students to refugees, and U.S. citizens by birth who are members of the ethnic minority population in the U.S. such as African-, Caribbean-, Hispanic/Latino- and Asian- Americans. Despite this all-encompassing definition of ethnic minorities, Shah and colleagues (1998) arguably addressed health concerns, which in recent literature, present as issues of the visiting friends and relatives (VFR) traveler. The terminology of ‘VFR traveler’, with its many conflicting definitions and applications, only leads to more questions than answers regarding who and in what capacity travel health risks exists (e.g., Allen, 2011; Angel & Cetron, 2005; Bagget et al., 2009; Barnett et al., 2010; Behrens & Hendel-Patterson, 2011). Additionally, how and why travel experiences affect health behaviors are lost in the initial assumptions of travel type and purpose.

In travel medicine, the classification of visiting friends and relatives (VFR) travelers has been widely used in different contexts. Studies have used the term VFR travelers as a categorical approach to understanding risk of disease acquisition among all travelers planning to visit friends and relatives during international travel (e.g., Angel & Cetron, 2005; Baggett et. al, 2009;
Barnett et. al, 2010; Behrens & Hendel-Patterson, 2011; Bregman & Slavinski, 2010; Leder et. al, 2006). As discussed in Chapter 1, this terminology originally assumed that the traveler is an immigrant who is traveling home to a developing country. The newly defined VFR framework eliminates ethnicity and solely uses intent to VFR and a risk assessment of determinants of health (Behrens et. al, 2010). This means that anyone who self-identifies his or her travel purpose as planning to VFR in an international travel destination is classified as a VFR traveler.

Conflicting ideas about the appropriateness of eliminating ethnicity or nationality from risk assessments discuss a lack of adequate information regarding potential risk because ethnicity or culture may provide further insight into the broader meanings specific to the cultural lens that travelers view health. The issue is that VFR travel status indicates an activity, and does not incorporate the importance of the cultural lens through which each individual traveler has when going abroad, despite the inclusion of risk acceptance as a behavioral proxy in the new VFR risk assessment.

What is deficient in current approaches to travel medicine research is a focus away from socio-demographics, and inclusion of criteria that classify individuals based on real and not perceived risk priorities (based on assumptions and stereotypes) for acquisition of tropical infections, such as Dengue, when traveling abroad. These criteria will undoubtedly allow for the importance of culture as an intricately linked aspect of decision-making for individual health behaviors and influences on societal level efforts towards specific health concerns, including but not limited to infectious disease surveillance, pre- and post-travel programs, and control of imported diseases. In addition, the inclusion of cultural factors at the level of population health within and for a community of travelers can limit the stereotypes or esoterically formed conclusions regarding the health behaviors and concerns of travelers, such as the ethnic minority
traveler, by presenting evidence for the intragroup cultural variation that exists for this population (Carey, 1993).

In the first qualitative study, the goal was to discern how differing travel types and purposes among ‘ethnic minority travelers’ can be understood more accurately by gauging the influences of international travel culture on travel behavior. Drawing from the anthropological methodologies of ethnography, a cross-case analysis of three international travel experiences identified patterns across international travel behavior. Resultant analyses situate influences on compliance with mosquito avoidance practices (MAP) for Dengue prevention with the overall international travel experience. Past research regarding compliance with MAP as recommendations for Dengue prevention in travelers, utilized pre- or post- travel quantitative surveys to determine actual use of MAP (e.g., Abraham et al., 1999; Allen, 2012; Farquharson, et al., 2004; Laver et al., 2001; Lobel et al., 2001; Sagui et al., 2011). These methods offer no validation for actual behavior and are limited by methodological issues such as recall bias and response bias by participants reporting their intended or actual use of MAP during international travel. Utilization of qualitative methods helps to delineate between motivation, intent and actual travel behavior by identifying factors that influence MAP and help to define the international travel experience.

In the second main qualitative study, the researcher investigated the role of culture on use of MAP during travel; keeping in mind that interpersonal interaction, as an aspect of the social environment during travel, may hold greater influence on actual MAP use. Phenomenology can aid in understanding why and how behavior, using MAP may differ from travel to an individual’s home country.
The categorical approach of VFR terminology aligns with the views of Greenfield (2000), where the culture of the group is considered separate from the individual (Greenfield, 2000). In contrast, Jahoda (1992) presented the perspective that human behavior is inseparable from the individual’s respective culture. Whiting (1976) describes the importance of these contrasting ideas in his work regarding sociocultural aspects of human nature. The variability that exists across behaviors within a given culture is important to acknowledge, so it is inappropriate to expect the same behaviors for individuals solely based on their placement within a certain ethnic category. This variability occurs in part because of the interpersonal interactions that influence the worldview of the individuals within a given culture. This stance arguably supports the exclusion of ethnicity as a focus for risk assessments in travel health.

However, MAP may differ for each individual based on external influences with less significant similarities specific to their membership within a cultural group. This basic understanding corresponds to the study of understanding travel behavior, specifically for MAP, because during the experience of going home for the West-Indian American traveler, the overall experience and cultural lens through which they view that experience would impact the social interactions that are significant in behavior outcomes. Despite classifications as West-Indian American, and potentially VFR, these travelers have individual lived experiences when going home that are specific to them. Relevant themes that emerge within this context are simply similarities that may exist across people within a culture. Actual behavior, as was exhibited in qualitative study 1, combines the inherent learned behaviors relevant to culture and ethnicity, with cues to action and social or physical environmental influences on that behavior. The argument here is that ethnicity should not be a category that implies a set of behaviors; rather that acknowledging the culture of these travelers would help to understand their worldview and
the influences that culture has on their behaviors. Moreover, ethnicity is an important aspect of a risk assessment because it may offer some insight to the culture of that individual.

Furthermore, in order to understand actual MAP for a traveler, it is necessary to understand how the traveler’s culture and the meaning of ‘going home’ influences the overall travel experience that will take place and influence MAP. The processes of assimilation and accommodation that occur during this type of travel, influences the overall behaviors that will occur in regards to MAP.

**Project Methods**

The overall project employed a mixed methods approach to address the project goal of explaining factors that influence travelers’ international travel behavior. Determinants of international travel behavior were investigated in the context of the social-ecological framework of multiple levels of influence on MAP, with social and physical environment as factors of actual travel behavior separate from intended travel behaviors, which are a function of intra- and interpersonal levels of influence and social determinants of health. The international travel behavior investigated was specifically the compliance with travel health recommendations to use MAP for the prevention of mosquito bites, and subsequently risk of Dengue infection in Dengue-endemic regions.

Collective results of the two pilot studies established the foundation for two qualitative studies. The subsequent two qualitative studies, discussed separately in detail, addressed the following research questions: (1) How does travel behavior differ among the same types of travelers under varying conditions where Dengue transmission is high?; and (2) What is the lived experience of ‘going home’ for U.S. international travelers? The first research question was
investigated using a cross-case analysis of three case studies, and the second question was investigated through a phenomenological study. Using concepts for building theoretical models from mixed methods approaches, a theoretical model was developed. The resultant model, discussed in detail in Chapter 5, is a result of the tentative model that emerged from the second pilot study with the use of multi-case study research and phenomenological inquiry to both inform and describe concepts within the model. Using guidelines from Eisenhardt (1989) for building theory from case study research, while using guidelines for combining methodological approaches in qualitative research for both triangulation and theory generation by Maggs-Rapport (2000) and Annells (2006), a step-wise, mixed methods approach was followed (Figure 1).

*Figure 4: Mixed Methods Approach*

It can be difficult to understand exactly how different methodological approaches support or complement each other when using ‘mixed methods’ to answer research questions. For this project, it is important to realize how the qualitative approach both complements and supports the investigations of the pilot studies used as the basis for further research. For qualitative
methodology, Annells (2006) described the triangulation of hermeneutical phenomenology with grounded theory. In her suggestions of succession, and role between two distinct modes of inquiry, she advised that grounded theory should be used in the primary phase of research followed by phenomenology. This sequence would allow for the “understandings constructed from that phase [to] beneficially broaden the inquirer’s horizon about the phenomenon” that is being researched (Annells, 2006, p59).

For this study, the use of quantitative methods replaced grounded theory to develop a model that could be enhanced by the use of concepts surrounding multi-case study research and interpretive phenomenology. The quantitative pilot study, additionally served to guide purposive sampling, and focus the directions of information gathering, and finally to suggest analytic paths. Using these concepts for priority and temporality, this project utilized qualitative and quantitative pilot approaches as an adjunct for subsequent qualitative studies (Sandelowski, 2000).

Herein, it is hypothesized that actual travel behavior may differ from intended behavior based on aspects of the social and physical environment, which dictates in part, the travel experience. It is possible that the social and physical environmental factors experienced over the course of travel will mediate or moderate the actual travel behavior outcomes, and subsequently, Dengue risk. A key aim was to ascertain the aspects of different types of travel experiences that make these unique. In addition, the aim was to increase understanding of the meaning and value of the individual traveler’s lived experiences to expose why and how those travel experiences may or may not differ.
Ethnography of International Travel: A Cross-Case Analysis

Methods for Main Qualitative Study I. In this section, the methods for the current study include an ethnographic multi-case study analyzed using a cross-case content analysis with both within-case and cross-case thematic conclusions. In ethnography, observing an individual’s behavior as it unfolds during the international travel experience could offer insight on factors that influence actual behavior regardless of behavioral intentions. In general, ethnography is a research design, which interprets meaning for shared and learned patterns of behavior, beliefs and values for a ‘culture-sharing’ group of individuals (Harris, 1968). Often, assumptions imply that a culture-sharing group must include individuals sharing the same race or ethnicity without consideration for other factors that shape personal characteristics and behaviors. In ‘Tales of the Field: On Writing Ethnography’, Van Maanen (1988) describes ethnography. Early on in his book, Van Maanen writes:

*Ethnographies are portraits of diversity in an increasingly homogeneous world. They display the intricate ways individuals and groups understand, accommodate and resist a presumably shared order...I take it as self-evident that there is much deep and divisive cultural misunderstanding and frighteningly real conflict of interest among people within our society as there is between our society and others.* (Van Maanen, 1988; p. xviii)

In applying this quote to the context of this study and current concerns for travel health research, issues exist in how the ethnic minority traveler is defined, and what that definition means for stereotypes of expected travel experiences and health behaviors. With globalization, the ‘culture-sharing group’ in some respects includes all people everywhere; travel health faces the issues
that emerge from an ‘increasingly homogenous world’ with every vacation, business trip, or excursion planned. In addition, the cultural misunderstanding that exists is a result of assumptions and stereotypes that linger and hide the true issues regarding factors of influence for international travel behavior within a population of travelers that has considerable intragroup variation. It is important to consider culture as more than race or ethnicity. Although this factor plays a significant role in culture because of societal emphasis on race and ethnicity, particularly in the United States, it is imperative that we consider the remaining components of culture that influence behavior. These experiences, intra-personal characteristics, and interactions occur over the course of a lifetime and shape individual behaviors, which then influence community and societal attentions.

Ethnographic studies are often based on the concepts of symbolic interactionism, which provides a basis for understanding the realities that exist for the influences of social environment on human behavior (Denzin, 1978). As a basis, interactionism acknowledges the capability of individuals to generate thoughts and orient their behavior towards interpreted meanings of symbols or objects. Behaviors within the realm of interactionism are those that are routinely organized and those that use interpretation for active construction (Denzin, 1969; see Blumer, 1966). In using participant-observation data collection strategies for ethnographic research, and rooting those observations within the settings of inquiry, allowed for determining if the meaning attached to social situations are influential on subsequent behaviors. In addition, immersion of the researcher into the social settings of the behaviors under investigation allows for both the interpretation of individual behaviors and interpersonal interactions, as well as acknowledgement of any potential researcher bias (Denzin, 1969). In participant-observation, the advantage is to
the researcher’s ability to openly collect data; however, the researcher must keep in mind potential bias to behaviors from interacting with participants as the researcher.

**Research Purpose & Research Questions.** The purpose of this study was to identify and describe the factors that may influence intended and actual international travel behaviors within the context of compliance to recommendations to use MAP when high-risk travelers visit Dengue-endemic regions. Three research questions guided this phase of the research: (1) How does international travel behavior vary for high-risk travelers to different travel destinations?; (2) What aspects of different types of travel or travel purpose make each travel experience unique?; and (3) What potential influences on the use of MAP are present over the course of the international travel experience? Each of these questions helped guide field observations and situate the results of the data analysis process into the context of the research focus.

**Selection and Description of Travel Cohorts.** For this study, three travel experiences provided accounts for data collection. For the first study site, Republic of Trinidad & Tobago, selection was because of the importance of documenting travel to a cultural celebration relevant to the target population of this study, West-Indian/Caribbean-American international travelers. In addition, this location and celebration was the site and population of travelers surveyed in the pilot studies discussed in Chapter 2. The following two travel cohorts were both convenience samples of travelers to significant Dengue-endemic regions, Brazil and Thailand, for varying travel purposes and types of travel experiences.

The first travel cohort included travelers attending Trinidad Carnival 2012. The travelers in this group were friends and/or relatives, all travelers were of West-Indian/Caribbean descent, ranging from ages 26-34. Members of this travel group were variable (2-10 people) based on
travel activities and varying length of stay for each traveler. In addition, the travelers were part of the broader population of individuals under observation who were traveling to Port of Spain, Trinidad for Carnival. The travel experience occurred from February 15-24, 2012, and included a range of travel activities specific to the nature of the travel purpose (e.g., fetes, shows, competitions, events, parades, etc.). Many of the travelers had visited Trinidad previously during Carnival, to visit friends and relatives or had lived in Trinidad, but there were also some first time travelers to Trinidad and to Carnival.

The second travel cohort included members of a travel group to Salvador, Bahia, Brazil. This group of travelers attended a conference on spirituality, health and well-being. The conference preceded a cultural tour to experience Bahia. There were approximately 75-80 travelers, ranging from 5-70+ years old within the travel group. Additionally, local Brazilians participated in the conference. Travelers were of a variety of races/ethnicities including West-Indian/Caribbean-Americans, Caucasians, Brazilian-Americans, African-American and mixed races or ethnicities. The travel group was majority females and majority West-Indian/Caribbean Americans and African-Americans. The travel experience occurred from August 6-20, 2012, and included pre-planned activities with a virtually stable travel group composition. The majority of the travel group included first-time travelers to Bahia, Brazil. Some travelers had visited Brazil in the past for business, pleasure and/or to visit friends and relatives.

The third travel cohort included a small group of travelers to Thailand. This group of travelers went on a tour of Thailand from Bangkok to the Golden Triangle as a leisure trip and birthday celebration for several members of the group. Not all of the travelers were acquainted prior to this trip, however some were friends, relatives or had traveled together internationally in the past. There were 14 travelers ranging from 24-55+ years old and all of the travelers were
West-Indian/Caribbean American, African-American or Hispanic. The travel group was also majority females and it was the first travel experience to Thailand for all of the travelers. The trip occurred from November 1-12, 2012, and included pre-planned activities with some variability in participants for optional tours and leisure time.

**Data Collection.** During each travel experience, the researcher acted as a participant-observer. The researcher participated in all travel activities and maintained a journal of the travel experience. In the field, the researcher kept a journal of observations depending on the appropriateness of taking notes in a given situation, otherwise there was a reflective entry at days end. Unstructured interviews with participants provoked by observations or activities offered individual traveler’s perspectives regarding behaviors using MAP. The researcher used a field guide (see Appendix B-Tool #1) as a template to focus observations relative to the research questions and purpose for this study. However, in some cases field notes were a detailed journal of events and activities, with subjective thoughts of the researcher and thick descriptions of settings and content to present a context for later analysis. Field notes were kept daily of observations regarding all aspects of travel behavior to better understand the culture of the travel group as a whole, and its participants as individual travelers with a specific focus on influences on MAP and behavior. Use of field notes allows an accurate depiction of travel behavior over the course of the travel experience, in addition to acknowledging immediate perceptions and thoughts of the researcher. In addition to field notes of observations and unstructured interviews, the researcher collected ‘artifacts’ such as schedules, brochures, maps, etc. that were given to travelers, and maintained a photo journal of daily events and activities.

The data collected from observations, unstructured interviews, photos and artifacts were analyzed using content analysis methods to identify factors of influence on actual travel behavior
during different types of travel experiences. Using the inductive approach of conventional content analysis allows for the emergence of categorical themes from the data. In addition, each travel cohort acts as an individual case used for a within-case analysis that precedes the cross-case analysis using all three travel experiences. This approach allows for the emergence of patterns and themes for each case separately, and a later comparison of intergroup differences across cases (Eisenhardt, 1989). Additionally, this method provides a basis for replication logic (Yin, 1984) using case-study data for validity testing which will contribute to the refinement of the IMAP-ITB model by applying the results of this cross-case analysis towards an improved behavior model.

**Data Analysis.** Content analysis is systematic and objective and allows for the use of shared meanings in describing a given phenomenon (Cavanagh, 1997; Elo & Kynigas, 2008; Krippendorff, 1980; Downe-Wamboldt, 1992; Sandelowski, 1995). Use of this method as a data analysis strategy revealed categories or concepts appropriate for describing travel experiences, and provided knowledge or insight for understanding associated behaviors. Data analysis included the organization and transcription of hand-written field notes followed by open coding, concept generation and the abstraction process (Elo & Kynigas, 2008). This type of interpretive analysis is iterative, and inductive. It utilizes the processes of de-contextualization and re-contextualization to reduce the data to a set of concepts in which final ‘working hypotheses’ can be drawn (Starks & Trinidad, 2007; see Ayres, Kavanaugh & Knafl, 2003; Morse & Field, 1999). After conducting this analysis on the data for each travel cohort separately, the cross-case analysis identified similarities and differences across pairs of cases. A second abstraction process allowed for the emergence of broader concepts present across all three travel cohorts. Utilizing this cross-case pattern approach for analysis forces the researcher to move past initial
impressions of similarities and differences across cases and apply a structured approach to the analysis process. This strategy also increases accuracy and reliability of results (Eisenhardt, 1989).

Specifically, the field notes for each travel cohort were transcribed to collate hand-written notes into a document conducive to the analysis phase. The field notes, as described above, constituted the records of the field observations conducted in a naturalistic paradigm (see Appendix B- Tool #1) and unstructured interviews that occurred with travelers over the course of the travel experience. The researcher used memoing to record ideas and notes while reading the field notes. After getting a sense of the travel experience as a whole, the researcher analyzed the data using open coding. Codes were developed using phrases that described the content or verbatim terms used in field observations data. Codes were then transported to a new document and reviewed for concept generation to create subcategories of codes that naturally grouped together. New concept names were developed from codes to incorporate the full scope of the content included. Abstraction of subcategories allowed for broader themes to emerge. Data for each travel cohort or case were subjected to the abstraction process. A final cross-case analysis of the categories that emerged for each case went through a second abstraction process that led to the final concepts discussed entitlement with phrases that describe the content within.

Phenomenological Analysis of ‘Going Home’ in West Indian American Travelers

Methods for Main Qualitative Study II. A phenomenological investigative approach provides a means to understand the meaning of the lived experience of traveling home. An existential-phenomenological model (von Eckartsberg, 1998) focuses this study in the understanding and describing of the human experience. The thematic structure of a lived
experience then describes the phenomena in question. Rather than studying behavior that results from experimental situations, past experiences, in ‘specific ecologically significant situations,’ reflect the participant’s worldview through a naturalistic paradigm (Christofi & Thompson, 2007).

**Data Collection.** In order to meet the aim of describing the lived experience of the high-risk U.S. international traveler, and following phenomenological research methods, this study used semi-structured, qualitative interviews (Creswell, Hanson, Plano & Morales, 2007; Starks & Trinidad, 2007). Individual interviews determined in what state; authentically, inauthentically or undifferentiated, as described by Heidegger, each participant exists to better understand the meaning of their lived travel experiences from their standpoint or worldview (Conroy, 2003; see Chapter 2). Inquiry on the experience of going home and going to other destinations allowed participants to describe both types of travel so that the analyses could delineate the differences, if or when present, between going home and visiting another international destination. The investigator used purposive sampling to identify and recruit participants who met the criteria for this study. Purposive sampling is the most important kind of non-probability sampling for identifying primary interview participants according to Welman and Kruger (1999) because application of the researcher’s experience and results of previous inquiry contribute to the deliberate acquisition of a representative sample of the target population for the respective study. Purposive sampling can be limiting because it decreases the generalizability of results, however, for this study purposive sampling was appropriate to ensure access to participants that fit the selection criteria. The researcher selected a sample based on judgment of appropriate participants and the research purpose to ensure a sample of participants that could provide relevant experiences (Groenwald, 2004). Inclusion criteria for research participants were as follows: (1)
Adult currently living in the U.S.; (2) West Indian American (of Caribbean or West-Indian descent including islands of the Caribbean and Lesser Antilles); and (3) traveled to their home country or country of heritage.

Recommendations for sample size in phenomenological methods range from 1-25 participants (Starks & Trinidad, 2007; Creswell et al., 2007). There were expectations for approximately 6 to 10 interview participants, as suggested by Starks & Trinidad (2007); however, based on the concurrent analyses, interviews stopped once data reached saturation. The sampling frame for participants included those individuals who had participated in the pilot studies or in the three travel cohorts used in the cross-case analysis discussed in chapter 3. This ensured that participants not only met the inclusion criteria, but also met the needs of addressing the research aims in this study and corresponded to the target population of U.S. West-Indian/Caribbean travelers. This also provided consistency in the data when drawing comparisons across responses and contexts in which participants have responded to apply to the main studies.

Recruitment for the interviews used personal E-mail addresses and social media to contact participants from the travel cohorts and the Trinidad Carnival survey for participation in this study. The email included details about the study and an attachment of the informed consent documents. The social media E-mail also included the details about the study, but requested that individuals contact the researcher for more information and the consent documents. Scheduling of interviews was on a first-come, first-served basis for the individuals who responded with an interest in participating. Data saturation occurred after five interviews and interviewing stopped after the eighth interview. Five interviews were audio-recorded with the participants’ consent. Two interviews took place by phone and one interview took place over social media. These three
interviews were not audio-recorded since they were not in-person. During the in-person interviews and the social media interview, the researcher wrote post-interview field notes to record initial thoughts and details about the interview. During the phone interviews, the researcher took in depth field notes during the interview and wrote post-interview field notes summarizing initial thoughts. Interviews followed a semi-structured format using an interview guide as needed, but allowed for narrative responses from participants using probe questions to get further information after certain responses. A review and revision of the interview guide took place before each interview, taking into consideration the participant’s background for home country if necessary, to make appropriate changes to wording of questions (e.g., specifying country of heritage, differences in travel history and types of travel, etc.) (See Appendix B, Tool #2).

**Data Analysis.** Each audio recording was reviewed and transcribed prior to its analysis. Data analyses followed the recommended process for interpretive phenomenology. The general analysis process was carried out in a series of phases concurrent to data collection to ensure the maintenance of an iterative process. Interpretive phenomenology is comprised of three distinctive stages: fore-understanding, interrogation, and reflection (Maggs-Rapport, 2000). Data analysis incorporated the latter two stages, and served to compare budding themes across and within groups to present commonalities and shared concepts (Maggs-Rapport, 2000; see Morrison, 1992). The three phases of phenomenological data analyses described by Lanigan (1988) are (1) description, (2) data reduction, and (3) interpretation. The description phase offers the researcher a means for better understanding the data. Review of the narrative responses helps to understand the phenomenon in question. The reduction phase reveals the conceptual perspective. Themes are yielded from the verbatim statements captured by the participants and
are juxtaposed with the inference and interpretations of the researcher. The final phase of interpretation includes the hermeneutic analysis process of viewing the verbatim statements and themes collectively as a whole. This provides the global meaning of the phenomenon as intended by the participant and interpreted by the researcher. The 3 phases follow the basic systematic process for coding data as presented by Creswell (1997) (see Starks & Trinidad, 2007).

As Keen (1975) expressed, phenomenological analysis is an approach with a set of goals that cannot be reduced to a simple step-by-step set of instructions. In an effort to stay true to the phenomenon, while providing some guidance for analysis, Hycner (1985) provides tangible guidelines for analysis of interview transcripts. Data analysis for this study followed these guidelines, keeping in mind the broader Lanigan (1988) phases of description, data reduction, and interpretation. After transcription of each interview, the researcher read the transcript memoing presuppositions, with an effort, but not expectation of ‘pure objectivity’ prior to beginning the reduction phase (Hycner, 1985). Rather, memoing of presuppositions was a means to state and acknowledge subjective beliefs for “bracketing” from analyses (Groenewald, 2004; see Miles and Huberman, 1984). Upon reading the entire transcript to gain a collective sense of the whole interview, units were delineated for a general meaning from the verbatim statements of the participant. The next step included delineating units of meaning relevant to the research question from the units of general meaning in the context of the phenomenon under investigation. Where relevant, the researcher noted paralinguistic cues and common use of phrases or words for significance to that individual’s meanings. Clustering of statements to present relevant meanings then led to overarching themes. A summarizing view of the themes of the interview revealed the experience of that individual. If additional questions or an incomplete view seemed apparent, the researcher contacted the participant to ask additional questions. Final
contextualization of themes across all interviews explains the broader themes and notes that varieties exist across participants (Hycner, 1985).

**How does this fill a gap in travel medicine research?**

In order to expand on the IMAP-ITB model, taking into account the potential social and physical environmental factors that influence actual international travel behavior, it was necessary to use qualitative inquiry. Qualitative methods contributed to defining the existing constructs, and identified additional variables to reveal an extended model. Application of the social-ecological framework and observations of actual MAP during travel identified additional variables and aspects of the constructs within the IMAP-ITB model. In addition, field observations of the social and physical environment defined constructs because observing factors of influence on actual MAP provided additional context for explaining constructs within the IMAP-ITB. Use of within-case and cross-case analysis in a multi-case study approach was the strategy employed in this project to contribute to the expansion of the IMAP-ITB model. The new model, discussed later, presents influences on compliance behaviors in an explanatory model that, with further research, can lead to the development of predictive models. A predictive model of imported Dengue to non-endemic regions was listed as a priority for travel medicine research by Wilder-Smith and colleagues (2012).

The Heidegger philosophy used in the interpretive phenomenology study helped to make apparent the importance of understanding our differences in behavior across different experiences. In new or different travel experiences, changes to actual behavior were a result of additional influences and were identified by interpreting meaning of the lived experiences as told by the travelers themselves. In addition, the way meaning was placed and the way in which we
engage with and in the world were analogous with the example of influence of past and present experiences on resultant MAP behavior. For understanding the meaning of going home versus to a new or different international travel destination, an interpretive phenomenological approach further defined the VFR travel experience and contributed to the knowledge base for understanding special populations as suggested by Talbot et al. (2010).
CHAPTER IV

Implications for Actual Influences on MAP & the Meaning of VFR Travel

Results and Interpretations of Main Qualitative Study I

The following section presents descriptions of each travel experience including specific travel events using interpretative narratives with interlaced excerpts from field notes and authentic citations. The narratives provide detailed descriptions of each travel experience and resultant thematic concepts that emerged for within-case analysis. Each case result includes two components: a description of the travel cohort; and emergent themes for that cohort. The categorical themes are stated for the travel cohort, followed by interpretations for each category. The discussion section includes the emergent themes of the cross-case analysis. For a detailed summary of the field experience and descriptive pictures for each travel cohort, please refer to the photo-journal in Supplement 1 entitled ‘Cultural Embeddedness & the International Traveler: Perceptions from the Field.’

Travel Cohort #1: Trinidad Carnival 2012

Description of Travel Cohort #1. Trinidad Carnival is an annual celebration that occurs as a culmination to the Carnival season. The season coincides with the Roman Catholic calendar beginning after the Epiphany and ending with Ash Wednesday or the commencement of the Lenten season. During this season, various events take place including, fetes, competitions, shows and other related activities (see Appendix C- Artifact #1). Travelers usually visit in excess for the culminating events over the last 1-2 weeks of the Carnival season. A fete, defined as an elaborate festival or party, in Trinidad may have thousands of attendees. Early in the season, fetes occur on weekends, but by the culminating week of the Carnival season, fetes occur every
day, with some occurring morning or midday. Fetes range from cooler fetes, where you can bring your own cooler full of drinks, to all-inclusive fetes, which provide all-you-can eat food and beverages. Some fetes are more elaborate than others, boasting live entertainment from the hottest Soca artists, and top brand and reserve labels of local and imported alcoholic beverages. Traditional competitions and displays occur during the final week of festivities including, but not limited to Soca Monarch competition, Panorama Finals, Dimanche Gras and Monday night mas. The music of the season is Soca, Calypso and Pan, which sets the mood for the ensuing excitement that comes with the final festivities.

The final festivities begin with Jouvert, a late night street parade of oil, mud, paint and powder, which occurs throughout the town from 2 AM and lasts well into early Carnival Monday morning around 8 AM. The culminating parade of the bands occurs on Carnival Monday and Carnival Tuesday. This expansive celebration extends throughout the city and surrounding areas with bands ranging in size and presentation. For Carnival Monday and Tuesday, depending on the band you play with the size can range from 50-5000 participants, known as masqueraders. For example, Island People Mas is a large band with more than 10 sections presenting Carnival costumes from various designers and several thousand masqueraders. This particular band followed the same parade route both days parading through the city of Port of Spain, making its way to the main Savannah stage, and a ‘last lap’ through St. James and across the highway with start and finish at the Hasley Crawford National Stadium. Masqueraders, despite fatigue from feting for much of the previous week, enjoy playing mas in their ornate, and often very expensive, Carnival costumes with the goal of displaying themselves for spectators and the media with their band on the big Savannah stage.
Travel Cohort #1: Emergent Themes. Categories that resulted from the analysis of field data were: (1) Cultural familiarity with the travel destination is an aspect of both heritage and cultural assimilation; (2) Type of travel and social environmental factors of travel activities are important factors associated with health risks; and (3) Perceptions and influences for use of MAP; specifically use, misuse and misconceptions for need and safety.

Category 1: Cultural familiarity with the travel destination is an aspect of both heritage and cultural assimilation. Category 1 relates to the concept of ‘Cultural Embeddedness’ (described in detail later) in the travel destination. Travelers identified themselves with their Trinidadian heritage or by discovering similarities between their culture and that of Trinidad leading to a level of familiarity and often assimilation to certain aspects of the Trinidadian culture. Different travelers who have migrated to other parts of the world mentioned making the trip to Trinidad each year for Carnival. One self-identified Trinidadian woman, currently living in New York, stated that she “moved to America in ’74, but comes down for Carnival every year to get away from the cold. (Trinidad Field Notes, Day 1)” Despite immigrating to America a long time ago, her culture and familiarity with Trinidad had not altered. On another occasion, the familiarity and comfort with Trinidad was evident in a group of travelers after the Sunnyside Up breakfast fete. Despite several of the travelers being first time travelers to Trinidad and Carnival, they walked back to the house of another traveler’s parent for Sunday lunch, which was a home-cooked spread of local cuisine. This was an example of cultural assimilation because there were some similarities to the local cuisine of their respective cultures. The travelers could assimilate to small differences that were evident in types of food and activities because of other cultural familiarities that contributed to level of comfort. In addition, exposure to Trinidadian culture in the United States made this travel experience more familiar than foreign. The home was a
temporary residence expressly for the Carnival season; however, the travelers settled in as though it was for the long term.

*Category 2 & 3: Type of travel and social environmental factors of travel activities;* Perceptions of Influences on MAP. Category 2 relates to the factors associated with the social environment, such as social interactions and travel activities. There were influences from the type of travel that facilitated the type of travel activities and social interactions that occurred. Travel to Trinidad during the Carnival season means exposure to activities and people that would be different during another time of year. This theme held an important linkage with Category 3, which relates to perceptions surrounding use of MAP. An example of this linkage is evident in the description of Jouvert in the field notes.

“This year jouvert had mud, oil and paint. We used huge buckets and spread mud and paint through the band. We met up with ... the rest of the group at jouvert which was nice. We asked some of the girls if they put on repellent and they said “No, it’s not necessary because the mud and paint on our skin protects us from the bites.” No one was wearing protective clothing. The band gave out tank tops and t-shirts for us to wear and everyone had on shorts. (Trinidad Field Notes, Day 5)”

Many of the participants offered perspectives about why they do or do not need to use insect repellent. Sometimes this opinion was related to heritage; for example, a participant mentioned that she had not been using insect repellent during her stay, but did have a mosquito bite that was bothering her. To paraphrase her response to my inquiry, she said, “No, I don’t usually need it. But, I must need it now; my blood must taste different or something now that I don’t live here
anymore why I’m getting bit! (Trinidad Field Notes, Day 8)” On another occasion, at a fete, when a participant was asked about wearing insect repellent, he laughed heartily and said, “No! I don’t need that stuff! The mosquitoes don’t like me! (Trinidad Field Notes, Day 2)”

Aside from the perceptions which surrounded MAP, in many cases the physical environment suggested that it was necessary. Some of the fetes occur in residential areas, where Dengue risk is dependent on vector control activities in the area. Sunnyside Up breakfast fete is an example; it occurs in a residential area from before sunrise to midday. This is an important factor because of feeding time for Aedes species mosquitoes. At one point during the fete, a participant complained that things were biting her ankles and when asked if she put on insect repellent, she said she forgot. On a separate occasion, playing mas on Carnival Tuesday, a participant said that it was not necessary to wear insect repellent; however, we passed through an urban area called St. James which has a street named ‘Dengue St.’ The area had what was described in the field notes as “ample breeding grounds from garbage from Carnival. (Trinidad Field Notes, Day 7)”

Travel Cohort #2: Salvador, Bahia, Brazil 2012.

Description of Travel Cohort #2. A cultural arts group based in New York City organized the trip to Bahia for the ‘Global Axe Diasporic Cultural Conference and Tour.’ The conference portion of the trip took place from Tuesday August 7 through Saturday August 11, 2012. The conference included 33 workshops across 12 tracks, including arts, education, social justice, civic engagement, social media, digital strategies, organizational capacity building, tradition, family reawakening, health/ wellness, and economic development. Opening and closing receptions were held at Espaco Cultural da Barroquinha. The first 2 days of the
conference were at Escola da Danca of the Federal University of Bahia. On day three the conference moved to Ile Aye Centro Cultural Senzala do Barra Preto, and on day four of the conference, the sessions took place at the Faculdade D. Pedro II, Unidade Carlos Prates. Special guest speakers from the U.S. and Brazil were present, in addition to a keynote address from a Nigerian princess who is a scholar in traditional practices and African studies. The tour portion of the trip included workshops, such as Brazilian textiles, sacred foods, Afro-Brazilian percussion, and cultural school site visits. Additional tours and activities included a visit to Projecto Tamar, Igraja do Bonfim, Balet Folorico da Bahia, Terreiros, and the market place.

The group traveled as two separate groups to Bahia. Some participants had layovers in Rio de Janeiro and others in Sao Paulo. Additionally, not all of the travelers remained for the entire conference and tour. During the conference portion of the trip in the first week, guests stayed at the Monte Pascoal Praia Hotel. During week two, the group moved to the Mecure Salvador Rio Vermelho Hotel (see Appendix C- Artifacts 2 & 3).

**Travel Cohort #2: Emergent Themes.** Concepts that resulted from analysis of field data were as follows: (4) Intra- and inter-personal influences on social interactions; (5) Type of travel and travel destination directly influence the determinants of the international travel experience; (6) Factors of influence for actual MAP travel behavior; (7) Discovering who you are and where you are; and (8) Underlying effort to acquire and share knowledge.

**Category 4: Intra- and inter-personal influences on social interaction.** Category 4 reflected the role of intrapersonal characteristics and interpersonal interactions on travel behavior and the overall travel experience. There was an underlying importance and need for acceptance and social interactions for building relationships among each other within the travel group and
with locals. How others perceived you and how you perceived others based on characteristics, previous interactions and assumptions determined communication and behavior. “The young stay with the young, old with old…and the other…travelers seem to be pairing up or creating groups… (Brazil Field Notes, p3)" The basic dynamics of bonding and developing friendships were evident. Travelers sought to find similarities in culture among each other, in addition to spending free time together to become better acquainted. The larger group broke into smaller groups based on these interactions.

...there already exists a certain amount of cliques within the group whether from the pre-travel sessions or just general knowing each other and being friends before the trip. Some were clearly more sociable than others, more well-traveled than others and simply just more mannerly than others; but that’s typical in any group period...some stayed together and others wandered on their own...when another traveler discovers a similar heritage, they are friendlier. So when other Trinis realize I’m Trini their tone, attitude and personality become noticeably more pleasant around me...there were others who searched for other travelers with common lifestyles to befriend and create that comfy environment. (Brazil Field Notes, p2)

The other aspect of social interactions related to the importance of the need and ability to communicate. Language was a significant barrier; however, the “universal language of kindness” using gestures, and the silent communication of body language fulfilled the need to connect with each other and build relationships when language capabilities did not exist. In some ways, this influenced a motivation to try harder to accomplish basic communication skills by any means.
“People were friendly and seemed amused that we were trying so hard to speak the language. (Brazil Field Notes, p3)” Miscommunication was another aspect of the importance to understand each other because of how easy it is to misinterpret each other when translating languages. This is where the silent communication and motivation to try harder become apparent. For example, after a discrepancy with a restaurant bill, miscommunication led to a local and traveler offending one another.

...did an okay job trying to communicate with the waitress, but it was hard. Between the phrasebook, gestures, pointing and repetition [they] got through to each other. But to leave...couldn’t communicate to say she got the wrong change back nor could the check girl communicate to say that there was extra cost for packing a to-go box...the waitress...had to come back and explain because... [they] had gotten into a groove of broken language and conversation, but with understanding...simply miscommunication and both...felt offended by each other because it was like calling each other liars and taking advantage.

(Brazil Field Notes, p14)

Category 5: Type of travel and travel destination directly influence the determinants of the international travel experience. Category 5 referred to the type of travel and specific travel destination as determinants of the travel experience. Certain levels of preparedness for travel were dependent in part on the individual and in part on the group. As group travel, the conference and tour attendees had access to pre-travel advice and preparations such as information sessions, language classes and a packing list (see Appendix C- Artifacts 2 & 3). In addition, the type of travel was influential over the travel activities. This included pre-planned travel activities such as workshops and conference sessions. This corresponds to category 4
because the travel purpose, a conference followed by a tour, influenced the social interaction throughout the travel experience.

The group dynamics have gotten weird…it’s a little more obvious to see who isn’t really interested in friendship or even acquaintance and simply wanted to network at the conference. There’s some competition for attention and hostility between women regarding husbands. It’s like the group went from conference professional show to reality TV! (Brazil Field Notes, p26)

Variation and changes in the actual travel activities were also important because it determined the presence of physical environmental health risks. For example, during the conference we spent much of the day indoors at the university or Ile Aye house, in comparison to during the tour where there were walking tours through museums, town or the community. This is important because the physical environmental risks varied from overall health risks specific to the travel destination such as water sanitation concerns, to access to facilities for toilet, water, or food.

We went to the bathroom and the travelers’ kids were waiting to use the bathroom and were complaining because the toilets didn’t all flush. There was also no soap in the bathroom. I wanted water to drink, but unlike at the university they didn’t have bottled water. The lady told me to go to the store up the street to buy one.

(Brazil Field Notes, p19)

Location and activities were also relative to the presence and likelihood of contact with mosquitoes. There were mosquitoes both indoors and outdoors and risk would be a function of vector control practices in the area, and the use of measures such as window screens and air
conditioning. For example, there was air conditioning at the university during the conference but not at Ile Aye, although there were mosquitoes observed indoors at both locations.

There’s a mosquito flying around my head... [Bob] is sitting behind me and said “I guess all that bug spray isn’t working LOL!” [Sue] said look up to see it, but when I put my head back or forward the mosquito moved with me. I went to the bathroom to see if the mosquito would follow me and it did! And, when I got to the bathroom I picked up two more! I swatted them away from my hair and put my arm near them, but it didn’t land on me so I guess my repellent is working fine. The mosquitoes were light brown so I think they were Culex. They seemed to follow me back and flew over others hair too; mostly female. [Bob] made a joke [that] the mosquitoes see me as the enemy and prob[ably] have posters in standing water all over the city to get me. And he said “I’m not wearing repellent and none are bothering me!” then laughed hysterically. (Brazil Field Notes, p20)

Category 6: Factors of influence for actual MAP travel behavior. The physical environmental factors and determinants of the travel experience in Category 5 interlaces with Category 6 by referring to the apparent factors of influence for actual use of MAP. For example, the presence of mosquitoes and observing others use of MAP may have influenced actual travel behavior. Category 6 offered some distinction between intended versus actual travel behavior using MAP. Intended behavior encompassed the individual traveler’s risk perception for insect bites, as well as past experiences using MAP during international travel or with travel illnesses. More generally, knowledge of travel-associated illnesses influenced all travel-related preventive health behaviors including water consumption or use of MAP.
Then he was saying [that] he didn’t put on any repellent today… he brought it with him to travel, but hasn’t worn any because he didn’t think it would be an issue. He said he went to Africa before and took Malaria pills and wore repellent, but figures if he can make it through Africa without getting sick, then he’ll be okay here. (Brazil Field Notes, p12)

...went on to talk about how she was feeling sick at some point after getting ice in a drink...later in the trip [she] forgot to mention no ice and someone got her a drink and then her stomach turned...not paying attention she forgot not to use the sink water to brush her teeth. (Brazil Field Notes, p27)

Actual travel behavior seemed to correspond to initial intent, but there were also obvious cues to action including observing others use insect repellent, which then triggered use. Many of the travelers shared and discussed insect repellent, in addition to sharing knowledge regarding risk. This may have enforced the actual use of MAP by some travelers.

...and her family put on insect repellent before going in the tierro. Then, because [Lin] saw, she remembered that she didn’t put any on and asked if anyone had any. So [Katie], who was like a walking public health intervention, gave her some ‘Skin so Soft’ since she always carried it in her bag. (Brazil Field Notes, p27)

...she gave him Skin so Soft and he asked me if it was the right kind of ingredients...someone behind him said “why are you asking her” and he said...because I’m the bug expert and knows about these things. Then the tall dark girl [said] “Oh I have the Burt’s Bees organic stuff.” [Bob] said “Nah, I
need what they have because she has me all paranoid about mosquitoes now." He also has the Burt’s Bees stuff, but hasn’t been using it. So the girl said, its tee tree oil and lemongrass and he was like yeah that’s just seasoning...we’re making ourselves into sacred foods for the mosquitoes. It was hilarious! (Brazil Field Notes, p25)

Category 7: Discovering who you are and where you are. Category 7 related to a process of discovering similarities between the culture of the traveler and the culture of the travel destination as the traveler became more familiar and learned more about the travel destination. This process was shared with the concept of category 4 in the sense of noticing similarities between the traveler and the travel destination, as well as between others and the travel destination, which then influenced social interactions. The concept of discovery was also an important factor in the process of ‘Cultural Embeddedness’. As travelers became more familiar with the travel destination and discovered some similarities and differences between themselves, each other and the travel destination, they also learned about the culture of the travel destination, which potentially led to assimilation for certain aspects of the culture.

...eating at the hotel...We had salmon and grilled veggies. We ordered an appetizer of something beef and the thing was raw!!! Apparently that’s a normal thing lol so I had to figure out how to say cook it in Portuguese. It was funny...but she did take it back and cook it. (Brazil Field Notes, p23)

The process of cultural embeddedness seemed to occur in stages from discovery or realization of similarities and differences, a sense of cultural familiarity with the travel destination, a level of comfort with the travel destination and eventually becoming embedded in the culture of the
travel destination. This familiarity and comfort sought between travelers through social interaction was also sought between the traveler and the travel destination.

The church was Catholic…it was the same just in Portuguese. After we went to the tierro and it was a Candomble service, where people were taken by the spirit and did ...Orisha dances. After mass we had Sunday lunch ... It was stew chicken, rice and peas, bee... Regular West-Indian type foods. We couldn’t take pictures during the mass, but got some afterwards with the Princess dancing and stuff. She was excited because they were practicing the same religion and songs as she does in her tribe in Nigeria. (Brazil Field Notes, p24)

Category 8: Underlying effort to acquire and share knowledge. Category 8 links with the concept of knowledge and sharing of information as influential on MAP from Category 6. Dengue knowledge and awareness among travelers was low; however, knowledge of general prevention and preventive behaviors against mosquitoes was shared. Travelers were open and inquisitive to learn from each other and from the travel destination. A major Dengue issue was this lack of knowledge and awareness; however simple health promotion and education was enough to influence some decision-making behaviors regarding use of insect repellent. The following passage exhibits this kind of interaction. Furthermore, this is important because it holds implications for knowledge as a factor of intended and potentially, actual behavior.

He was asking me about Dengue and symptoms or what happens and what we can do. ...so he asked [Kate] when she came by if she knew what [Dengue] was and [she said] Dengue what?? Then, he [said] “See, the pediatrician doesn’t even know what it is!” So she said “Oh, Dengue Fever? We always say Dengue
Fever." So she pretended to know what it was, but didn’t know anything really which was interesting. ...She said they don’t see much Dengue in their “off the boat” hospital [referring to immigrant and refugee patients] so I asked if they’re screening or testing people for it and she said no. She said “Oh we don’t have them tropical type things to worry about. ...so when we got on the bus he asked to [Tina] to use some insect repellent. (Brazil Field Notes, p25)

**Travel Cohort #3: Incredible Thailand 2012.**

*Description of Travel Cohort #3.* The Thailand excursion began on November 1, 2012. Each traveler had a detailed itinerary of the travel schedule and activities prior to the actual trip. The flight left from New York City John F Kennedy International Airport mid-afternoon. There was a short layover in Osaka, Japan where travelers disembarked then re-boarded the same flight followed by an overnight layover in Taipei, Taiwan. The tour of Thailand began on November 3rd in Bangkok where travelers stayed for two days and went sight-seeing to popular attractions including the Grand Palace, Emerald Buddha, Damnoen Saduak Floating Market, and the Reclining Buddha at Wat Po. On November 5th, the group traveled to Ayutthaya on a private motor coach. On the way there, the group took a tour of the Bang Pa In Summer Palace and the ancient ruins in Siam. Other activities included a tour to traditional and contemporary temples, handicraft markets, precious gem shops, an elephant trek, and sightseeing in Chiang rai, Chiang mai and the Golden Triangle. The group left Thailand on November 11th from Chiang mai to make the journey back to the United States (See Appendix C- Artifact #4 for full itinerary).
**Travel Cohort #3: Emergent Themes.** Data analysis resulted in the following categories:

(9) Logistics of international travel; (10) Getting to know yourself, your travel companions and the travel destination; and (11) Influences and factors surrounding the use of MAP.

**Category 9: Logistics of international travel.** Category 9 relates to the logistics of international travel. Experiences leading up to the travel departure and how the traveler prepares themselves can influence the aspects of the travel experiences that are highlighted for that traveler. In this case, the influence of Hurricane Sandy was felt before departure.

...we were all pretty excited to get a stamp in our passports for Taiwan. ...We got to the hotel and then checked in. Others went to bed, but I stayed up to shower and then we ordered wonton soup and fries for room service. ...a couple other girls were excited to shower because they had lost power in the storm. One girl (the one that was sick on the plane) said “Oh wow! The building has light! LOL! Apparently, 2 others didn’t attend the trip because their houses flooded in Sandy.

*(Thailand Field Notes, p4)*

In addition, type of travel and travel plans also influence the overall travel experience, expectations and preparations. This includes obtaining pre-travel advice, how long you plan to stay, where you stay, who you travel with, and any expected travel activities. For example, in this travel cohort, the group was pre-determined by the individual’s planning the trip (e.g., friends, relatives, friends of friends were invited), and the travel agency provided a set travel itinerary of hotels, sightseeing, and some meals. This allowed the travelers to prepare for the trip with expectations devised based on the information provided prior to travel.
Category 10: Getting to know yourself, your travel companions and the travel destination. In Category 10, the concept of getting to know yourself as a traveler, your travel companions, and the travel destination were an important part of the social environment that exists for that travel experience. Social interactions within the group and the group dynamic create a sharing of experiences and a foundation for developing relationships. Travelers found different ways to interact and communicate with each other and with the locals in the travel destination when language was a barrier. There was an underlying importance of communication for bonding and building relationships through experiences during travel activities between travelers and with the individuals living in the travel destination. There was also an awareness of similarities and differences between the current trip and past travel experiences, as well as within and across cultures of different travel destinations. In addition, some of the travelers showed a desire and willingness to learn and experience the culture of the travel destination.

It was evident that there were influences on familiarity with the travel destination, by traveler’s acknowledging cultural similarities between their cultures and the culture of the travel destination. This influenced social interaction between travelers as they identified commonalities with each other and potentially influenced the level of comfort within the travel destination. For example, some of the fruits and herbs in Thailand are similar to that of Republic of Trinidad and Tobago. When going through the market, one of the Trinidadian travelers asked the tour guide about an herb that was for sale that had a sign that said ‘Roselle’. The traveler then said “it looks like what we call sorrel” and that in Trinidad it is used to make a drink almost like iced tea. The guide said that it is the same thing and they also prepare it the same way. There was also a perception of ‘foreignness’ that influenced health preparations. For example, a group of older adults staying at the same hotel had a long discussion about the need for pre-travel advice and
getting vaccinations before traveling to Thailand. One traveler said they contacted the Centers for Disease Control and Prevention (CDC) for confirmation of what they needed to prepare for the trip. Within our travel group, some of the travelers did mention getting pre-travel health advice for Thailand.

…complained constantly and always had insect repellent with her or nearby for use. She did go get pre-travel advice and even had malaria pills… mentioned getting shots pre-travel as well. (Thailand Field Notes, p9)

**Category 11: Influences and factors surrounding the use of MAP.** Category 11 points to the influences surrounding MAP. Insect repellent and overall use of MAP were linked with various components of the social environment; particularly, social interactions and travel activities. In addition, perceptions of MAP corresponded with issues regarding perceived safety and risk, as well as social interactions. The travelers shared insect repellent, had discussions about insect repellent, and some used insect repellent often. This exhibits the influence that social interactions have on risk perceptions and use of MAP.

…it was already dark so the waiter brought out the repellent, but didn’t spray them. He just left it on the table with the citronella candle. [Lucy] said ‘Oh that’s good to have just in case.’ [Kim] was saying how she sprayed before she came down and that she can never have too much on. When [Beth] saw it there after she came down a little later she said ‘Oh! Let me put some on.’ She was going to spray at the table, but [Lucy] said ‘Seriously, don’t spray that at the table’, so she got up and moved away a little and sprayed herself. She said ‘Jeez! This smells strong; so strong I can taste it. It was an extension of earlier on the bus when she
sprayed which was funny. ...When we got on the bus [Lucy] sprayed herself because she was complaining of getting bit. ...She sprayed it and it was really strong; we were all like jeez! Then, for some reason she also sprayed OFF ...She said ‘Oh, I should have sprayed this outside in a more open area.’ She made the joke that with the spray now she smells flammable! (Thailand Field Notes, p6)

The preparedness and awareness of the locals in the travel destination was also an important factor surrounding MAP. The location had a heightened awareness and preparedness for ensuring safety from insect bites for travelers. Insect repellent and spatial repellents were used and provided at several hotels and the tour guide also mentioned that we should purchase insect repellent.

...at dusk so the waiter came out and put a citronella candle on the table. Then, he came out with insect repellent; some local organic blend of eucalyptus and citronella, and sprayed us with it. Then, on top of that [he] put a tagine looking pot on the floor that had incense burning that I think was lemongrass. There were plenty mosquitoes out so it was necessary. (Thailand Field Notes, p5)

Some additional observations unique to this travel experience were summarized within the field notes. The frequent international travelers were more comfortable with the risks associated with travel including mosquitoes or insect bites. This was also linked with culture of the travelers from tropical environments. These travelers had a lower risk perception of concern with insect bites and less use of MAP. Some of the travelers with little experience traveling internationally did seek out pre-travel advice and were concerned with travel-associated illnesses. MAP was limited to using insect repellent. Insecticide use was based on the location;
some hotels or restaurants provided spatial repellents for use. In addition, travelers only wore protective clothing when required of the travel activities (e.g., visiting temples). Eventually, many of the travelers bought wrap skirts made from local cloths to cover at the temples, so that they could wear shorts, or tank tops instead of long pants or long skirts. Table 5 presents basic demographics of each traveler, insect repellent use and whether or not pre-travel health advice was obtained.

<table>
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<tr>
<th>Traveler</th>
<th>Gender</th>
<th>Age Group</th>
<th>Heritage</th>
<th>Insect Repellent Use</th>
<th>Pre-travel Advice</th>
<th>PAPM-Dengue Stage</th>
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<td>3</td>
<td>N</td>
<td>6</td>
</tr>
<tr>
<td>Participant 14</td>
<td>F</td>
<td>35-44</td>
<td>Puerto-Rico</td>
<td>1</td>
<td>N</td>
<td>Undetermined</td>
</tr>
</tbody>
</table>
Results of Main Qualitative Study II

**Demographics.** Table 6 shows the demographics of the eight participants interviewed. To ensure anonymity, ages are presented as range categories and each participant has a pseudonym. Majority of the travelers were from Trinidad, and there were both U.S. born and foreign-born travelers in the sample.

<table>
<thead>
<tr>
<th>Participant #</th>
<th>Age Range</th>
<th>Gender</th>
<th>Home Country</th>
<th>Immigrant Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emily</td>
<td>25-34</td>
<td>Female</td>
<td>Jamaica</td>
<td>Foreign Born</td>
</tr>
<tr>
<td>Lucas</td>
<td>45-54</td>
<td>Male</td>
<td>Trinidad</td>
<td>Foreign Born</td>
</tr>
<tr>
<td>Peyton</td>
<td>25-34</td>
<td>Female</td>
<td>Grenada</td>
<td>US Born</td>
</tr>
<tr>
<td>Zoey</td>
<td>25-34</td>
<td>Female</td>
<td>Trinidad</td>
<td>US Born</td>
</tr>
<tr>
<td>Ava</td>
<td>35-44</td>
<td>Female</td>
<td>Trinidad</td>
<td>US Born</td>
</tr>
<tr>
<td>Naomi</td>
<td>25-34</td>
<td>Female</td>
<td>Trinidad</td>
<td>US Born</td>
</tr>
<tr>
<td>Stella</td>
<td>25-34</td>
<td>Female</td>
<td>Trinidad</td>
<td>Foreign Born</td>
</tr>
<tr>
<td>Brody</td>
<td>35-44</td>
<td>Male</td>
<td>Trinidad</td>
<td>Foreign Born</td>
</tr>
</tbody>
</table>

**Main Theme of International Travel.** Analysis of interviews revealed five themes that fit under the main umbrella concept of the overall travel “Experience” that was sought by the travelers. Participants were asked various questions regarding what it was like traveling to the country of their heritage, as well as what it was like traveling to a new location for the first time. All of the participants then discussed their feelings, their perceptions of the experience, and their travel health behaviors.
Whether traveling to their home country or traveling to another international travel destination, the discussion was always about the “experience,” the excitement and goal to experience what the travel destination has to offer. This overarching theme of the goal to experience a place differed between the excitement of experiencing the unknown in a new or foreign travel destination and the excitement of experiencing the known or familiarities of the home country. This goal to experience then became a cycle for travelers through re-
familiarization and cultural familiarity. When going to the home country, travelers achieved re-familiarization through exploration of their home with the approach of experiencing it as though it were a foreign destination. When traveling to a new travel destination, travelers often had the goal to experience the foreign country the way a local would in an effort to become familiar and learn about the culture and the travel destination. In the ‘culturally embedded’ traveler, this experience could lead to feeling ‘at home’ in the new travel destination (Figure 5).

Themes of Going Home. Themes that define the ‘Experience of International Travel’ (Figure 6) for going home are: (1) Connectedness; (2) Control of the Travel Experience: Childhood versus Adulthood; (3) Two different experiences at home; (4) Seeing what home has to offer; and (5) There is no place like home.

Theme 1: Connectedness. Connectedness to the home country was an important aspect of the overall travel experience. Each of the travelers discussed the importance of their connection to home. The travelers expressed connectedness through pride and appreciation. It is an aspect of who they are and how they understand who they are; no matter where they live or travel; a piece of home and their culture is always a part of them. Emily described this connectedness to her home country. She said that despite moving to America as an early teen, “there’s still that strong connection (Emily)”. On her last trip to Jamaica, she said she felt “very very proud (Emily).” The connection to the home country also set the stage for the experiences traveling elsewhere. Both Naomi and Stella discussed the connection to home as making the travel experience to other international destinations different. Naomi said that she is “more connected to Trinidad [because] Trinidad is my roots; it’s my heritage (Naomi).” Stella articulated the difference in travel experience simply with the statement that travel elsewhere “is not like going home (Stella).” Ava described the connectedness as a part of the broader
experience of life. She said that traveling to the country of her heritage “makes me feel connected to something more so than yourself…it makes you understand where you come from and why you are who you are why what you do is what you do (Ava).”

**Subtheme: Sharing the connection.** A subtheme of connectedness included the desire to share that feeling and expose loved ones to your home. Sharing the experience of the home country with children born in the U.S., spouses or friends was an important aspect of sharing a piece of you with them. In the case of children, sharing meant helping them to understand a piece of themselves through exposure to their country of heritage. This may emerge as the same connectedness to the home country when they are adults. Lucas described the sharing of the connection as being “very exciting (Lucas).” Emily also talked about sharing the connection with a loved one. She said “I really want to take him and share that (Emily).”

**Subtheme: Seeing my home country.** Seeing the home country was also a major component of experiencing the home country. Particularly for the U.S. born travelers, a part of the experience was the need to see the connection to the home country. Zoey described her first time visiting Trinidad as “a great experience...I got to see the island of my heritage...it was cool (Zoey).” Seeing the home country, figuratively, was important as well. It allowed participants to see their culture, which helped them to understand themselves better. Brody described this aspect of seeing in his description of visiting Trinidad. He said “growing up in a Caribbean home and community [in the U.S.] is watered down...when I go to Trini it’s pure in its finest form (Brody).”

**Theme 2: Control of the Travel Experience: Childhood versus Adulthood.** The experience traveling to the home country was different for travel as a child versus travel as an adult. The travelers expressed the difference as the ability to have control over the experience.
The experience as a child meant lack of control over the travel activities, time of year for travel, and ability to make decisions for the overall travel experience. Brody described the control over when he traveled to his home country as a child. He said “When I was younger I didn’t go down as much outside of Carnival (Brody).” As Stella described this difference between travel as a child versus adult, she said “It’s changed…as far as what I can do when I go (Stella).” Emily discussed the difference in experience as a child versus adult in her behavior. When talking about eating street food and taking precautions for health, Emily said, “I don’t buy as much on the street though…now that I’m an adult I understand that it’s not very safe (Emily).” Peyton also described the difference in travel to the home country as a child versus adult in her ability to understand and “appreciate the experience more (Peyton)”.

**Subtheme: Don’t need a reason.** A part of traveling to the home country as an adult included the realization that they don’t need a reason to travel home. Rather than traveling for a specific event or during a certain time of year, travel could be anytime for any reason. This was the farthest extent to which the traveler could exert control over the travel experience as an adult; by no longer needing a reason to travel home. Stella described this control as having “nothing holding me back.” Naomi expressed this concept in the overall context of traveling. In discussing why she travels, her reasons for traveling included there being “no reason” at all. She said she always wanted to travel and thought about it as a child, but as an adult she has “nothing tying her down.” In traveling to the home country, Stella listed several reasons to go home and finally said, “Sometimes I go just to go (Stella).”

**Theme 3: Two different experiences.** An extension of the concept presented in theme 2, is the distinction between ways to experience the home country. The travelers all indicated that there are different travel purposes when visiting the home country. All of these travelers can be
VFR travelers; however, the travel purpose of visiting friends and relatives was sometimes an underlying component to the travel experience and not always the main travel purpose. Trinidadian participants all made the distinction between travels to the home country for Carnival versus traveling to the home country for other reasons. The experience traveling to Carnival was different from traveling for vacation or to VFR or during another holiday such as Christmas or Borough Day. Lucas described the difference between activities, length of stay and purpose. He said that when he goes for Carnival it is a time for him to “have fun to make merry and just to enjoy the place in a short space a time.” He compared this to his experience going to Trinidad for vacation where the experience is “calm” and there is “family time.” Both Lucas and Emily described the Carnival experience as “different” and “intense.” Naomi explained the difference between visiting Trinidad during Carnival versus during another time of year also. She said “it’s different during Carnival” and said during other times of year, “I can actually visit relatives when it’s not Carnival (Naomi).”

The participants not from Trinidad also discussed the different experiences of going to the home country. Peyton talked about the differences in visiting not only as an adult, but specified when the travel purpose was to travel for a specific event. Ava went on to discuss how her experience would be different if she experienced the home country during a different time of year explaining that she only sees “the festivities” and not “everyday life”. Many of the participants also described the lack of time or ability to VFR during the Carnival experience. Stella mentioned that she did not get to visit all of her family during Carnival this year since “they are not all into Carnival”, which is why she goes during other times of the year. Brody concluded, “That’s why you have to go back outside of Carnival.” His plans are to go to Trinidad for the holidays because “that’s [when] I get to see and spend all my time with family (Brody).”
Lucas summed up his thoughts visiting for Carnival versus visiting for vacation by saying “it’s like two different experiences and feelings…but it’s always amazing (Lucas).”

Subtheme: The Carnival getaway. All of the participants experienced Trinidad Carnival. The Carnival experience was different from the experience of going to any other travel destination and different for the travelers whose home country is Trinidad. Carnival is as an experience in and of itself and separate from other travel experiences. Peyton talked about the anticipation of going. Peyton said, “I heard a lot of good things about it so I was excited to go (Peyton).” Carnival is also a means for travelers to get away from the stress of everyday life. Brody explained his “plan to go every year” and get away by saying “Carnival is a great stress reliever…it’s clean fun (Brody).” In addition to explaining how Carnival was “very different than anything I was ever used to (Emily),” Emily also explained how the Carnival experience was a getaway for her. She said she was looking for a vacation with friends “because I was going through a lot personally at the time and I really just wanted to get away (Emily).” Lucas also described Carnival as being a getaway that was exciting because he “was kind of sad…a lot of stuff happening…it came at a good time (Lucas).” Despite the view of the Carnival experience as a getaway or stress reliever, the experience is also intense and full of activities. Emily said, “I barely got any sleep…but it’s something to remember….something to say that I did (Emily).” Zoey simply described Carnival as “the greatest time of her life” before settling down, and Ava said, “The experience was absolutely amazing.” To help others understand what it feels like going home to Trinidad for Carnival or during another time of year, Brody said, “If it’s about Carnival, I would tell them it’s like a drug. After that first hit you will be addicted. If they never experienced drugs (LOL), it’s like good sex, you would never get enough! If outside of Carnival…hmmmmmm…the feeling would be the best (Brody).”
**Theme 4: What my country has to offer.** The cycle of the goal to experience travel can begin here for travelers to the home country. The goal to experience the home country leads to the desire to experience it the way they would experience a new travel destination with the benefit of familiarity. The traveler comes to a point of realization that the home country not only has “a lot to offer (Brody)”, but also that they need to experience what their country has to strengthen their relationship and pride in their country. This often materialized as having a tourist experience in the home country. The tourist experience means learning about the country, sightseeing and experiencing the culture. Brody described this as an aspect of his change in experiencing home as an adult. He said, “As I got older, I tried to be a tourist... [and] learn the island (Brody).” Emily discussed her last trip to her home country as having the opportunity to “enjoy a little bit of...like a tourist experience.” This experience helped her to the realization of what her country has to offer. Emily then described her expectation for another visit as wanting to “do like a half and half,” where she could VFR, but also “go to the north coast and hang out at a resort.” In talking about his last visit to Trinidad for Carnival and short visit to the sister isle Tobago, Brody said, “sometimes you have to change it up...our country has a lot to offer.” In addition, by changing his regular Carnival routine he “got to enjoy what the island has to offer.”

Stella viewed this concept for the broader experience of travel to anywhere. She experiences her home country, but also wants to see what other destinations “have to offer (Stella)”. Many of the participants viewed this as a part of their reason for travel to any travel destination. When Peyton travels, her goal is that she “looks for being immersed in that city...whatever they are known for (Peyton).” What a country has to offer can include their landmarks, history, architecture and spirituality as Naomi, Peyton and Ava suggested. Naomi,
Ava, Lucas and Zoey all described what a country has to offer as experiencing the culture of the place.

**Theme 5: No place like home.** The travelers all have expectations for a great experience when traveling to the home country. Each participant described their past travel experiences to the home country as being “great” or “amazing.” This facilitates the need and desire to return again in the future. Many of the participants already had set travel plans coming up, or plans that were in progress. When there were no plans in place, there was almost disbelief as to why not. Emily said that she “always enjoys going” and decided, “I just need to go…I need to go more often (Emily).” Zoey also not having the opportunity to go recently said she plans to visit again “one day…next year 2014.” Participants all had difficulty articulating the feeling of going to the home country as nothing less than great; often repeating that it is a great experience, feeling and being the best. This feeling and expectation is present regardless of the travel purpose. Sometimes the experience was great because of getting to VFR, for a celebration like Carnival, or simply because of the experience being in the home country. The expectation of an amazing travel experience to the home country also created a preference to go home versus travel to other travel destinations when the traveler has to make a choice. Ava said that despite her feeling comfortable and connected to Bahia, she could not visit Bahia during their Carnival even though she would like to experience it. She said, “I can’t pull myself away from Trinidad Carnival (Ava).” Brody simply stated, “My only desire is going to Trini[dad].”

**Subtheme: Noticing the difference.** Aside from the expectation of an amazing experience when going home, what was not anticipated was the change. The traveler may feel “disconnected” or like a “foreigner” at times because they have changed or are different because of their American cultural attributes. The differences observed also are in the lack of
change in the home country. The traveler then becomes aware of the differences to America and American lifestyles. Emily described her experience as the country inciting a feeling of familiarity, but also feeling “a little disconnected.” She said, “everything looks different…I don’t know my way around anymore…so in a lot of ways I feel like a tourist (Emily).” Stella described the lack of change by saying that “everything was the same….there was no progress.” She said that she noticed the difference between New York City (NYC) and Trinidad because it seemed “slow” in Trinidad in comparison to the city. Zoey also described the difference between Trinidad and NYC. Zoey explained the difference by saying “I guess being in the city we have the more advanced things…and we see things in a different eye…but if we lived in that type of environment in America, then going there it might just be like Oh, I’m home (Zoey)!”

Peyton, in her experience traveling to her home country as a child described the differences as being “hard.” Not having the “comforts of America” and things she was used to made her experience “overwhelming” and in some ways “scary”, but she later appreciated the differences when she visited as an adult. Ava also discussed the difference in comparison to the “spirituality” and lifestyle. She said that life is “just simple in comparison to America…we work really hard [in America] (Ava).” Brody explained this “contrast (Ava)” by saying “In the states we work to pay bills and get into debt…In Trini, you work and go home…no stress (Brody).”

However, it seems when the travelers do visit their home country and experience both the familiarity and notice the differences, the experience enhances the excitement of going home again in the future, instills a new layer of familiarity through the new experiences, and renews pride in their home country.
Subtheme: I should just stay. Many of the participants thought about visiting more often or moving to the home country. After comparing the home country to America and acknowledging the differences and the possible reasons why they cannot live in one place or another, participants created a mental plan or compromise for how they could almost live in two places at once. This was through either a retirement option or keeping the dream of moving to the home country or visiting more often. Although Naomi has not visited her home country that often she said, “each time I go it’s the same…it feels like home” and that her thought during her last visit was to retire there. Brody also said he would consider moving back, but then decided he could not live there. As a compromise, he said, “Once I retire…I would like to have some property…and travel back and forth (Brody).” Ava and Zoey also talked about moving to their home country. Zoey said that she “felt at home” when she visited Trinidad and that, she “actually liked it better than here.” She went on to say, “I would move there...if at all possible in life...yes...say bye to the city life (Zoey).” Ava described the feeling of wanting to stay when she visits. Ava said that after traveling to Trinidad for Carnival each year, it is “harder to leave.” Ava said it is because now she feels like “I could probably just live here...have a nice little life...and it makes you sad to come back to America.”

Discussion: International Travel Behavior & Actual MAP

Cross-Case Analysis. Conducting observations during travel with different groups of travelers to different travel destinations for varying travel purposes provided a foundation for identifying generalizable similarities and differences that occur during any travel experience. These experiences expose the complexity of factors ingrained in the social and physical environments that influence the use of MAP.
Some basic differences in field observations data, as well as the size of the travel cohorts and scope of the data collection process, led to differences in the emergent themes presented for each case.

Table 7: Characteristics of Travel Cohorts

<table>
<thead>
<tr>
<th>TRAVEL DESTINATION</th>
<th>TRAVEL PURPOSE</th>
<th>SIZE OF GROUP</th>
<th>LENGTH OF STAY</th>
<th>TRAVEL GROUP</th>
</tr>
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<tbody>
<tr>
<td>Trinidad</td>
<td>Carnival</td>
<td>2-10</td>
<td>10 DAYS</td>
<td>VARIABLE</td>
</tr>
<tr>
<td>Brazil</td>
<td>Conference/Tour</td>
<td>50-100</td>
<td>18 DAYS</td>
<td>VARIABLE</td>
</tr>
<tr>
<td>Thailand</td>
<td>Leisure/Tour</td>
<td>14</td>
<td>12 DAYS</td>
<td>STABLE</td>
</tr>
</tbody>
</table>

In Trinidad, field notes were written from the perspective of a participant-observer using short journal-like entries and a photo-journal of daily activities and events. Field notes also included informal conversations that provided insight on Carnival experience, travel activities and perceptions of MAP, particularly for insect repellent use. In Thailand, the researcher’s role was also participant as observer. Field notes focused on MAP with the inclusion of conversations and activities surrounding the use of MAP. Due to the size of the travel group, information that is more detailed was logged for each participant, specifically on their MAP use, perceptions, knowledge and behavior. Additionally, conversations were recorded in field notes that would exhibit different aspects of the groups travel dynamic and influences for use of MAP. The field notes were also written in journal-like entries with a post-travel summary and tables of MAP. Additionally, a photo-journal of daily activities was kept. In Brazil, the researcher’s role was again a participant as observer. Field notes were taken regularly and detailed the day-to-day activities of the travel experience during the conference and later during the tour. Journal entries summarized the daily activities, and researcher perspectives. Due to the travel purpose, taking notes daily was appropriate as other travelers were also keeping notes of the information discussed in conference presentations. Informal conversations were recorded in field notes on
Dengue knowledge and use of MAP and travel behavior for other health concerns. Due to the size of this travel group, as many travelers as possible were observed, but only select (by no formal criteria; merely by whom I was able to interact) travelers were a part of some conversations and able to offer opinions or make apparent their knowledge and perceptions of Dengue and MAP. These differences are summarized in Tables 7 and 8.

Table 8. Content Analysis by Travel Cohort: Abstraction of Themes

<table>
<thead>
<tr>
<th>TRAVEL COHORT</th>
<th>LEVEL 2</th>
<th>LEVEL 3</th>
<th>CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># OF CODES</td>
<td># OF SUB-CATEGORIES</td>
<td># OF SUB-CATEGORIES</td>
</tr>
<tr>
<td>TRINIDAD</td>
<td>27</td>
<td>6</td>
<td>***</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>89</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>THAILAND</td>
<td>45</td>
<td>8</td>
<td>***</td>
</tr>
</tbody>
</table>

For each of these travel experiences, a similar travel population was observed. The travel cohorts all had a similar range of ages and cultures. Travelers were majority West-Indian/Caribbean (Immigrant and U.S.-born), adults, currently living in the U.S. primarily in the NYC Tri-state area with varying international travel experiences. The general overarching concepts of the international travel experiences were as follows: (A) Logistics as Determinants of the International Travel Experience; (B) Social Environment: Me, You and the Travel Destination; and (C) Mosquito Avoidance Practices: Perceptions, Space and Time. Figure 6 presents the abstraction process using case pairs that resulted in three concept generalizations.
**Concept A: Logistics as Determinants of the International Travel Experience.** Concept A relates to the concept that the context in which the travel experience will take place (e.g., travel type, travel purpose, travel destination, and travel companions) is an important factor of not only expectations for the experience on the part of the traveler, but also in the level and type of preparedness that will take place. With group travel, many of the basic responsibilities for travel plans are taken away from the traveler and placed on a leader or travel agent. Basic things like meals, lodging, transportation and activities become fixed and information regarding the travel destination and necessary preparations may be provided. In addition, this may determine the extent to which the traveler may experience the travel destination. This can influence how embedded or familiar a traveler may feel in a new travel destination.

**Concept B: Social Environment: Me, You and the Travel Destination.** Concept B relates to the process of discovering and learning more about yourself as a traveler, in addition to learning more about the travel destination. This is based on how you experience the location and with whom. Social interaction plays an important role in any experience, and as a traveler; the need for this interaction is greatly enhanced from that of everyday life. A need for sharing,
bonding and communicating was evident in all travel experiences in varying degrees depending on locale. The underlying concept of a “universal language of kindness” was exhibited where language was a barrier and silent communication using gestures or body language became enhanced to fulfill the basic human need to connect with one another as you experience things together. Similarly, the ability to connect with each other and with the travel destination is a gradual process that results from the awareness of discovering similarities and differences between you and other travelers, as well as with the travel destination. This process aids in becoming more familiar and/or comfortable in the travel destination and creates openness for new experiences and acquiring knowledge about the culture of the travel destination. As the traveler becomes more familiar and learns more about the culture of the travel destination, they essentially become more ‘Culturally Embedded’ in the travel destination. The level of embeddedness will vary across travelers in spite of similar travel experiences because every social interaction will influence perceptions of the overall experience. In addition, the initial intrapersonal characteristics of the traveler for ability and level of need for social interaction will vary, as well as individual culture and past experiences for which they can base their process of discovery and rate of assimilation to embeddedness in a new travel destination. Upon subsequent visits to the same travel destination, or in the case where there is heritage or a direct cultural connection or immigration, the level of embeddedness will be further advanced and more readily apparent. In that case, the focus may be more on how things have changed, if at all, and will take on a more critical eye to observations of the details of the travel destination.

**Concept C: Mosquito Avoidance Practices: Perceptions, Space and Time.** The final concept C involves perceptions, space or the physical environment, and time. This concept refers to the formulation of ideas around the need for and use of MAP. In addition, physical
environmental factors serve as cues to action for behavior and indicate the level of risk for 
contact with mosquito vectors. As a basis for personal protection, insect repellent use is the 
primary means for MAP in travelers, with protective clothing and insecticide use as additional 
means for protection when deemed necessary. Interestingly, additional factors of MAP are 
perceived as outside the realm of personal responsibility for protection against mosquito vectors. 
In addition, the awareness of insect repellent by type (chemical versus organic) was an 
underlying concern for perceived safety from health concerns regarding insect repellent use with 
little concern for efficacy in repelling mosquitoes. Perceptions surrounding safety from mosquito 
bites were an aspect of culture for the individual traveler and at times within the context of the 
travel destination considering the notion of ‘foreignness’ in assessing risk. Cues to action for use 
of MAP are dependent on social interactions, travel activities, and the presence of mosquitoes 
within the space or surrounding physical environment of the traveler. Time is relative; rather 
than accurate insect repellent application based on insect repellent type, misuse was common due 
to perceptions of safety for use after cues to action. Risk perception was a factor for intended and 
actual use of MAP and assessments for the risk of mosquito bites, but for mosquitoes as disease 
vectors. In the case where infections were a concern, Dengue was not a primary focus; rather 
Malaria was the aspect of knowledge that influenced behavior, if any knowledge or awareness of 
mosquitoes as vectors was present.

Going Home and MAP compliance. Participants discussed their travel health behaviors 
within the spectrum of going home to going somewhere foreign. The experience revealed a range 
of comfort and familiarity with going home versus going somewhere new based on the presence 
of factors like family, travel companions, and cultural similarities.
The overarching theme in the context of travel behavior was risk perception. All of the travelers, in varying degrees held the stance that “it depends on where I’m going” to decide whether any preventive health behaviors were necessary. Travelers with past travel experiences that included health issues held the most concern for pre-travel advice and preparation. Stella talked about her first hospital experience occurring while she was on travel to Trinidad. This made an impact on her future travel health preparations for going to the home country and going to other travel destinations. She said “When traveling, preparation is important...healthcare in these countries are not always good (Stella).” Stella prepares when she travels “just in case” something does go wrong. Emily and Ava both described their behavior in someplace foreign as being “cautious” depending on the travel destination. Emily described her experience in travel to Kenya and said “I was being so cautious (Emily).” She said she followed recommendations “for the ones when we went to Africa...because I’m comfortable when I’m in the Caribbean...but when we went to Africa we were warned (Emily).” Ava said, “I pick and choose depending on where I’m going,” because the knowledge she has of health in different countries “makes me a little bit more cautious (Ava).”

This trend of knowledge and doing more to prepare for travel was among the participants who had health-related backgrounds and they described the different influences that their career has had on their outlook and knowledge for health while planning to travel. Another trend was only getting pre-travel advice when needing required vaccinations for travel. Ava described her extent of pre-travel advice being only during her trip to Africa to get “shots and prophylaxis.” Emily also described receiving pre-travel advice only for a trip to Africa or someplace foreign to her. She said, “Anytime I’m going somewhere that’s very far away...and is a really foreign country to me...I go to the state department website, I register...and I go to the CDC website and
make sure I have all my shots (Emily).” Peyton also said that when she went to Africa it was necessary to get pre-travel advice in order “to get shots…but other places not really (Peyton).” Naomi said that she “never thought of getting pre-travel health advice” but in planning an upcoming trip to Africa she said “I’m considering it…I guess I have to for mandatory vaccinations…but I’ll try to get around it (Naomi).” In each of these travel situations, pre-travel advice was only sought and received when mandatory for vaccinations.

The theme of risk perception depending on where the travel destination is was important for MAP and Dengue prevention when traveling. All of the participants knew of Dengue, and were aware of how to decrease risk of acquiring Dengue by use of MAP, particularly with insect repellent. There was some concern of Dengue, but this concern was either short-lived or not enough to elicit long-term changes in behavior to using MAP depending on the travel destination. When participants were aware of friends, family or reported deaths due to Dengue they expressed concern, and some intent to change their use of MAP when traveling to the home country. However, others often had beliefs about their personal risk or risk in the home country for mosquito bites that would decrease the likelihood of behavior change to use MAP. Brody said, “A good friend had a friend in Trini who passed away from that [Dengue] in January (Brody)!” Hearing of the death he was concerned about it for his upcoming travel to Trinidad because he “didn’t know much about it.” However, for taking extra precautions, he said “no not really”, he would “just [use] some insect repellent” because the mosquitoes “love my sweet blood.” Zoey described a past experience getting sick while in Trinidad that may have been Dengue. She said “I was just like really weak… really tired…headache…but I’m not sure [if it was Dengue].” However, talking of a family member who had Dengue and was “really really bad” she said “maybe I’ll try now…because I know I did not put on any type of bug repellent or
anything...maybe I will do the bug repellent thing... so I don’t get the other 3 strains LOL (Zoey).”

Lucas was also aware of Dengue in Trinidad. He said “a friend of mines actually had it last year and she was ill for I think like 3 or 4 weeks...and then her daughter got it as well.” Despite being aware of the risk, he said that “mosquitoes don’t bother me...probably because I grew up there...I’m not affected by it (Lucas).” Ava also was aware of family members who had Dengue. She said “the aunties have had the Dengue fever...the uncles have had the Dengue fever...my sister had the Dengue fever (Ava).” She also mentioned hearing of the recent deaths due to Dengue in Trinidad, but when asked about taking precautions, Ava said “no not at all...it’s not an STD or chronic disease...It’s a mosquito...I don’t have much control over that...the mosquito is going to come bite me whether I do anything or not...it’s like...it’s life.” Whereas Ava introduced the idea of perceived lack of control over Dengue risk, in other cases, like Peyton, who “hates mosquitoes,” she simply “takes OFF” no matter where she goes. Emily discussed Dengue in places she is “comfortable” as “it never even crossed my mind.” Both Emily and Stella said they would put it on if they are doing an activity like hiking, but Emily also said that she does not “even think to put it on” if she is “just in and about town.” The lack of a health risk perception in the home country was not really a denial that there would be no health concerns, rather without personal experiences the need to prevent Dengue or other health issues did not seem a critical aspect of travel planning. Table 9 is a summary of the Dengue knowledge, experience, MAP travel behavior and pre-travel advice of interview participants for estimating PAPM-Dengue stage. Participants who had not traveled to international destinations other than the home country or who did not give enough details about pre-travel advice or MAP in foreign or familiar travel destinations to make an accurate determination of PAPM-Dengue stage were
listed as ‘undetermined’ for each corresponding category. The PAPM-Dengue stages for each participant are consistent with the concept of cultural embeddedness seen in the cross-case analysis and past literature. The participants were in later stages of the PAPM-Dengue model for travel to foreign destinations compared to travel home. However, the traveler’s stage seemed dependent on past experiences and varied by individual.

Table 9. PAPM-Dengue Stage for Interview Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pre-travel Advice (Foreign)</th>
<th>Pre-travel Advice (Home)</th>
<th>MAP Foreign</th>
<th>MAP Home</th>
<th>MAP Familiar</th>
<th>Past Dengue Infection</th>
<th>Dengue Experience (Friends/Family)</th>
<th>Dengue Awareness</th>
<th>PAPM-Dengue Stage Foreign vs. Home (F/H)</th>
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</thead>
<tbody>
<tr>
<td>Emily</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>6/2</td>
</tr>
<tr>
<td>Lucas</td>
<td>+</td>
<td>-</td>
<td>***</td>
<td>***</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>***/4</td>
</tr>
<tr>
<td>Peyton</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>6/6</td>
</tr>
<tr>
<td>Zoey</td>
<td>***</td>
<td>-</td>
<td>***</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>***/3</td>
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<tr>
<td>Ava</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>6/5</td>
</tr>
<tr>
<td>Naomi</td>
<td>+</td>
<td>-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
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<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5/5</td>
</tr>
<tr>
<td>Brody</td>
<td>***</td>
<td>-</td>
<td>***</td>
<td>+/-</td>
<td>***</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>***/5</td>
</tr>
</tbody>
</table>

+ “Yes”  
- “NO”  
+/− “Sometimes”  
*** Undetermined
CHAPTER V

Next Steps in Travel Medicine Research & Practice

Increasing numbers of novice travelers are going to locations at high risk for travel-associated infections, specifically Dengue. There are low levels of pre-travel health advice and knowledge or awareness surrounding the importance of MAP for prevention of mosquito-borne diseases. Particularly for group travel, it is important that travel planners provide travel health information to ensure that travelers receive up-to-date and accurate information regarding travel health risks because travelers’ expectations are such that the travel planners will provide all necessary travel information. In addition, when planning travel activities for group travel, planners should consider providing the tools necessary for travelers to comply with recommendations for use of MAP (e.g., insecticides and insect repellent that can be shared by travelers). Individual travel experiences will require alternative interventions to improve linkage to travel health services to ensure appropriate health information and materials are accessible. Additional research is necessary to understand the concept of ‘cultural embeddedness’ as it influences travel behavior. This concept was ever-present in the individual behaviors of travelers and a main component of how the international travel experience unfolds. More research on this concept as a process is necessary to determine the extent of its role as a factor in decision-making and use of MAP.

In the travel experience of going to the home country, there was a range of connectedness from no previous experience to compare to travel, to many travel experiences to draw from for comparison. When travel to other international destinations was not frequent or the traveler is a U.S.-born individual going to the country of their heritage for the first time, the traveler only
compared the home country to America. After visiting multiple times, they were able to compare across the different experiences to the home country. Foreign-born travelers, on the other hand, compared their experience before and after moving to America, in addition to comparing their experiences during different types of trips to the home country.

The irony is that the overall experience in a foreign country was sometimes to experience the place like a local (e.g., visit homes, local food, and street food), yet the concept when going home for vacation was sometimes to see it as a tourist and do the things that tourists do. What does this mean for health risks? How can we measure VFR and ‘going home’ as high-risk travel if those same individuals are doing low-risk activities at home and high-risk activities in foreign countries? However, better attempts at compliance to MAP seem to occur when individuals are traveling to someplace perceived as foreign and high-risk for disease. The problem for Dengue is that even though everyone knew of Dengue, many were not fazed by the risk enough to take special precautions. As Zoey said when talking about her experiences, “that happened the first time I went to Trinidad...the second time I was fine. And, she [her sister] goes frequently, and it happens, but not all the time...so it’s not like something that’s like oh my gosh I’m gonna die. (Zoey)” It was also interesting that even in the logic of not needing to take special precautions at home or in places where the traveler felt comfortable, they were usually aware that mosquitoes were present and they were at risk for being bitten.

In main qualitative study 2, the health professionals seemed more aware and cautious, but this still seemed to depend on the travel destination. One participant did prepare no matter where she went but this was in part because of the poor past experiences she had in a hospital stay abroad. In this group, the only person with a personal past experience getting hospitalized abroad took extra precautions regardless of where she was traveling. The participant who got sick
abroad after food consumption, but not hospitalized, took extra food precautions, but still also took the risk of eating home-cooked meals when offered. The participant who possibly had Dengue said she might try to use insect repellent next time, and those who knew someone with past Dengue infections were aware and took precautions against mosquitoes, but did not seem consistent in use of MAP.

Regardless of perceptions, and known risks, the travelers all love to travel. Many of the travelers expressed the need for trips to the home country, and in some ways choose home over other travel destinations. The decision-making that contributes to planned travel experiences is an important aspect of the concept of Cultural Embeddedness introduced in Chapter 3 and further described below. Choosing the home country for future travels over other destinations influences the intended and actual behaviors that may occur when going home because of the familiarity, knowledge and perceptions developed and possibly altered with each travel experience to the home country.

It is time for a change

Discussions regarding the visiting friends and relatives (VFR) terminology used in the field of travel medicine, importance of ethnicity in risk assessments, and understanding of culture are present throughout this research. Paradoxically, arguments utilize schools of thought that address the importance of realizing that categorizations of ethnicity and race regarding health behaviors only lead to stereotypes and assumptions about what an individual’s behavior ‘should’ be. How valid is an argument that essentially contradicts itself? The importance is in understanding the broader concepts and addressing the serious issue of Dengue emergence in the United States (U.S.).
At times the terms race and ethnicity are used interchangeably, often in reference to culture. Researchers present studies based on results found or witnessed in a specific racial or ethnic group of people and expect translation of results into public health practice. This project supports the importance of focusing on culture, without the assumptions that cultural identity is solely a product of an individual’s race or ethnicity. Rather, it highlights the fact that culture is as defined by Hoebel (1966), ‘an integrated system of learned behavior patterns which are characteristic of the members of a society, and which are not a result of biological inheritance.’ If we apply Tyler’s (1874) definition of culture as a whole, composed of knowledge, beliefs and additional behaviors acquired by individuals as a member of their respective societies, we can understand where and how race and ethnicity come into play. An individual’s culture is not defined by their race or ethnicity, it is an influence only to the extent to which others interact with them within that society and affect their development or create changes in an individual’s system of learned behaviors.

This project highlights the importance of social interactions in Chapter 4, through discussions of the social environment as influential on resultant travel behavior. The impact of group travel on mosquito avoidance practices (MAP) for travelers included sharing of insect repellent, secondary protection for spatial repellents provided by external group members, and sharing of information regarding risk. An interesting facet includes the role of the travel destination. In results from the Trinidad Carnival Survey used in Pilot Study #2, many participants reported not wearing protective clothing because of the climate and it being “too hot.” As a direct contrast, the Thailand travel cohort discussed in Chapter 3 often wore protective clothing because of the travel activities. Thailand is also, “too hot” for protective clothing; however, sightseeing at temples and religious locations required travelers to be fully
covered. Similarly, this contrast was present for spatial repellents provided in some travel destinations and not others, or for other physical environmental protective factors like window screens, and air-conditioning. Importance is in acknowledging the role of the social and physical environment as influential on travel behavior, void of the culture, ethnicity or race of the individual.

Of course the argument for importance of culture as influential on travel behavior and use of MAP then seems incongruous, if we take the stance that ethnicity and race play a significant role in the culture of the individual. However, drawing on the concepts of Hoebel’s definition, culture plays a significant role not from the standpoint of expected behaviors based on cultural classifications; rather, as a function of the social environment. Actual travel behavior using MAP therefore should not be the same as intended behaviors prior to travel; actual behavior should evolve based on some of the social interactions taking place during the actual travel experience. In addition, the intent of that individual should be a reflection of their culture as a whole. The intent, would consider the travel destination, and the meaning of travel type as interpreted by that individual. This concept is evident in the discussion of the lived experiences of traveling to the home country. Despite the traveler’s expectations or anticipation for travel home, their experiences were in part a result of travel purpose, and social environment, including travel activities such as meals in someone’s home, Carnival fetes, or time with family. The inherent cultural component of the experience, however, remained unchanged. Within the excitement of travel to somewhere foreign versus travel to the home destination, the traveler’s connection to the home country was an aspect of their culture. The goal to experience the culture of another country was an effort for that traveler to further understand others and themselves through experience. If we situate these concepts and the themes discussed in Chapters 4, within the
Intended MAP International Travel Behavior (IMAP-ITB) model (see Chapter 1), we can develop an explanatory model that helps us to understand the associations that exist between factors that influence international travel behavior in the context of MAP. More research needs to be conducted for confirmation and validation of this proposed behavior model; however, the beginning stages for understanding and moving forward in research of high-risk populations have been established here.

This research proposes the Theory of Cultural Embeddedness and Mosquito Avoidance Practices (CEMAP). International travel behavior is defined by the core concept of ‘Cultural Embeddedness.’ Briefly discussed in Chapter 4, and an initial construct of the IMAP-ITB model, cultural embeddedness can explain the role of culture and the travel experience. The term ‘Cultural Embeddedness’, borrowed from economic sociology, represents the importance of the travel goals of the individual, expectations, and experience as a part of the individual’s overall culture. Zukin and DiMaggio (1990) discuss the four kinds of embeddedness in economic action, defining cultural embeddedness as “the role of shared collective understandings in shaping economic strategies and goals (Dequech, 2003, p462).” Embeddedness is a concept originally described by Karl Polyani for substantive economics. This substantivist approach to understanding economics held the concept that interactions between an individual and his environment are a reflection of the means to satisfy material wants (Humphreys, 1969). Adapted by Mark Granovetter, the concept of embeddedness seemed to have a tendency of being over-socialized or under-socialized in explaining human decision-making and behaviors. In Granovetter’s adaptation, embeddedness would hold the concept that “actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy (Granovetter, 1985,
This definition can be adopted to explain the role of social influences on actual travel behavior, so long as the definition of culture adheres to the analyses of cultural influences on behavior discussed by Fine and Kleinman (1979) and Cole (1979). Their discussions of cultural influences state that culture is not static. It is an ongoing process that is constructed and reconstructed with social interactions, so that culture shapes and is shaped by the individuals that are a part of it (Granovetter, 1985).

Figure 7. Theory of Cultural Embeddedness & Mosquito Avoidance Practices (CEMAP)
From there we can understand the core concept of ‘Cultural Embeddedness’ as it relates to international travel behavior and the travel experience in the theory of CEMAP (Figure 7). Prior to travel, the traveler’s behavioral intent is influenced by their culture; their subjective and objective decision-making processes. These decision-making processes include the constant cultural influence relative to risk perceptions, past experiences, the type of travel and knowledge of the travel destination, (e.g., constructs of IMAP-ITB model). Depending on these factors, the individual will determine whether or not they need pre-travel advice, and decide on intent to use MAP. The intended travel behavior will influence the actual travel behavior directly, however the changing culture of the individual based on risk distractions and risk motivators will also contribute to the resultant behaviors. Risk distractions and motivators relate to the social and physical environmental processes that take place over the course of the travel experience as exhibited in the concepts revealed from the multi-case study. Risk distractions would include factors of influence that deter travel behavior from compliance with MAP, whereas risk motivators would include those factors that influence adherence to recommendations for MAP. After travel, the experience immediately becomes a past influential experience on the subjective and objective decision-making processes that will influence behavioral intent during the next travel experience. Furthermore, the state of embeddedness has now been altered because the culture of the individual has changed based on that experience.

Cultural embeddedness is an unceasing process that also acts as a risk motivator or distraction to resultant actual travel behavior using MAP depending on those subjective and objective decision-making processes. Moreover, this cycle is an ‘unbounded spiral’; each travel experience has its own process, but repeated travel or travel to the home country will place the
traveler in a latter state of embeddedness with no limit to the risk distractions or motivators that will contribute to the resultant behaviors (Figure 8).

Figure 8: Cultural Embeddedness Process of CEMAP

**Next Steps for Travel Medicine & Dengue Prevention**

This research began with discussions of disease emergence and the necessity for developing solutions that address Dengue emergence in the U.S. and improve prevention strategies in the field of travel medicine through application of a social-ecological framework. Developing new theoretical models, which reflect multiple levels of influence on behavior, and interventions that utilize the concepts of the social-ecological framework, are considered a best practice in health promotion (Crosby & Noar, 2010; McLeroy et al., 1988). The results of the
multi-case study and the phenomenology study provided examples of the way in which the social and physical environments, in addition to the individual level perceptions and beliefs may influence compliance behavior with MAP. The CEMAP model is then grounded in the concepts of multi-level influences on behavior and is specific to MAP and international travel behavior.

A flaw in public health research and practice has been the approach of individual-level interventions seeking behavior change. Farley and Cohen (2006) stated that population-based changes in public health result from policy and legislative actions that enforce behavior change. Despite the similar goal of behavioral interventions at the individual-level, understanding and changing culturally-based perceptions and health behaviors is not only difficult, but can also vary by individual (Noar & Crosby, 2010). Frieden (2010) demonstrated this logic using the health impact pyramid, which suggests that achieving the greatest public health benefits require interventions that move away from solely individually focused clinical management and move towards long-lasting protective interventions that make the healthy decisions unconscious or default and address improvements to social determinants of health.

In order to address Dengue emergence in the U.S. and the influence of travel behavior on imported Dengue, the CEMAP could be modified for use as a risk assessment tool for individual-level practice. The model also presents a foundation for further travel medicine research. However, there is a need for policy-level action that is long-lasting and protective to maximize prevention and management of imported Dengue. Improved surveillance of imported disease is necessary to achieve the population-level impact necessary to thwart Dengue emergence in the U.S. Therefore, recommendations for next steps to address Dengue emergence include the more research to elaborate the concept of Cultural Embeddedness for use in practice and the development of a more robust surveillance system. Since the risk of Dengue acquisition in
travelers is highly variable based on travel destination and travel behavior for the individual; interventions at the community and policy level are necessary to address the risk of imported Dengue cases in travelers to areas with competent Dengue vectors that have risk for secondary transmission and subsequent Dengue outbreaks. These two recommendations address Dengue prevention through each level of influence from an ecological perspective.

**The Concept of Cultural Embeddedness.** This project provides supportive results on the importance of ethnicity, through culture, on international travel behavior, within the context of the theory of CEMAP. Brown and colleagues (1999) discussed how culture and ethnicity are bound together because it is a learned characteristic within the scope of the individual’s culture. In addition, despite the misuse of ethnicity and the assumptions that are made when individuals are classified and categorized, if we keep in mind the anthropological concepts which define culture, the variability which exists within any group will be expected and the concept of cultural embeddedness will hold true. In the phenomenology study, an important theme for influence on MAP was that it depends on where the travel destination is for many people to decide on their perception of risk and need to use MAP. Often this meant more relaxed preventive behaviors in the home country, which is consistent with past research in travel medicine on VFR travelers. However, an important contrast is that the relaxed preventive measures were not specific to VFR travel experiences. For many travelers, relaxed preventive methods were a function of risk perception for the travel destination and how comfortable the traveler felt once they arrived. Even in travel experiences to a new travel destination, depending on the level of comfort and the travel companions, the resultant behavior was dependent not on VFR status, but on level of comfort and cultural embeddedness. Therefore, it is recommended that the field of travel medicine move away from the social constructs of the term VFR and begin researching better
ways to capture high-risk populations to improve risk assessments for pre-travel advice. A starting point is the investigation of the relevance and potential of the concept of *Cultural Embeddedness* to achieving that goal. Despite the new framework for assessing risks for VFR travelers, the past assumptions and definitions attached to the term create a barrier for objectively using the risk assessment tool appropriately in practice. In addition, the term VFR focuses solely on a primary activity as an external factor from the overall travel experience. Regardless of intent to VFR, the risk distractions and risk motivators that will occur during the travel experience will be significant contributors to cultural embeddedness and actual travel behavior.

By embracing this concept as a potential explanatory variable on intended behaviors, risk assessments may determine not whether the individual will engage in risky behaviors or high-risk travel activities; rather, the assessment will make a determination on state of intent for preventive behaviors prior to travel. In addition, this is important for travel-associated infections such as Dengue because of the likelihood of asymptomatic or nonspecific syndromes that contribute to underreporting of imported Dengue cases. A measurement of cultural embeddedness for travel behavior can aid in follow-ups with individual cases for patients who because of individual culture may not report to primary care physicians, hospitals or get tested for Dengue post-travel. However, to monitor these potential imported cases a more advanced surveillance system is needed.

**Dengue Early Warning Surveillance System.** As suggested in the literature (see Chapter 2), a lack of adequate surveillance has led to underreporting of imported Dengue cases and poor assessments of Dengue emergence in non-endemic regions such as the U.S. This is a major gap in travel medicine and Dengue research (Wilder-Smith et. al, 2012). Therefore, improved surveillance of imported Dengue could mitigate the risk of Dengue emergence in the
continental U.S. by capturing cases in travelers to Dengue endemic regions. As an example of an appropriate surveillance system for a non-endemic region at high-risk for secondary transmission and outbreaks, a novel Dengue Early Warning Surveillance System (DEWSS) is presented, which was developed from a systematic review of best practices in Dengue surveillance (Allen, 2012b).

In order to address the increased risk of Dengue in the continental U.S., surveillance in high-risk populations and hot spots are necessary to provide an early warning capability for risk of local Dengue transmission. Cities with high proportions of frequent travelers to Dengue-endemic regions, and where individuals travel back to a Dengue-endemic home country with some frequency, can be considered “high risk” or potential “hot spots” for secondary transmission and limited outbreaks when the vector population density and environmental conditions favor Dengue transmission. Increased density of infected female mosquitoes would be expected to correlate with increased Dengue risk. Furthermore, increased proportions of infected individuals would contribute to the infection of adult female mosquitoes to aid in sustaining Dengue transmission.

An integrated system which combines traditional passive surveillance methods with a more robust active surveillance system and vector surveillance strategy will allow for increased preparedness to respond to Dengue risk. The program should correlate with the Integrated Management Strategy for Dengue (IMS-Dengue) that PAHO recommends for the prevention and control of Dengue utilizing a framework that incorporates all facets of Dengue transmission (PAHO, 2009). This kind of corresponding preparedness and response program will only be complementary and necessary depending on the preemptive surveillance activities currently used in the continental U.S. to prevent Dengue from establishing itself as a sustained threat over time.
In developing an appropriate surveillance system for Dengue in the continental U.S., certain key factors need to be kept in mind. A national passive surveillance activity is well documented for capturing a percentage of imported cases into the U.S. each year through the Passive Dengue Surveillance System (PDSS) (Mohammed et.al, 2010). In addition, cases of Dengue may be captured through the GeoSentinel Surveillance Network, and Global TravEpiNet, which both conduct surveillance of travel populations through sentinel sites at travel health clinics (Freedman et.al, 1999; LaRocque et.al, 2011). Vector and Arboviral surveillance are conducted as well, at varying levels depending on locale and other mosquito-borne or Arboviral threats to the area.

There is a current Dengue surveillance program; however, there is no cohesive integrated surveillance strategy to address the impending risk of Dengue emergence. An example of an appropriate surveillance system would use a targeted approach to Dengue surveillance that serves as a tactical strategy to provide a capacity for early warning of increased risk for sustained Dengue transmission. The DEWSS could have three main components: a passive surveillance component, an active sentinel surveillance component, and a vector surveillance component. Table 10 offers a breakdown of the key information necessary for planning in accordance with the recommendations by Teutsch for planning such a surveillance system (Teutsch, 2010).

**Passive Surveillance Component.** The passive surveillance system is already in place. The CDC Division of Vector-Borne Infectious Diseases, in conjunction with the Puerto Rico Department of Health conducts laboratory-based passive Dengue surveillance. In the recommended DEWSS, the focus of the passive surveillance component should be to detect imported cases in the continental U.S. with an emphasis on case investigations for rapid determination of possible locally-acquired infections.
### Table 10. Dengue Early Warning Surveillance System: Key considerations for DEWSS Component Planning

<table>
<thead>
<tr>
<th>Planning Stage</th>
<th>Passive Surveillance</th>
<th>Active Surveillance</th>
<th>Vector Surveillance</th>
</tr>
</thead>
</table>
| 1) Objectives  | To estimate the number of imported cases of Dengue in the US. | a) To monitor Dengue incidence in high risk populations in the continental US.  
b) To detect locally acquired cases of Dengue.  
c) To monitor DENV strains imported and/or locally acquired. | a) To monitor vector population density for estimation of local Dengue transmission risk.  
b) To trigger vector control operations for Aedes sp. abundance.  
c) To assess efficacy of vector control activities. |
| 2) Case Definitions | See CDC PDSS case definitions for Clinical DF, DHF, and DSS. Differentiations are made for Suspected Dengue (Dengue-like illness with recent travel history), Travel-associated Dengue (probable or confirmed laboratory-positive cases). | CDC Case Definitions for Passive Surveillance System with differentiation between imported versus locally acquired cases. Dengue-like Illness is a suspected Dengue case with no travel history in the past 14 days. | Aedes aegypti or Aedes albopictus mosquito. |
| 3) Data Source or Data Collection System | Data is currently collected through PDSS. | Sentinel sites in high risk "hot spots" for weekly reports of all suspected, travel associated or Dengue like illness during high risk seasons. | Routine surveillance during high risk seasons using BG Sentinel Traps and MLTD in high risk areas to record weekly entomological indices and infestation maps using Bespoke software and geographical information systems technology. |
| 4) Data Collection Instrument | Provider initiated requests for Dengue serology testing using the CDC Dengue Case Investigation Form (DCIF). | DCIF Form with sentinel site requests to providers for individual case reports weekly. | BG Sentinel Traps, MLTD w/Bti |
| 5) Field Test Method | N/A | 1 site in high risk hot spot with sporadic Dengue transmission and imported cases will host a pilot study to determine if active & vector surveillance strategies increase detection of suspected and travel associated Dengue infections. | |
| 6) Analytic Approach | Case data from passive & active components will be mapped using GIS along with vector population data and environmental conditions to determine risk of secondary and sustained transmission of Dengue. | | |
| 7) Dissemination Mechanism | Alerts to sentinel sites and local health departments and/or providers will be distributed when a potential threat for secondary or sustained transmission has been identified from GIS analysis. | | |
| 8) Analysis & Interpretation | Individually, each component will provide specific data regarding Dengue. Together, this information will provide a risk assessment for high risk areas for Dengue transmission. Imported cases identified through passive surveillance year round may provide insight on trends; however, with the active surveillance component more robust and early detection of secondary transmission can occur. The vector surveillance component provides a complete picture of the Dengue transmission cycle to assess risk. When that risk for transmission is increased we can initiate additional prevention and abatement strategies. | | |
**Active Sentinel Surveillance Component.** Hafkin et.al (1982) in the early 1980s, after reintroduction of Dengue near the Texas-Mexico border, put forth a recommendation for active Dengue surveillance in the gulf coast states. A similar strategy of reports and laboratory testing of Dengue-like illnesses from geographically and culturally significant populations is recommended (Hafkin et.al, 1982). The active surveillance strategy should be in hot spot areas or areas at risk for Dengue transmission. For example, major metropolitan areas such as NYC, Washington, D.C. or Miami are areas of high population movement. Within each of these cities, pockets of high-risk populations may reside, increasing risk of both vector population density depending on cultural practices of the community, in addition to potential increased risk of secondary transmission from travel-associated Dengue cases. A key concern is the increase of secondary exposures to different strains provoking increased risk of severe disease in high-risk populations. It is necessary to note an important contradiction. There is a benefit of decreased risk for sustained Dengue from the effects of herd immunity in an area where residents have past Dengue infections. However, the dilemma is that if different serotypes are introduced, the risk for sustained Dengue transmission will increase as will the likelihood of severe clinical presentations of DHF and DSS.

The active surveillance component should coincide with travel seasons for these high-risk populations. This may differ depending on the population at risk and the location. For example in NYC, increased reports of imported cases have occurred in the summer months among Hispanic populations with recent travel to Puerto Rico and the Dominican Republic. This is a peak travel seasons for people to visit friends and relatives in their respective home countries (Bregman & Slavinski, 2010). This indicates that for NYC, in certain Hispanic communities, sentinel sites should conduct active surveillance to try to identify cases that the ongoing passive surveillance
system may not capture or to detect cases earlier. Early detection of cases is a primary factor in containing Dengue outbreaks by triggering an effective outbreak response (Adalja et.al, 2012). In addition, early detection and prediction of Dengue outbreaks is considered a best practice for Dengue surveillance and is recommended for national surveillance strategies (Beatty et.al, 2010). The active surveillance component will allow surveillance that is more robust in high-risk populations during high-risk seasons. It will not be a year-round ongoing system; rather, initiation of sentinel sites should occur in hot spots to determine potential Dengue risk during a primary risk assessment phase at the commencement of a pre-determined high-risk season for a specific locale.

**Vector Surveillance Component.** The vector surveillance component is a key factor in the DEWSS. For a vector surveillance strategy in the continental U.S., it is important to keep in mind that Dengue vectors have been present in the U.S. with minimal Dengue risk for a long time. Although vector surveillance is essential in Dengue surveillance, in the U.S., vector surveillance should only occur in correlation to the anticipated risk of Dengue transmission and risk characterization. Some of the prime examples provided in a review by Azil et. al (2011) for minimizing transmission risk, may be appropriate for areas such as the Texas-Mexico border and Key West, FL, but not in NYC or Miami. For example, pupal surveys are effective in identifying key breeding containers for Aedes sp. mosquitoes to inform vector control strategies to contain Dengue outbreaks. In high-risk cities for imported Dengue where there is no documentation of local transmission, like NYC, it is necessary to monitor the mosquito population for entomological indices to determine Dengue risk before focusing on key breeding containers for control strategies.
Vector surveillance should have two levels: weekly and tri-monthly. The weekly surveillance strategy should occur in hot spots in high-risk areas to coincide with the active surveillance component. BG-Sentinel traps can document the number of adult mosquitoes trapped per week. The BG-Sentinel traps are effective and reliable tools for estimating entomological risk to guide vector control activities. In addition, these traps are useful in assessing and comparing the efficacy of vector control strategies. A tri-monthly surveillance strategy should occur every three months using a mosquito larvae trapping device (MLTD). An MLTD is an autocidal ovitrap which allows oviposition from gravid adult mosquitoes, but contains pesticides to prevent emergence of adult mosquitoes. The MLTDs used should have *Bacillus thuringiensis* (Bti) as the microbial pesticide because it is safe for human contact and highly effective in killing mosquito larvae. MLTDs are effective surveillance and control tools which have been commonly used in Dengue hot spots in Malaysia (Azil et.al, 2011). This provides valuable information regarding Dengue risk and effectively assists in control of mosquito populations.

**DEWSS Data Applications.** The DEWSS system is an amalgamation of effective and efficient Dengue surveillance strategies. Each component plays an important part in data gathering, but the key factor of DEWSS is in the integration and analysis of data collected. Mapping technology (e.g., GIS) and spatial analysis can provide an additional layer of information in a visually-pleasing format to aid in analyses of the system data (Eisen & Lozano-Fuentes, 2009). Data gathered in DEWSS should be integrated and uploaded for mapping through the available technologies to increase not only timeliness of data analysis and interpretation, but also provide a simplified means for identifying hot spots for Dengue transmission. Case and surveillance data from passive, active and vector surveillance components can be mapped for high risk areas. This will allow for identification of hot spots
within those high-risk areas, in addition to estimating the risk for secondary Dengue transmission based on the environmental factors that influence transmission risk. Once this risk is quantified, a threshold of entomological indices and number of imported cases within a 5-10 day period can trigger dissemination of a Dengue Outbreak Alert (DOA). The alerts would have a scale of low risk to imminent secondary transmission based on statistical and spatial analysis of surveillance data. Dissemination of these alerts to sentinel sites, local and state health departments, and the CDC DVID Dengue Branch, should lead to an appropriate vector control and Dengue response. The response may range from Dengue clinical case management reminders for clinicians to more rigorous community-based vector control strategies and educational awareness campaigns depending on the community and severity of outbreak.

The DEWSS system is limited in geographical distribution because of the current Dengue situation in the continental U.S. This means that the system is highly specific for a given locale and despite standardized Dengue case definitions and data gathering activities, appropriate response strategies and number or extent of hot spots in high-risk areas will vary. Dengue can be considered highly dependent on the affected community; cultural practices for water storage, previous exposures and knowledge or awareness of Dengue may differ by population. In this instance, the DEWSS system is flexible in determining sentinel sites and activation of the active surveillance component and routine vector surveillance activities. The surveillance activities therefore are only representative of the Dengue risk in that location and should not be generalized to other regions.

Fever-screenings Program. An additional aspect of improved surveillance to capture imported disease would be the implementation of fever screenings at high-risk international airports in the U.S. The key is to capture imported cases of Dengue and prevent secondary
transmission in U.S. cities. High-risk international airports in the U.S. can be identified through the use of network-based regression models that estimate the relative risk for imported cases based on the passenger travel volumes, travel distance, predictive vector species distribution models and infection data (Garner et al., 2012). These network-based regression models can highlight specific routes and airports, which hold increased risk for identifying imported cases (Gardner et al., 2012). Implementation of a fever-screening program should follow in accordance with pre-determined high-risk airports. Fever screening programs are effective for detecting febrile cases of Dengue (Chien & Lee, 2007; Kuan & Chang; 2012; Kuan et al.; 2010; McBride, Buikstra & FitzGerald, 2010; Shu et al.; 2005). Using non-contact infrared thermometers, travelers are screened upon arrival for fever. If a fever is detected the patient can be quarantined and tested accordingly for imported diseases of concern, including Dengue. In a study of the Taiwan fever screening program, Chien and Lee (2007) determined that 66% of all imported Dengue cases were detected when compared with national surveillance data of Dengue cases reported. In a later study, Kuan and colleagues (2010) determined that fever screenings in the Taoyuan International Airport in Taiwan were successful in detecting 45% of imported Dengue cases. In addition, the detection of imported cases had a positive effect on partially blocking the local transmission of imported Dengue cases (Kuan et al., 2010). This would be an important step in prevention of secondary transmission and subsequent outbreaks in non-endemic areas of the U.S.

Although imported cases can effectively be detected using fever screens, sensitivity of this intervention is moderate and holds some limitations in detecting imported cases (Kuan & Chang, 2012). A fever-screening program could aid in the effective quarantine and triage of symptomatic viremic Dengue cases; however, asymptomatic cases, non-febrile cases and cases
still in the incubation phase of the transmission cycle will not be detected through a fever-screening program. As a result, Kuan and Chang (2012) recommended, that other Dengue prevention methods be carried out, together with a fever-screening program. In the U.S., addition of a fever-screening program to the proposed DEWSS program would enhance our capabilities in detecting imported Dengue cases.

**Translation to Practice.** An important factor to note is the necessity for corresponding Dengue education and awareness programs for community members and healthcare professionals in high-risk areas. Although the DEWSS focuses on monitoring cases and vector populations, knowledge and awareness of Dengue are important for ensuring that individuals seek medical attention when potentially infected with Dengue. Healthcare professionals must also be aware and include Dengue in differential diagnoses of patients from high-risk populations traveling to high-risk destinations.

A complementary assessment tool for risk determination in travelers is the PAPM-Dengue model. Use of this model and an appropriate adaptation and reduction of items in the Trinidad Carnival Survey, discussed in Chapter 1, will allow practitioners to gauge intent to use MAP by identifying PAPM-Dengue stage of the traveler. In addition, based on PAPM-Dengue stage, health promotion efforts can aid in movement to the latter stages of the model. It is important to link these health promotion strategies with the concepts of the theory of CEMAP. After identifying the PAPM-Dengue stage of the traveler, an appropriate intervention can be implemented utilizing CEMAP constructs. For example, if a traveler is identified as PAPM-Dengue stage 1 (unaware of Dengue issues), then it may exhibit a linkage to objective decision-making, specifically knowledge and awareness of Dengue issues. An educational strategy to increase knowledge may be appropriate for this traveler. Post-travel follow-up with Dengue
testing will also help to identify asymptomatic infections or nonspecific clinical cases of imported Dengue, in addition to evaluation of any implemented interventions prior to travel. Prevention strategies in “hot spot” areas and within high-risk travelers will enhance the ability for accurate reporting of imported cases, as well as pre-travel preparations for increasing intent to use MAP.

Finally, with an increasing number of travelers attending excursions to ‘exotic’ tropical destinations, it is necessary to ensure access to pre-travel health advice. Many travelers use travel agencies or web-based travel planning tools to book trips to international travel destinations. These sites, for example, include Orbitz, Expedia, Travelocity, Living Social, and Groupon, which offer package deals for travel abroad. This project also recommends that sites, which offer international travel planning, should also provide access to pre-travel health advice. This access could be an automatic direction to the CDC travel health website, or Department of State websites for further information on health risks during international travel. In addition, a mobile app or web-based quiz or game could utilize the PAPM-Dengue model and theory of CEMAP to make a determination of risk and recommend the individual to travel health clinics for further advice. A simple intervention to increase access to pre-travel advice will also help in increasing the likelihood of intent to use preventive health behaviors while traveling abroad. Although this project focuses on MAP for Dengue prevention, there are clear implications for how these models could be useful for all vector-borne diseases.

**Limitations & Future Research**

This study is limited by the use of a small subpopulation of international travelers. Albeit small, these travelers are important in understanding risks associated with Dengue Fever
transmission and imported disease into the U.S. In addition, the underlying focus of this study was on MAP specifically for prevention of Dengue. MAP, although the sole recommendation for Dengue prevention in travelers, have not been tested for efficacy in decreasing Dengue risk and does not hold a confirmatory role in prevention of Dengue. This study is also limited in the extent to which results could be applied and generalized to other travel-associated diseases and other populations of international travelers. Understanding the overall experience of international travel holds important implications for travel behavior that are specific to the individual, culture, and the society to which a traveler is visiting.

Future research should look to validate the theory of CEMAP. Follow up studies could test the constructs of CEMAP to develop a predictive model for MAP. The themes and concepts from the two qualitative studies could provide a basis for quantitative studies to measure intended and actual behaviors. More importantly, the concept of Cultural Embeddedness can be further investigated using grounded theory to reveal the process during VFR travel. Distinguishing between VFR status and Cultural Embeddedness through studies incorporating both concepts would allow travel medicine researchers to determine if they complement each other or reflect different aspects of the travel experience. Future research should also explore this phenomenon in other groups of travelers, and for other preventive health behaviors for travel-associated health risks, for example, unintentional injuries, and sexually transmitted infections, food-borne and water-borne diseases common in travelers. Each of these health risks may present differently for priorities and meanings regarding preventive health behaviors for going home and for going to new international travel destinations.
Conclusions

Going to the home country has a special meaning different from that involving travel to other travel destinations. The travel experience to the home country also can have a variety of different travel purposes and activities associated with the experience. For this reason, classifying all travelers that may have friends or relatives and possibly a connection to the country as VFR, makes it difficult to estimate true risk based on when or why they are traveling to the home country. Despite the new VFR framework for risk assessments, the proxy measure of risk acceptance used in the framework does not reflect the many factors associated with the travel experience when going to the home country, particularly when travel purposes may or may not include VFR, despite generalized VFR status. In addition, these risk assessments do not account for the comfort that may occur in travelers going to a new travel destination, or familiarity a traveler may experience over time during travel to a new travel destination, or as a repeat traveler where the traveler is not VFR. Travel purpose needs to be captured differently, and it is recommended that a new term or estimation of risk be developed.

The emergence of Dengue is highly associated with the movement of people through international travel. In order to prevent further spread and establishment in the U.S., it is necessary to acknowledge and address the social behavioral attributes of the Dengue transmission cycle in travelers. Changing the way we think about international travel behavior risks through the theory of CEMAP and concept of cultural embeddedness could eliminate presumptive ideas regarding VFR travelers and offer a new perspective for understanding intended and actual behaviors using MAP. Furthermore, every effort should be made to mitigate the emergence of Dengue fever. This can be achieved by improving the current surveillance systems in place to a more robust system like the DEWSS.
APPENDICES
Appendix A: Figures & Tables

Figure 1: Tentative IMAP-ITB (Intended MAP International Travel Behavior) Model

This model is from the results of Pilot Study #2 discussed in Chapter 2.
Figure 2: Precaution Adoption Process Model for Dengue Prevention in international travelers.

Stages represent theoretical process of unawareness to compliance with preventive practices. Model derived from Weinstein & Sandman PAPM to include stages specific to Dengue Prevention in International Travelers.

Figure 3: Influential factors on intended versus actual MAP and subsequently Dengue risk.
Figure 4: Mixed Methods Approach

Succession of studies used in methodological approach for theory generating research. A stepwise process; where the results and information from a study are used to inform the research questions and design for the subsequent study.
Figure 5: The Experience of International Travel

The overarching goal to experience a travel destination, discussed in Chapter 4. The experience can be dichotomous in phase of cultural embeddedness, but through the processes of re-familiarization and cultural familiarity.
Figure 6: Cross-Case Analysis: Abstraction Process

Sample representation of final levels of abstraction for emergence of concepts present across cases. Categories for each travel case are shown with their linkage final concepts.
Figure 7: Theory of Cultural Embeddedness & MAP (CEMAP)

Model to explain influences on intended and actual MAP through the process of cultural embeddedness discussed in Chapter 5.
Figure 8: Cultural Embeddedness Process of CEMAP

The theory of CEMAP represents a cultural embeddedness process that occurs over the planning phase of travel through the travel experience. The CEMAP in figure 5 is an unbounded spiral that continues through each travel experience. The concept is discussed in Chapter 5.
Table 1: Health Belief Model Constructs & Dengue Issues

<table>
<thead>
<tr>
<th>Perceived Susceptibility</th>
<th>Belief that one most likely will not contract Dengue (Lennon, 2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Severity</td>
<td>Belief that Dengue is not a serious health threat (Lennon, 2005)</td>
</tr>
<tr>
<td>Perceived Barriers</td>
<td>Not enough time or forgetting about personal protection because of travel events/schedule- (Allen, 2011)</td>
</tr>
<tr>
<td>Perceived Benefits</td>
<td>One’s belief that they play a role in reducing personal risk of infection or a role in Dengue transmission in general- (Allen, 2011)</td>
</tr>
<tr>
<td>Self-Efficacy (SCT)</td>
<td>Confidence to perform necessary action- Compliance to CDC guidelines for personal protection</td>
</tr>
</tbody>
</table>
### Table 2: Reliability of IMAP-ITB Constructs

<table>
<thead>
<tr>
<th>Theoretical Constructs</th>
<th>Cronbach Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge</strong></td>
<td></td>
</tr>
<tr>
<td>Familiarity with Dengue symptoms</td>
<td>0.839</td>
</tr>
<tr>
<td>Familiarity with severe Dengue</td>
<td></td>
</tr>
<tr>
<td>Dengue Prevention</td>
<td></td>
</tr>
<tr>
<td>Dengue Transmission</td>
<td></td>
</tr>
<tr>
<td>Healthcare seeking behavior</td>
<td></td>
</tr>
<tr>
<td><strong>Cultural Embeddedness</strong></td>
<td>0.726</td>
</tr>
<tr>
<td>Familiarity with Trinidad</td>
<td></td>
</tr>
<tr>
<td>Annual Travel to Trinidad</td>
<td></td>
</tr>
<tr>
<td>Awareness of Dengue in Trinidad</td>
<td></td>
</tr>
<tr>
<td>Past Dengue Experiences</td>
<td></td>
</tr>
<tr>
<td><strong>Type of Travel</strong></td>
<td>0.413</td>
</tr>
<tr>
<td>Visiting Friends &amp; Relative Status</td>
<td></td>
</tr>
<tr>
<td>Length of Stay</td>
<td></td>
</tr>
<tr>
<td><strong>Past Experiences</strong></td>
<td>0.946</td>
</tr>
<tr>
<td>Past Insect Repellent use</td>
<td></td>
</tr>
<tr>
<td>Past Protective Clothing use</td>
<td></td>
</tr>
<tr>
<td>Past Insecticide use</td>
<td></td>
</tr>
<tr>
<td><strong>Perceived Barriers</strong></td>
<td>0.766</td>
</tr>
<tr>
<td>Difficulty: International Travel</td>
<td></td>
</tr>
<tr>
<td>Difficulty: Trinidad Carnival</td>
<td></td>
</tr>
<tr>
<td><strong>Intended MAP</strong></td>
<td>0.898</td>
</tr>
<tr>
<td>Thoughts on MAP use</td>
<td></td>
</tr>
<tr>
<td>Plans to use MAP</td>
<td></td>
</tr>
<tr>
<td>Intent to pack &amp; carry</td>
<td></td>
</tr>
</tbody>
</table>
Table 3: PAPM-Dengue

Proportions of survey respondents in respective PAPM-Dengue stage by characteristics.

<table>
<thead>
<tr>
<th>PAPM Stage</th>
<th>Stage Characteristics</th>
<th>n</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Never heard of Dengue</td>
<td>7</td>
<td>12.96%</td>
</tr>
<tr>
<td></td>
<td>Unaware of Dengue in Trinidad</td>
<td>19</td>
<td>35.19%</td>
</tr>
<tr>
<td>2</td>
<td>Level of Concern</td>
<td>25</td>
<td>47.17%</td>
</tr>
<tr>
<td>3</td>
<td>Undecided about MAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insect Repellent</td>
<td>8</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>Protective Clothing</td>
<td>11</td>
<td>24.44%</td>
</tr>
<tr>
<td></td>
<td>Insecticides</td>
<td>11</td>
<td>28.21%</td>
</tr>
<tr>
<td>4</td>
<td>Decided not to use MAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insect Repellent</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Protective Clothing</td>
<td>6</td>
<td>13.33%</td>
</tr>
<tr>
<td></td>
<td>Insecticides</td>
<td>2</td>
<td>5.13%</td>
</tr>
<tr>
<td>5</td>
<td>Decided to use MAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insect Repellent</td>
<td>33</td>
<td>66%</td>
</tr>
<tr>
<td></td>
<td>Protective Clothing</td>
<td>9</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Insecticides</td>
<td>15</td>
<td>38.46%</td>
</tr>
<tr>
<td>6</td>
<td>Intend to use MAP in Trinidad</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insect Repellent</td>
<td>37</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>Protective Clothing</td>
<td>16</td>
<td>41.03%</td>
</tr>
<tr>
<td></td>
<td>Insecticides</td>
<td>20</td>
<td>55.56%</td>
</tr>
<tr>
<td>7</td>
<td>Compliance with MAP during travel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4. Factors Associated with Intended Mosquito Avoidance Practices (MAP)

Variables within the constructs of the IMAP-ITB were tested for significant associations and odds ratio estimates with intended MAP.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Proportion, % Estimate</th>
<th>Tests of Association, Chi-squared/ Fisher's Exact</th>
<th>Odds Ratio Estimate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VFR status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>43  8.51</td>
<td>Reference</td>
<td>2.88 (0.240 34.462)</td>
</tr>
<tr>
<td>No</td>
<td>4  91.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of Stay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 7 days</td>
<td>23  48.94</td>
<td>Reference</td>
<td>2.286 (0.559 9.366)</td>
</tr>
<tr>
<td>8 -10 days</td>
<td>14  29.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11+ days</td>
<td>10  21.28</td>
<td></td>
<td>0.857 (0.161 4.554)</td>
</tr>
<tr>
<td>Carnival Dedication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>12  22.22</td>
<td>Reference</td>
<td>10.928 (1.231 97.037)</td>
</tr>
<tr>
<td>Yes</td>
<td>54  77.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>22  40.74</td>
<td>Reference</td>
<td>1.5 (0.455 5.432)</td>
</tr>
<tr>
<td>Yes</td>
<td>32  59.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feel at Home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>9  18.75</td>
<td>Reference</td>
<td>1.0 (1.130 1.991)</td>
</tr>
<tr>
<td>Yes</td>
<td>39  81.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Difficulty- International Travel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>33  63.46</td>
<td>Reference</td>
<td>0.591 (0.166 2.098)</td>
</tr>
<tr>
<td>Yes</td>
<td>19  36.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Difficulty- Trinidad Carnival</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>30  60</td>
<td>Reference</td>
<td>0.99 (0.279 3.506)</td>
</tr>
<tr>
<td>Yes</td>
<td>20  40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>27  75</td>
<td>Reference</td>
<td>1.9 (1.240 2.911)</td>
</tr>
<tr>
<td>Yes</td>
<td>9  25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Fisher's Exact Test p-value
** Chi-squared p-value
*** Total number of observations

NOTE: Carnival dedication and feeling at home in the travel destination are aspects of cultural embeddedness and act as risk distractions. See Chapter 5 for further discussion on cultural embeddedness.
Table 5: PAPM-Dengue Stage of Travel Cohort #3- Thailand

Demographics, insect repellent use and PAPM-Dengue stage of traveler to Thailand are estimated and summarized from field observations during travel.

<table>
<thead>
<tr>
<th>Traveler</th>
<th>Gender</th>
<th>Age Group</th>
<th>Heritage</th>
<th>Insect Repellent Use</th>
<th>Pre-travel Advice</th>
<th>PAPM-Dengue Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant 1</td>
<td>F</td>
<td>25-34</td>
<td>Trinidad</td>
<td>3</td>
<td>N</td>
<td>6</td>
</tr>
<tr>
<td>Participant 2</td>
<td>F</td>
<td>25-34</td>
<td>Trinidad</td>
<td>3</td>
<td>N</td>
<td>6</td>
</tr>
<tr>
<td>Participant 3</td>
<td>F</td>
<td>35-44</td>
<td>Trinidad</td>
<td>1</td>
<td>N</td>
<td>3</td>
</tr>
<tr>
<td>Participant 4</td>
<td>M</td>
<td>25-34</td>
<td>Guyana</td>
<td>0</td>
<td>N</td>
<td>2</td>
</tr>
<tr>
<td>Participant 5</td>
<td>F</td>
<td>18-24</td>
<td>Trinidad</td>
<td>0</td>
<td>N</td>
<td>2</td>
</tr>
<tr>
<td>Participant 6</td>
<td>F</td>
<td>55+</td>
<td>Trinidad</td>
<td>0</td>
<td>N</td>
<td>2</td>
</tr>
<tr>
<td>Participant 7</td>
<td>F</td>
<td>35-44</td>
<td>African-American</td>
<td>0</td>
<td>N</td>
<td>1</td>
</tr>
<tr>
<td>Participant 8</td>
<td>F</td>
<td>25-34</td>
<td>Puerto-Rico</td>
<td>0</td>
<td>N</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Participant 9</td>
<td>F</td>
<td>25-34</td>
<td>Jamaica</td>
<td>0</td>
<td>N</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Participant 10</td>
<td>F</td>
<td>35-44</td>
<td>Jamaica</td>
<td>4</td>
<td>Y</td>
<td>7</td>
</tr>
<tr>
<td>Participant 11</td>
<td>F</td>
<td>25-34</td>
<td>African-American</td>
<td>4</td>
<td>Y</td>
<td>7</td>
</tr>
<tr>
<td>Participant 12</td>
<td>F</td>
<td>35-44</td>
<td>African-American</td>
<td>4</td>
<td>N</td>
<td>6</td>
</tr>
<tr>
<td>Participant 13</td>
<td>F</td>
<td>25-34</td>
<td>Undetermined</td>
<td>3</td>
<td>N</td>
<td>6</td>
</tr>
<tr>
<td>Participant 14</td>
<td>F</td>
<td>35-44</td>
<td>Puerto-Rico</td>
<td>1</td>
<td>N</td>
<td>Undetermined</td>
</tr>
</tbody>
</table>

Table 6: Characteristics of Travel Cohorts

<table>
<thead>
<tr>
<th>TRAVEL DESTINATION</th>
<th>TRAVEL PURPOSE</th>
<th>SIZE OF GROUP</th>
<th>LENGTH OF STAY</th>
<th>TRAVEL GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRINIDAD</td>
<td>CARNIVAL</td>
<td>2-10</td>
<td>10 DAYS</td>
<td>VARIABLE</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>CONFERENCE/TOUR</td>
<td>50-100</td>
<td>18 DAYS</td>
<td>VARIABLE</td>
</tr>
<tr>
<td>THAILAND</td>
<td>LEISURE/TOUR</td>
<td>14</td>
<td>12 DAYS</td>
<td>STABLE</td>
</tr>
</tbody>
</table>
Table 7: Content Analysis by Travel Cohort

Abstraction process for within-case analysis; the number of codes, categories, subcategories and thematic concepts for each case study by level of abstraction.

<table>
<thead>
<tr>
<th>TRAVEL COHORT</th>
<th>LEVEL 2</th>
<th>LEVEL 3</th>
<th>CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># OF CODES</td>
<td># OF SUB-CATEGORIES</td>
<td># OF SUB-CATEGORIES</td>
</tr>
<tr>
<td>TRINIDAD</td>
<td>27</td>
<td>6</td>
<td>***</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>89</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>THAILAND</td>
<td>45</td>
<td>8</td>
<td>***</td>
</tr>
</tbody>
</table>

Table 8: Demographics of Interview Participants

Participants in phenomenology study discussed in chapter 3. Pseudonyms and age ranges are used to protect anonymity.

<table>
<thead>
<tr>
<th>TABLE 8: Demographics of Interview Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant #</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Emily</td>
</tr>
<tr>
<td>Lucas</td>
</tr>
<tr>
<td>Peyton</td>
</tr>
<tr>
<td>Zoey</td>
</tr>
<tr>
<td>Ava</td>
</tr>
<tr>
<td>Naomi</td>
</tr>
<tr>
<td>Stella</td>
</tr>
<tr>
<td>Brody</td>
</tr>
</tbody>
</table>
Table 9. PAPM-Dengue Stage for Interview Participants

Pre-travel advice, MAP, Dengue awareness and experience to determine PAPM-Dengue stage for travel to a foreign destination versus the home country or a familiar travel destination.

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pre-travel Advice (Foreign)</th>
<th>Pre-travel Advice (Home)</th>
<th>MAP Foreign</th>
<th>MAP Home</th>
<th>MAP Familiar</th>
<th>Past Dengue Infection</th>
<th>Dengue Experience (Friends/Family)</th>
<th>Dengue Awareness</th>
<th>PAPM-Dengue Stage Foreign vs. Home (F/H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emily</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>(6/2)</td>
</tr>
<tr>
<td>Lucas</td>
<td>+</td>
<td>-</td>
<td>***</td>
<td>***</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>(***/4)</td>
</tr>
<tr>
<td>Peyton</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>(6/6)</td>
</tr>
<tr>
<td>Zoey</td>
<td>***</td>
<td>-</td>
<td>***</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>(***/3)</td>
</tr>
<tr>
<td>Ava</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>(6/5)</td>
</tr>
<tr>
<td>Naomi</td>
<td>+</td>
<td>-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>(3/4)</td>
</tr>
<tr>
<td>Stella</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(5/5)</td>
</tr>
<tr>
<td>Brody</td>
<td>***</td>
<td>-</td>
<td>***</td>
<td>+/-</td>
<td>***</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>(***/6)</td>
</tr>
</tbody>
</table>

+ “Yes”  
- “No”  
+/− “Sometimes”  
*** Undetermined
Table 10. Dengue Early Warning Surveillance System: Key Considerations for DEWSS Component Planning

<table>
<thead>
<tr>
<th>Planning Stage</th>
<th>Passive Surveillance</th>
<th>Active Surveillance</th>
<th>Vector Surveillance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Objectives</td>
<td>To estimate the number of imported cases of Dengue in the US.</td>
<td>a) To monitor Dengue incidence in high risk populations in the</td>
<td>a) To monitor vector population density for estimation of local</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) To detect locally acquired cases of Dengue.</td>
<td>b) To trigger vector control operations for Aedes sp. abundance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) To monitor DENV strains imported and/or locally acquired.</td>
<td>c) To assess efficacy of vector control activities.</td>
</tr>
<tr>
<td>2) Case Definitions</td>
<td>See CDC PDSS case definitions for Clinical DF, DHF, and DSS. Differentiations are made for Suspected Dengue (Dengue-like illness with recent travel history), Travel-associated Dengue (probable or confirmed laboratory-positive cases).</td>
<td>CDC Case Definitions for Passive Surveillance System with differentiation between imported versus locally acquired cases. Dengue-like illness is a suspected Dengue case with no travel history in the past 14 days.</td>
<td>Aedes aegypti or Aedes albopictus mosquito.</td>
</tr>
<tr>
<td>3) Data Source or Data Collection System</td>
<td>Data is currently collected through PDSS.</td>
<td>Sentinel sites in high risk “hot spots” for weekly reports of all suspected, travel associated or Dengue like illness during high risk seasons.</td>
<td>Routine surveillance during high risk seasons using BG Sentinel Traps and MLTD in high risk areas to record weekly entomological indices and infestation maps using Bespoke software and geographical information systems</td>
</tr>
<tr>
<td>4) Data Collection Instrument</td>
<td>Provider initiated requests for Dengue serology testing using the CDC Dengue Case Investigation Form (DCIF).</td>
<td>DCIF Form with sentinel site requests to providers for individual case reports weekly.</td>
<td>BG Sentinel Traps, MLTD w/Bti</td>
</tr>
<tr>
<td>5) Field Test Method</td>
<td>N/A</td>
<td>1 site in high risk hot spot with sporadic Dengue transmission and imported cases will host a pilot study to determine if active &amp; vector surveillance strategies increase detection of suspected and travel associated Dengue infections.</td>
<td></td>
</tr>
<tr>
<td>6) Analytic Approach</td>
<td>Case data from passive &amp; active components will be mapped using GIS along with vector population data and environmental conditions to determine risk of secondary and sustained transmission of Dengue.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) Dissemination Mechanism</td>
<td>Alerts to sentinel sites and local health departments and/or providers will be distributed when a potential threat for secondary or sustained transmission has been identified from GIS analysis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) Analysis &amp; Interpretation</td>
<td>Individually, each component will provide specific data regarding Dengue. Together, this information will provide a risk assessment for high risk areas for Dengue transmission. Imported cases identified through passive surveillance year round may provide insight on trends; however, with the active surveillance component more robust and early detection of secondary transmission can occur. The vector surveillance component provides a complete picture of the Dengue transmission cycle to assess risk. When that risk for transmission is increased we can initiate additional prevention and abatement strategies.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Toolbox

Tool #1: Field Notes Guide

Approach Unstructured Observation in a Naturalistic Setting

Rationale & Method

Field notes collected during each of the travel experiences should use a narrative format with writing in the first person. Emerson et al (2001) suggests this is both appropriate and effective if the researcher is a member of the group they are researching. In addition, the writing style will use an Impressionist approach in the writing style where both personal accounts and descriptive field accounts are written together in an effort to allow subsequent readers to be “drawn in” for a mutual interpretation of events and the overall field experience. The field notes should include both a personal narrative with descriptions of the physical and social environment in addition to any recollection of dialogue between participants or between the participant and researcher. Field notes should be written and kept as a travel journal either hand written in a diary-style notebook or electronically on a personal laptop daily at the end of the day in order to capture events chronologically for each day traveled. During data collection no personally identifiable information should be collected. If any first names of travelers are at any point used in the field notes, omission during later transcription and analyses is necessary.

Data Collection Guide

This checklist may provide guidance in field notes to ensure a complete dataset of all factors of travel. This will include the following descriptions and accounts as adapted from the strategy used by qualitative public health researcher Anne Mulhall:
• **Physical Environment**: atmosphere, setting location and schematics

• **Social Environment**: people, interactions between participants relative to the physical environment and behavior

• **MAPs**: any direct observations of MAPs behaviors or discussion of usage

• **Dengue**: any direct discussions or accounts of Dengue amongst travelers and locals, advertisements, vector control practices in travel location.

• **Daily Activities**: daily process of group of travelers

• **Special Events**: special activities planned for the group or local holidays or events.

**Note:** This guide can help trigger or evoke a pattern in the field notes, however all field notes should be a combined descriptive and reflective journal. This will allow for an accounting of events with a subsequent period and inclusion of primary analysis in the initial writings. In the later analyses post-travel, the inclusion of concurrent unconscious analysis will provide not only the descriptions of the events, but also the interpretations and feelings that occurred by the researcher during the experience. This helps to account for a sense of self in the analyses to pinpoint any additional bias that may occur by the researcher from being a complete participant and member of the researched travel population.
Tool #2: Interview Guide

Semi-structured Interviews for Phenomenological Inquiry of ‘Going Home’

NOTE: This interview guide is in a structured format to inquire about the emotions involved in traveling to the individual’s country of ancestry for a cultural celebration and the health behaviors practiced for Dengue prevention. The goal is to gain an understanding of the lived experience during international travel and the potential influences on decision-making for MAPs use for effective Dengue prevention during a culturally significant event as compared to other types of travel. Questions will vary between participants depending on the level of Dengue awareness/knowledge and past travel experiences. The order of questions is not mandatory and the researcher should probe and follow-up with questions that are appropriate to facilitate a conversation rather than a structured interview. Depending on background of participant, question order may change, additional questions may be added and some questions irrelevant.

1. How does going to the country of your heritage make you feel?
2. Before traveling what kind of pre-travel health advice do you get?
3. Do you remember hearing about Dengue or other mosquito-borne diseases during your trip?
   a. If yes, tell me about what you heard about it?
   b. Or if you ever had a personal experience with Dengue or another mosquito-borne disease.
   c. Possible probe/follow-up questions depending on answer: What types of medicine/treatments were used? What did you do to protect from getting infected?
4. When you attend Carnival, what kinds of precautions do you take against Dengue or other mosquito-borne diseases?
a. You are knowledgeable about Dengue; can you explain why you do/do not take certain precautions such as insect repellent use?

b. What types of activities do you do during Carnival that may put you at risk?

5. Why do you attend Carnival?

6. Have you visited any other location during the Carnival season such as New Orleans, or Brazil?

   a. Have you visited at another time during the year?

   b. When you visited, what types of precautions did you take against mosquito-borne diseases?

7. What is it like going to a new international location for the first time?

   a. Tell me more about that experience.

   b. What about other international trips/vacations?

8. Why do you travel?
Appendix C: Artifacts

Artifact #1 – Trinidad Carnival Fete Schedule

Please note: this schedule is for 2013. Many of the events are the same as 2012 with differences in dates. However, this schedule is a sample representation of the typical fetes and events that take place during the Carnival season.
**Suggested Traveler’s Packing List**

**Passports**  
**Itinerary/Travel Packet**  
**Calling cards**  
**Journals/pens**  
**Wallet**  
**Cash or Traveler’s Checks**  
**Traveler’s money pack/pouch**  
**Camera (film, discs, batteries)**  
**Tape recorder/Tapes**  
**Batteries & Adapters**  
**Video Camera/Tapes**  
**Clock/Alarm Clock (Battery Operated)**  
**Electrical Plug Adaptor**  
**Discman/Ipod**  
**First Aid Supplies**  
**Needle and thread**  
**Plastic bags**  
**Sun block/Suntan lotion**  
**Umbrella, Poncho, Rain Gear**  
**Toothbrush, toothpaste, deodorant**  
**Hat, Sun glasses**  
**Beach Towel**  
**Light Sweater/Jacket (Bus or Indoors)**  
**Pillow/Bedding (optional)**  
**Mosquito Repellent**  
**Gatorade Powder**  
**Safety Pins**  
**Book Bag/Knapsack for everyday travel**  
**Vitamins, Inhaler, Benadryl, Medicines**  
**Required based on Medical History**  
**Cayenne, Garlic and Olive oil**  
(combination of the three serves as a natural antibiotic)  
**Items to give away or exchange at the Market**  
**Food & snacks that meet dietary preferences**  
**Books and games for down time**  
**Laptop & Adapter (optional)**  
**Portuguese/English Dictionary/ Smart Phone App**  

**His Packing List**  
**Light Summer Clothing & Sandals,**  
**Sneakers, Hiking Boots (if needed)**  
**Shaving supplies**  
**Slacks**  
**All White Attire (Dress up/Dress Down)**  
**Bathing trunks**  
**Sleepwear**  
**Her Packing List**  
**Light Summer Clothing & Sandals,**  
**Sneakers, Hiking Boots (if needed)**  
**Cosmetic supplies**  
**Jewelry (nothing too valuable)**  
**Robe/sleepwear**  
**Bathing suits**  
**Feminine Products**  
**All White Attire(Dress up/Dress down)**  

***Please note***  
1) When traveling in Bahia, please ask permission to take pictures  
2) Keep a Xerox copy of all important travel documents on your person and in your suitcase.  
3) Feel free to bring gift items (cloth, clothes or children’s trinkets that you can give away) to give as parting gifts for those who you have meet
WELCOME

IFETAYO IS PLEASED TO JOURNEY TO BAHIA, BRAZIL!

The Global Axé Diasporic Cultural Conference examines the role that art, education, culture, African heritage, social policies, media, marketing and technology play in the recovery and development of youth of African descent and their communities worldwide.

CONFERENCE HIGHLIGHTS

Workshops, Panels and Youth Sessions

33 Workshops in 12 Tracks including Arts, Education, Social Justice, Civic Engagement, Social Media, Digital Strategies, Organizational Capacity Building Tradition, Family Reawakening, Health and Wellness, Economic Development

5 Mbongi Style Panels
Featuring experts in the field sharing best practices and strategies from their experiences

10 Youth Sessions
Featuring youth led workshops for the youth ages 12 and older and age appropriate workshops for ages 4-11.
Opening and Closing Reception
Espaco Cultural da Barroquinha
Praca Castro Alves, s/n
Barroquinha. CEP- 40.020-160
Fone: (71) 3322-2646
Tuesday, August 7, 2012 - 7:00pm
Saturday, August 11, 2012 - 3:45pm

Conference Day 1 & 2
Escola da Danca
Av Adhemar de Barros, S/N
Campus de Ondina
Salvador, Bahia 40.170-110
Fone: (71)3283.6579
Wednesday, August 8, 2012 - 8:00am-5:00pm
Thursday, August 9, 2012 - 8:00am-4:00pm

Conference Day 3
Centro Cultural Senzala do Barra Preto
(Ilha AIyte)
Rua do Curuzu, 228 - Liberdade
Salvador, Bahia 40.365-000
Fone: (71) 2103-3400
Friday, August 10, 2012 - 8:00am-6:00pm

Conference Day 4
Faculdade D. Pedro II
Unidade Carlos Prates
Avenida Estados Unidos
18 - Comércio
Salvador - BA, 40010-020
Fone: (71) 3243-7272
Saturday, August 11, 2012 - 8:00am-6:00pm
AGENDA AT A GLANCE
Tuesday, August 7, 2012
4:00pm-9:00pm

4:00-5:00pm  Ceremony for Iemanjá (Yemejá) – Casa de Iemanjá (Yemanjá) on Rio Vermelho
Beach, Salvador-Bahia.
(Ceremony attendees may bring offerings of fruit and flowers for Iemanjá
Buses Depart for Pelourinho (Historic Center of Salvador) Bus#1, departs at
5:00pm Bus#2 departs at 5:15pm and Bus#3 departs at 5:30pm)

5:00-6:00pm  Attendees travel to Pelourinho (Historic Center of Salvador) (Bus#1 & Bus#2 will
depart at 5:00pm and Bus#3 will depart at 5:30pm)

6:00-7:00pm  Conference Opening Parade
Attendees will have the opportunity to join in a traditional Brazilian welcoming
parade through the streets of Pelourinho accompanied by the sounds of a local
Afro-Brazilian percussion band Banda Swing do Pelo. The parade will start at Terreiro
de Jesus Square and end at the Largo do Pelourinho.

7:00-9:00pm  Opening Cocktail Reception at the Espaco Cultural da Barroquinha in the Historic
Center of Salvador with Welcome Performance by Banda Ilê Ayé at 8:30pm
Directly following the parade conference attendees will have the opportunity to par-
ticipate in the conference's opening reception hosted by the Secretaria Municipal da
Reparacao, Ailton Ferreira.

9:00-9:30pm  Departure for Monte Pascoal Praia Hotel
(Buses will depart at 9:00pm, 9:15pm and 9:30pm)

9:00pm until  Dinner - on your own

Let there be everywhere our voices, our eyes, our thoughts, our love, our actions, breathing hope and victory.
- Sonia Sanchez
Cultural Tour-Day 1
All Day Boat Ride across "All Saints Bay" to
Ilha Dos Frades & Ponta De Areia Islands – Lunch
provided by Ifetayo on Ponta De Areia

Ilha Dos Frades

Ponta De Areia
Cultural Tour-Day 2
Morning & Afternoon Workshop Sessions
and Local School Site Visits

Brazilian Textile Workshop

Brazilian Sacred Foods Workshop

Afro Brazilian Percussion Workshop

Local Cultural School Site Visit
Cultural Tour-Day 4

Optional Activity
- Orígenes Concert

Festa da Irmãade da Boa Morte (Festival of the Sisterhood of Good Death)
Cachoeira, Brazil
Cultural Tour-Day 5
Projecto Tamar, Igreja do Bonfim (Church of Bonfim), Balet Folclorico de Bahia Concert

Projecto Tamar

Igreja do Bonfim

Terminal Maritimo de Ribiera

Balet Folclorico da Bahia
Cultural Tour-Day 6
Free Days & Ifetayo Celebration Dinner

Market

Terreiros

Beach

Celebration Dinner
Cultural Tour-Day 7
Free Days & Ifetayo Celebration Dinner

Optional Activities
Terreiro Festival
Roda de Capoiera

Market
Beach
Terreiros
Artifact #4: Thailand Tour Itinerary

November 1, 2012: Depart USA. Check in for your mid-afternoon flight to Thailand via Taipei.

November 2, 2012: En route. Cross the International dateline and lose a day. (You will recover this day on the return leg of your trip.)

November 3, 2012: Bangkok. Arrive in Bangkok very early in the morning (shortly after midnight). After customs formalities, transfer to your centrally located hotel for guaranteed check-in. Take time to rest from the long journey. In the afternoon, there will be an optional tour to the Grand Palace & Emerald Buddha. The Royal Grand Palace is a "must-see" attraction, as well as Thailand’s most important landmark. Your guide will take you on an in-depth journey through Thailand’s history and royal heritage, where you’ll be amazed at the grandeur and majesty of the building and its throne halls. This is also where you’ll be treated to a special visit to see the mysterious Emerald Buddha, the most revered Buddha image in Thailand.
Tonight, enjoy a Thai Set dinner at a local restaurant including a folklore show. Overnight at the Dusit Thani (B, D)

Floating market, Ratchaburi © Tourism Authority of Thailand

**November 4, 2012: Bangkok.** This morning, take an optional tour to Damnoen Saduak Floating Market, where merchants and villagers buy and sell fruits, vegetables and many other items from small boats.

In the afternoon, your tour takes you to Bangkok center. Temples, along with the monarchy, are the fabric that binds together the national identity that is Thailand, and some of the most interesting of Thai temples are found in Bangkok. Begin at Wat Trimitr where you will view the 700-year-old Golden Buddha, the largest in the world weighing approximately 5 tons. At Wat Po, founded in the 17th century and the oldest temple in Bangkok, you’ll view the amazing Reclining Buddha, whose face depicts the attainment of Nirvana and whose feet are inlaid with mother-of-pearl.

You’ll also visit Wat Benchamabophit, also known as the "Marble Temple" and one of Bangkok's most important tourist attractions. Built of white Italian marble, it is a wonderful example of Thai temple architecture. (B)
November 5, 2012: Bangkok & Ayutthaya. Depart to Bang Pa In Summer Palace that was built by King Rama IV at a time of growing European influence in Thailand. Explore the majestic royal mansions and visit Wat Nivet Thammapavat, a gothic inspired temple beside the river.

Continue to the beautiful ancient city of Ayutthaya, a UNESCO World Heritage Site. King U-Thong founded the city in 1350 as the capital of his kingdom of Siam. By 1700, Ayutthaya had as many as a million inhabitants, making it one of the largest cities in the world at the time. But in 1767, the city was invaded and destroyed by the Burmese army. Magnificent ruins of the old city still remain, and archaeological excavations continue. Visit the most important of the ruined temples: Wat Yai and Wat Chai Watanaram. Kantary Hotel Ayutthaya.

November 6, 2012: Ayutthaya, Lopburi, Phitsanulok & Sukhothai. Drive through the beautiful countryside past fields of rice paddies to Lopburi and Phra Prang Sam Yot, regarded as Lopburi’s chief landmark. Like many sites in Lopburi, Phra Prang Sam Yot is overrun by monkeys, so hold on tight to your baseball caps, sunglasses and scarves. Depart to Phitsanulok, this town served as the Siamese capital for 25 years and was also the birthplace of King Naresuan. Today it is a busy, dynamic city and one of the larger of Thailand’s provincial towns. This morning visit the Bronze Case Factory where a huge range of bronze Buddha images are cast using the 'lost wax method' which visitors can observe.

Continue to Sukhothai, which in 1238 became the first truly independent Thai kingdom, where the Thai culture, language and alphabet originated. Sukhothai Heritage Resort or similar (B)
**November 7, 2012: Sukhothai, Phayao & Chiang Rai.** Depart for Phayao, a rural lakeside province surrounded by beautiful mountains and valleys dotted with fascinating religious sites. En route visit Wat Rong Khun, also known as the "White" Temple. A lifetime project of artist Chalermchai Kositpipat, the temple has a fine blend of traditional Buddhist art with contemporary themes and is decorated with small pieces of mirrored glass which add substantially to its dramatic beauty. The River House Resort and Spa (B)

**November 8, 2012: Chiang Rai.** Today will be at leisure to explore the town of Chiang Rai on your own, or take an optional Elephant Adventure and Hilltribe tour. Start with a one hour Mai Kok boat trip via a long-tailed speed-boat to Karen Hilltribe village. From here, you'll saddle up for a 2 hour elephant trek through the hills and woods, to a Yao Hilltribe village. After enjoying a local lunch, you will visit an Akha Hilltribe Village. Continue your trek to a waterfall, where you will have an opportunity to swim and take a short rest. En route back to your hotel, you will visit a Chiang Rai Handicraft Center. Return to your hotel, en route visit the Chiang Rai Handicraft Center. (B)

**November 9, 2012: Chiang Rai, Golden Triangle & Chiang Mai.** After breakfast, continue to Chiang Saen, a small town on the bank of the Mekong River, on the border with Laos. A boat trip on the mighty Mekong takes you to the Golden Triangle, the place where the borders of Thailand, Burma and Laos meet. Depart Chiang Rai and drive to Mae Sai, the northernmost point of Thailand, separated from the Burmese border town of Thakhilek by a small river also called Mae Sai. Take a stroll through the local market where you’ll find jade and other Burmese jewelry and handicrafts.

Continue through mountains, valleys and the lush landscape of northern Thailand to Chiang Mai, Thailand’s second largest city, often called “Rose of the North” for the abundance of flowers that thrive in its cooler mountain climate. In the evening join your fellow tour members at a local restaurant. After dinner each couple gets a khum Loy (fire balloon) or a kratong (floating candle) to launch for good luck. De Naga Hotel (B, D)

**November 10, 2012: Chiang Mai.** This ancient city boasts many of Bangkok’s amenities, including excellent food and accommodations but without the frenetic pace of modern city life. From its origins as a
small northern town, it has become a city representative of modern Thai culture with a beautiful
personality of its own represented, in part, by the many temples found here.

This morning you’ll visit some of the most interesting temples found in town and then travel high into the
mountains, to Wat Doi Suthep, one of the most revered temples in all Thailand. Continue to a handicraft
village where silk, cotton, pottery and stoneware are among the many traditional folk arts practiced.

This afternoon you will visit an elephant camp for a first-hand look at the important role elephants have
played in every aspect of Thai life, from ceremonial purposes to warfare, transportation and farming. See a
fascinating demonstration of elephants at work and play, and then visit a beautiful orchid farm to see how
these lovely and prized plants are expertly and artistically cultivated. This evening, transfer to the airport
to board your return flight to Bangkok. Transfer to your hotel in Bangkok for overnight (B).

![Elephant Camp]

**November 11: Bangkok – Taipei.** Breakfast at hotel. Transfer to Bangkok airport to board your flight to
Taipei. Overnight in Taipei at your airport hotel.

**November 12: Taipei – USA.** Breakfast at hotel. Transfer to Taipei airport to board your flight to the U.S.
(B)

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**Tour Overview**

- Round-trip airfare from New York via China Airlines including fuel surcharges & taxes
- Intra-Thailand transportation, transfers & flights
- Accommodations at Superior First Class hotels as listed (or similar)
- Full buffet breakfast daily and two dinners
- Sightseeing tours
- Professional, English-speaking tour guides

**CONFIRMED** Flight Schedule (Main Program):

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<th>Month</th>
<th>Departure Time</th>
<th>Arrival Time</th>
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<tr>
<td>November 2</td>
<td>TPE / BKK</td>
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Not Included

- Passports/Visas
- Items of Personal Nature
- Items not mentioned above
- Tips for drivers, guides, or director
- Optional Insurance

General Terms & Conditions
for Friendly Planet Travel Programs

To achieve our goal of providing you with the very best services at the lowest possible prices, we ask that you read our "fine print" carefully and note the policies as outlined below.

Passports & Visas

PASSPORTS are required for all US citizens traveling abroad and must be valid for at least 6 months after your date of return. Many countries will not allow you to enter their borders if you do not have at least 6 months of remaining validity on your present passport. If you already have a valid passport, please send Friendly Planet Travel two clear photocopies of the signature and photograph pages of your passport with your reservation. If you do not already have a passport, you should make arrangements to get one without delay and send the photocopies of the appropriate pages as soon as your passport arrives. Be sure to sign your new passport before you make your photocopies for us. Friendly Planet must receive your passport copy 60 days prior to departure in order to assure that your name appears on your ticket exactly as it appears on your passport. Airlines may apply penalties if it is necessary to make corrections to your name either in the air record or on your ticket.

VISAS are required for some of our tours, and it is the responsibility of each passenger to secure the proper travel documents for each tour. In some cases, group visas are possible to obtain and Friendly Planet Travel, Inc. will make arrangements to secure such visas for you. If group visas are not possible, we will provide our passengers with information on obtaining individual visas required for our tours. Visa fees are not included in the tour price and are noted in the price schedule for each tour.

You are advised to contact the Consulate or Embassy of the countries that you are visiting well in advance of your trip to ascertain their requirements.

Transportation & Touring

TRANSFERS & TOURING are provided by modern, air-conditioned touring coaches. All entrance fees to places visited in the itinerary are included except those mentioned as optional. Arrangements for the itineraries, domestic transportation and flights are solely at the discretion of the local land operators and are subject to change without notice. If any changes are made, Friendly Planet has no liability.

Reservations & Deposits

A group deposit of $1,500.00 is required to hold any services.

An individual deposit of $300 per person is required when placing reservations. INDIVIDUAL DEPOSITS ARE NON-REFUNDABLE ON ALL FRIENDLY PLANET TOURS.
Final Payments

FINAL PAYMENTS are due at least 75 days (105 days for program including a cruise) prior to departure or on the due date indicated on your invoice. Payments may be paid by check or major credit card.

UNUSED SERVICES cannot be refunded once the trip has begun. No refund can be made for absence by passengers from any part of the tour.

PERSONAL TIPS are not included in the tour price. We will provide each passenger with suggested tipping information for all of our tours. These suggestions will be part of the final tour documents.

DOCUMENTS for all tours will be sent via email approximately 21 to 14 days prior to departure. This includes your e-ticket if applicable.

TOUR PRICE DOES NOT INCLUDE passports and visa fees, foreign airport taxes and fees, US departure taxes, excess baggage charges, baggage and personal insurance, gratuities, optional tours, beverages, items not specifically mentioned in the itinerary or tour inclusions section, or any items of a personal nature.

CANCELLATIONS of reservations must be made in writing and are subject to the following charges:

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<td>29-10 days prior to departure</td>
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Travel Insurance

Friendly Planet Travel strongly recommends insurance coverage for your trip. Travel insurance through our special wholesale plan costs only $99-$199 per person (depending on your total trip cost) and is an invaluable asset for protecting your vacation investment. Travel insurance must be purchased before or at the time of final payment and is non-refundable. After we receive your final payment, our travel insurance package will no longer be available for purchase. In order to take full advantage of this comprehensive travel protection plan available through Assist Card, we recommend purchasing the insurance at the time of booking. This way, the pre-existing conditions waiver will apply and your deposit will be covered. For full coverage details please visit our website at: http://www.friendlyplanet.com/travel-insurance.html

Sincerely,
Denise Barnes
Groups Manager

e: dbarnes@friendlyplanet.com
t: 800-555-5765 ext. 203
f: 215-572-9803
References


Allen, K. (2011b, October). Impression of culture on Dengue prevention in American travelers. Poster session presented at National Institutes of Health Center of Excellence Caribbean Exploratory Research Center 4th Annual Health Disparities Institute, St. Thomas, USVI.


SUPPLEMENT I:

CULTURAL EMBEDDEDNESS AND THE INTERNATIONAL TRAVELER:
Perceptions from the Field

Field Experience & Photography By: Koya C. Allen
Trinidad Carnival: Scenes from 2012 and 2013

Trinidad Carnival Field Observations: The Experience

Usually when attending Carnival in Port of Spain, Republic of Trinidad & Tobago, you have your fete itinerary planned in advance. Planning your fete schedule and securing fete tickets are just as important as booking your air ticket, hotel and costume, which must be done at a minimum of 6 months in advance to ensure availability of your preferences. Tickets for many of the more exclusive events are limited and only available based on whom you know, but there is something for everyone in the “Greatest Show on Earth”. My Carnival experience ranges from fetes, to liming with friends and family, and most importantly playing mas!

For 2012, I arrived late Wednesday evening, so my fete plans began the following day. I stayed at the Hyatt hotel from Wednesday to Saturday and moved to the Crown Plaza for the remainder of my stay in Trinidad due to limited availabilities at the Hyatt. As I said, you must secure your travel plans early! On Thursday, I attended one of the most elaborate all-inclusive fetes, Beach House, which took place at a golf resort in Couva. At the entrance to the fete, the first station is a Johnnie Walker Blue Label tent that offers guests a welcome beverage to get the party started. Once inside, there are a variety of drink stations and food stations to eat and drink local delicacies surrounding a massive dance floor to party until your heart is content. During the day on Friday, I attended a drinks-inclusive day fete called ‘Break Biche,’ which is a term used in Trinidad that means you deliberately missed work or school that day. The fete took place at the pier in Chaguaramas, overlooking the sea, with live performances of local soca artists. On Friday night, Island People events annual Girl Power fete had multiple soca artists perform, as well as a VIP or all-inclusive section where food and drinks were available. On Saturday, I went
to a local bar lounge on Aripita Avenue, called *Stumblin’* to simply take in the atmosphere of Carnival weekend. Sunday morning, I attended a breakfast fete called Sunny Side Up. Many consider this the best fete for the Carnival weekend. The fete begins before sunrise at 4AM and is an all-inclusive breakfast fete that provides both American and Trinidadian breakfast foods and snacks for patrons to enjoy. Soca artists performed throughout the morning, singing the biggest hits for the season. There was even a foam and water machine to cool party-goers off in warding off the hot midday sun. I left the party hot, tired and wet, but the excitement of the fete stayed with us as the group walked to one of the traveler’s homes for Sunday lunch. Although you are not required to do so, I participated in jouvert by pre-registering with an all-inclusive jouvert band, Dirty Dozen Jouvert, which ensured fun and more importantly a safe jouvert experience. A select number of masqueraders, myself included, had giant buckets of mud and spread the mud on other masqueraders throughout the band. The band met from 2AM-4AM for a pre-party where the special “brew” was served from barrels on tap. One of Trinidad’s hottest DJ’s pumped music to get the masqueraders warmed up and ready for the road. I met up with the rest of the group and when the truck horn blew, all of the masqueraders began migrating towards the truck and onto the road. On the road we paraded and danced through the streets until sunrise.

On Carnival Monday and Tuesday, I played mas with Island People Mas. For 2012, the theme for the Carnival presentation was ‘Heroes’ and the title for the section I chose was ‘Ki’. As an all-inclusive band, there were a minimum of three drinks and snack trucks, providing food and beverages available to masqueraders throughout the day, and at least four music trucks that pound the soca tunes of the season for masqueraders to dance and revel in the streets. In addition, a ‘wee-wee’ truck and a medic station, plus shuttles for transport and rest, follow behind the band for the convenience and safety of masqueraders. Despite the nonstop fete schedule until the
end of Carnival, on Ash Wednesday I went to another local nightclub, 51 degrees, for a post-
Carnival low-key performance by a soca artist. During the day, I spent time recuperating and
visiting with family members. On Thursday after Carnival, I went to Maracas Beach, for a small
lime with friends and family. I then traveled back to the U.S. on Friday afternoon.

The Trinidad Carnival experience can greatly vary from traveler to traveler depending on
tavel activities (i.e., fetes/events for which you choose to patronize), where you stay (i.e., hotel
vs. guesthouse vs. friends/family), and how long you stay and with whom. For example, in the
past I have stayed at Monique’s guesthouse, the Hyatt, Crown Plaza, and Hilton hotels. I have
also rented a house with friends and have stayed with family. Reservations for certain fetes occur
annually and others vary from year to year. Every year I make an effort to attend Sunny side up
breakfast fete, for example, but in 2013, on Saturday I attended Panorama for a short while
instead of going out to the Avenue, and stayed at the hotel to relax and watch the Soca Monarch
competition on television Friday night instead of going to a fete. My length of stay has also
varied; I typically stay between 7-12 days. Another example of varying travel experiences is that
many travelers cannot attend annually so the travelers you may attend fetes with or play mas
with can vary. One thing you can always count on is having great time!
Welcome to Trinidad & Tobago…
Maracas Bay
Beach House Ultra All-Inclusive Fete
Scenes from Sunny Side Up All-Inclusive Breakfast Fete
Scenes from Sunny Side Up All-Inclusive Breakfast Fete
Jouvert pictures by Latasha Allen
Last lap in St. James Carnival Tuesday with Island People Mas 2012
Researcher and masquerader Koya Allen at Dengue St. in St. James Island People Mas 2013 Presentation “Re-humanize” Section- Joy Frontline
Researcher and masquerader Koya Allen “on the road” Carnival Tuesday
Island People Mas 2012 Presentation “Heroes” Section - Ki Frontline
Scenes from Trinidad Carnival 2013
Waiting to cross the “big stage” in the Savannah with Island People Mas 2012
A view of the large band Island People Mas coming down the road
The archway to St. James during Carnival
Scenes of Carnival
Scenes on the drive to Maracas Bay
Scenes on the beach at Maracas Bay
The trip began on a grim, but exciting tone. There was some initial concern about the likelihood of our flight being allowed to leave. The aftermath of Hurricane Sandy was far from over, but luckily the airport re-opened in time to allow our flight to take off. Since many of the stores had been closed for several days, the morning of November 1st I had to finish preparing and packing for the trip. Arriving at the airport, I met up with some of the other travelers and we checked into the flight together. We met other members of the travel group after the security gate and went for a late lunch at Buffalo Wild Wings. The last few travelers met us a short while later and we were ready to board the 19-hour flight to Taipei. The plane was huge, but the seats themselves were small. There were televisions on each seat so that you could watch movies or listen to music during the flight. The airline provided a care package that had slippers, an eye mask, toothpaste and a toothbrush. The airline also provided 3 meals; all Chinese-style meals such as noodles, stir fry chicken and vegetables. The layover in Osaka was short, but there was free Wi-Fi in the airport, so I could ‘check-in’ on Facebook and let everyone at home know we arrived safely to the first point on our trip. The trip organizer also took a moment to get all of the travelers together, a total of 14 people, to do introductions and begin getting acquainted. By the time the group arrived in Taipei, despite fatigue, the excitement was renewed, in part for the first Asian stamp in our passports, but also for the simple things like a shower.

The groups schedule was very full of activities. There were a number of optional tours, so not all of the travelers went to every tour for different reasons. Some did not attend because of the additional cost associated with the optional tours. Some wanted additional leisure time to explore the cities on their own or relax in the hotels, and others eventually began to feel that
some of the sightseeing tours were repetitive because it included a lot of different temples and ruins.

In a way, the group experienced Thailand on a road trip. We started south in Bangkok and traveled to the farthest north point of the country by the Golden Triangle where we took a boat tour across the Mekong river to Laos. We then traveled to the Burmese border, but decided not to go across because it did not seem safe; if we went across we would have been there illegally. “We didn’t go across Burma’s border because they wanted us to pay and weren’t going to stamp our passports. (Thailand Field Notes p7)” Each city or town offered different experiences, but a highlight of the trip was the elephant trek. All of the travelers attended this optional tour. The group took small boats along the Mekong River to an elephant camp. There, the travelers split into pairs to ride the elephants. There was a guide sitting on the head of each elephant, which spoke the elephant language and led us on a hike through the forest. Many of the travelers were both scared and excited because we were sitting on small benches positioned on top of the elephants back with a bamboo stick as our guard rail. It was not very sturdy, and you had to move around a lot to keep your balance as the elephant walked. Many of the travelers also bought sugar cane and bananas from the local villagers to feed the elephants during and after the hike. Another highlight of the trip was visiting the Monkey Temple. Despite the name, many of the travelers, me included, did not expect to see monkeys freely roaming the town. It was thrilling and a little frightening, especially when we entered the temple, which was dark and eerie, only to be chased out by bats! Another highlight of the trip included the spas. The travelers went to the spa in each hotel and city. The style and use of spa treatments differs greatly from a typical spa in the United States, so it was interesting to explore this aspect of Thai culture. Some of the travelers did not like the traditional Thai massage; however, the travelers seemed to have a
goal to find the best spa and spa treatment for themselves. One of the spa experiences many found frustrating, which I found extremely relaxing, was at the resort in Chiang rai. The massage tables were outdoors near the river, which was a great way to end a long day of sightseeing. However, for those who had massages scheduled at dusk, they spent their spa experience swatting mosquitoes!

*Damnoen Saduk Floating Market*
The Royal Grand Palace and Emerald Buddha
Local organic and chemical insect repellents
Public restroom at the Floating Market
Taipei, Taiwan Airport during layover
Scenes of a local market in Chinatown
Buddhist Temple in Bangkok
Ayutthaya, UNESCO Heritage Site
Wat Yai Ruins
Ayutthaya, UNESCO World Heritage Site, Wat Yai Ruins
Hilltribe Village - Elephant Trek
Scenes from a local market in Bangkok
Tasting local fruits in a market outside Bangkok
Scenes from a local market in Bangkok
Buying a “Thai Iced Tea” in the local market; in Thailand it’s just Iced Tea!
Scenes from a local market in Bangkok
Lopburi & Phra Prang Sam Yot
“Monkey Temple”
Lopburi & Phra Prang Sam Yot
“Monkey Temple”
Lopburi & Phra Prang Sam Yot
“Monkey Temple”
Thai dinner and folklore show
Thai candle dancing
Scenes of prayer at a Buddhist temple in Bangkok.
Wat Po, Reclining Buddha
Outside of the Dusit Thani Hotel in Bangkok.
Ayutthaya, UNESCO World Heritage Site
Wat Yai Ruins
Ayuttaya, UNESCO World Heritage Site, Wat Yai Ruins
River House Resort and Spa, Chiang rai
Attire restrictions for entry into temples and religious grounds
Insect repellent, citronella candle and incense provided by the River House Resort and Spa during dinner at dusk.
Maikok boat trip on a long-tailed speed boat to Karen Hilltribe village for Elephant trek.
Karen Hilltribe Village for Elephant trek
Scenes during elephant trek: Drying rice in the fields
Scenes during elephant trek
Scenes during boat trip to Laos
Local fisherman
Scenes during boat trip to Laos
Border to Burma
Street vendor making Rotee at the Chiang mai night market.
Trying some freshly made Rotee!
Visit to an elephant camp!
Orchid and butterfly farm
Orchid and butterfly farm
Sky Lantern Farewell Celebration in Chiang mai
Global Axe: Salvador, Bahia, Brazil

Bahia Field Observations: The Experience.

The first day in Bahia was full of activities considering the overnight flight to Rio, and early morning transfer to Salvador. After being greeted by the group’s leader and the conference organizers, we were transported to the first hotel in Salvador. At the hotel, there was a welcome reception to make the check-in process “a little less frustrating (Brazil Field Notes, p2)” and I was able to get an initial sense of the travelers and become acquainted. Before the trip, the organization provided free Portuguese classes and pre-travel sessions on the Brazilian culture and ‘what to expect’, so some of the travelers were already acquainted. Many of the travelers have also participated in events and activities with the organization hosting the conference and tour year round, so they were familiar with each other and possibly had traveled internationally together before as well. After checking in, the group attended a traditional ceremony on the beach and then proceeded to go to Pelourinho Square to participate in what can only be described as their weekly ‘Carnival’ in town on Tuesday nights. A local Samba band played music and we were led through town in a welcome parade. This set the stage for the remainder of the trip.

The first portion of the travel experience was a spiritual health and well-being conference.

“The conference began unlike most, with prayers in traditional African and Afro-Caribbean prayers including one in Yoruba...and the other...in a traditional Cuban religious dialect. After the prayers there was a drummer circle, then performance of the youth ensemble. Then we did something even more uncommon at a conference which was going around the room to introduce yourself to
everyone to discuss why you decided to come to the conference. It became a very emotional circle as people spoke about culture and how/why they came. (Brazil Field Notes, p3)"

The conference did follow a schedule with breakout sessions on various topics including the culture of Bahia, women’s health and spirituality, politics of race and affirmative action in Brazil, community organization and development through Carnival, Bahian music, and environmental conservation issues. Participants chose sessions based on interests; some of the sessions did have restrictions based on gender or age, but this was a minority considering the range of sessions available. The conference took place at the Universidade Federal Da Bahia, Obras de Construcao da Escola de Danca, for the first few days and spent the remainder at the house of the local group Ile Aye. Ile Aye is a group that serves the Bahian community through increasing consciousness and awareness of issues important to Black Brazilians and was the first Black band for Carnival in Bahia. When the conference moved to their house on Friday, August 8th, I described the location of the house as being 30-45 minutes away from the hotel and “in the more Black and poorer area of Salvador (Brazil Field Notes, p16).”

After the conference portion of the trip, the group moved to a different hotel which “is supposed to be fancier (Brazil Field Notes, p24).” However, fancier was relative to the location of the hotel being in a tourist area. Both hotels were near the water, but the first was across from the beach where you could walk on the sand or go for a swim. The second hotel was near a rocky shore and cliff, so despite spectacular views there was no beach. Many of the travelers also noticed the differences in pricing at nearby restaurants, availability of local cuisine and many more staff members at the hotel and restaurants that spoke English. The first hotel was relatively close to downtown and no one spoke English. Many of the travelers frequented a nearby
restaurant for dinner that had popular local dishes such as *moqueca*. Several of the travelers did mention preferring the first hotel over the second for those reasons. The activities of the cultural tour portion of the trip were different from the conference. There were workshops planned for certain days during that week.

“...we went to one of the original compounds/communities with the traditional culture and religion. We took a sacred cooking class where we learned to make some of the foods they would sacrifice to the Orishas. Then we checked out the museum where we bought a book that the museum guide wrote (Brazil Field Notes, p24).”

There were also days where an activity was planned followed by leisure time to explore on your own.

“...we did walking tours of some museums and then went to dinner...there was a singer and guitarist playing which was nice. After we ate we went and took an Afro-Brazilian dance class...Afterwards we went and listened to Samba in the street and danced... (Brazil Field Notes, p26)”
Scenes in Salvador, Bahia
Casa de Iemanja on Rio Vermelho Beach
(Ceremony for Yemeja)
Casa de Iemanja on Rio Vermelho Beach
Casa de Iemanja on Rio Vermelho Beach
Rio Vermelho Beach
Welcome parade with Banda Swing do Pelo from Terreiro de Jesus Square to Largo do Pelourinho
Moqueca at a local restaurant near the Monte Pascoal Praia Hotel
Magary Lord Concert
Dengue education poster at Ile Aiye
Ile Aiye
Elevator Lacarda
View from the top of Elevator Lacerda
Appetizer during dinner at Monte Pascoal Praia Hotel
AFTER we asked to have the meat cooked.
Scenes in Pelourinho
Scenes in Pelourinho
Procession into a terreiro
Sacred foods cooking workshop
Popcorn ceremony
Scenes of Salvador from Ile Aiye
Percussion drums we used in the drumming workshop
Help from lonely planet during dinner in Pelourinho
Igraja do Bonfim
Festa da Irmandade da Boa Morte
*Scenes in Cachoeira*
Farol da Barra lighthouse in Salvador
Mercure Hotel
Project Tamar
Scenes in Pelourinho