Refugee Health, Screening, and Data Collection in the Triangle of North Carolina: What We Know, What We Need to Know & Opportunities Moving Forward

By
Courtney A. Hereford

A paper presented to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Science in Public Health in the Department of Maternal and Child Health.

Chapel Hill, NC

July 8, 2016

Approved by:

_____
First Reader

_____
Second Reader

ABSTRACT

Roughly 80,000 refugee individuals from over 65 distinct countries have resettled to the United States every year since 1975.[1,2] Refugees endure unique health concerns and confront complex challenges to accessing quality health care upon arrival in the country. They demonstrate disproportionately high rates of communicable disease of public health significance including hepatitis B, HIV, parasitic, malaria and tuberculosis infections.[3–7] Accordingly, the US Government mandates refugee health services that target screening, data collection, surveillance and follow-up care for infectious illness and disease.[5–10] Nevertheless, noncommunicable diseases (NCDs)—such as hypertension, diabetes and behavioral/mental illness—arise as the leading cause of death nationally and globally.[5–12] Approximately 50% of adult refugees and 30% of child refugees within the US display at least one noncommunicable disease; yet NCDs are neither systematically tracked nor adequately provided for within local and national health care systems.[5–13] In the near future, unmet chronic health needs will likely surpass the infectious disease burden found in refugee populations resettling to the US, presenting a mounting priority with pervasive implications for American health and economy.[5,7–9]

Though composing a relatively small proportion of the population, approximately 1000 refugees from 40 countries resettle to the Triangle region of North Carolina every year, and arrival rates continue to expand rapidly.[14] North Carolina's immigrant population has grown over 500% since 1980, with a 700-1000% influx observed in major state hubs such as the Triangle.[15–17] Rising concurrently among these highly vulnerable populations are noninfectious health disparities and unmet needs, though relevant data collection remains unsystematic in light of resource deficits at state and local levels. Without targeted tracking of health data among these refugee groups, the Triangle health community remains fundamentally unaware and unprepared to tackle the diversity of illness patterns prevalent as well as the distinct health needs, assets and barriers impacting quality health care access for refugees. This research assesses refugee health and surveillance in the Triangle through a SWOT analysis and advocates for systematic screening, data collection and surveillance of both infectious and chronic health needs. These priority steps are necessary to advance refugee health outcomes and provision in the Triangle.

Objectives The purpose of this research aims to identify the perceived and real health needs, gaps and barriers to adequate health care encountered by refugees within the Triangle. Concurrently, this research examines the strengths, weaknesses, opportunities and threats (SWOT) of the Triangle refugee health system and identifies priority areas moving forward.

Methodology

This research included a survey of the Triangle refugee health field utilizing informal key informant interviews through a snowball sample in conjunction with a thematic review of national and local data, documentation and research pertinent to refugee health. Key informants and accompanying literature were drawn from the North Carolina Refugee Health Program (NC Division of Public Health), Refugee Health Coalition & Refugee Mental Health Coalition (Orange County Health Department), Refugee Wellness (UNC School of Social Work), UNC Gillings School of Global Public Health, World Relief, Church World Service, Center for New North Carolinians (UNC Greensboro), and Cone Health Family Medicine.

Results/Key Findings

Though infectious disease remains a public health priority for the United States, limited data on chronic and noncommunicable health needs neglects a growing concern for domestic health and economic systems. The SWOT analysis presented several challenges and strategies to address data needs and ultimately improve refugee health within the Triangle. Strengths and opportunities include: multidisciplinary university, state and community collaborations for critical service provision and research, specialized health programs and provider advocates, and available grant funding to further pursue data initiatives. Weaknesses and threats include: restrictive, ad hoc data systems and protocol, high health provider autonomy and care fragmentation, state resource deficits, unstable funding sources and requirements, as well as North Carolina's current political climate and lack of endorsement for refugee health needs.

Recommendations focus on mandating and streamlining an initial, comprehensive health screening, assessment and follow-up process for both communicable and noncommunicable health concerns of refugee arrivals to the Triangle. This could be implemented through an integrated health center/clinic for refugees and immigrants via a university-state partnership among the Schools of Medicine, Public Health and Social Work at UNC Chapel Hill, the North Carolina Refugee Health Program, and local health departments. Such multidisciplinary coalitions present promising opportunities for human, fiscal and technological resource sharing and cooperation among faculty, students, staff and community partners. During this time, state data use agreements among Medicaid, primary and private practitioners, national and state electronic databases should also be pursued.

TABLE OF CONTENTS

ACRONYMS

ACA:	Affordable Care Act
BMC:	Boston Medical Center
CBO:	Community-based organization
CDC:	Centers for Disease Control and Prevention
CHA:	Community health assessment
CNNC:	Center for New North Carolinians, UNCG
CWS:	Church World Service
DGMQ:	Division of Global Migration and Quarantine
DHHS:	Department of Health and Human Services
DHS:	Department of Homeland Security
DOS:	Department of State
HIAS:	Hebrew Immigrant Aid Society
INA:	Immigration and Nationality Act
IOM:	International Organization for Migration
LHD:	Local health department
LSC:	Lutheran Services Carolinas
NC A&T:	North Carolina Agricultural and Technical University
NCD:	Noncommunicable/noninfectious disease
ORR:	Office of Refugee Resettlement
PTSD:	Post-traumatic stress disorder
RHA:	Refugee Health Assessment
RHP:	Refugee Health Program
SHAC:	Student Health Action Coalition, UNC
SWOT:	Strengths, weaknesses, opportunities, threats analysis
UNC:	University of North Carolina at Chapel Hill
UNCG:	University of North Carolina at Greensboro
UNHCR:	United Nations High Commissioner for Refugees
USCIS:	United States Citizenship and Immigration Services
USCRI:	United States Committee for Refugees and Immigrants
WRD:	World Relief Durham
Volags:	Voluntary resettlement agencies

INTRODUCTION

With refugees arriving to every American city and state, the United States is currently experiencing its largest wave of immigration since the turn of the 20th century.[5] More likely to arrive from endemic areas, refugees demonstrate disproportionately high rates of hepatitis B, HIV, parasitic infections, malaria and drug-resistant tuberculosis.[3,5,18–21] Accordingly, US law requires that refugee arrivals undergo an initial medical screening and examination that assesses primary public health risks and potential burden of infectious illness. National and global health systems thus prioritize systematic surveillance and treatment of certain communicable diseases of public health concern and localities follow suit.[7]

Nevertheless, even in the most immigrant-focused clinics such as Boston Medical Center, only 43% of immigrant patients had tuberculosis screening, 36% HIV and hepatitis B screening, and 33% received tetanus vaccinations.[3,5] Such indicates that many migrant and refugee patients are not obtaining the basic infectious disease screenings and immunizations as recommended by the Centers for Disease Control and Prevention (CDC). Not only are such health assessments discretionary; local health departments, public and private primary care providers of this initial screening, immunization and follow-up care do not readily identify nor document one's refugee status, complicating adherence to refugee health policy and guidelines.[3,5,18–20] Comprehension of refugee health and health care needs is obstructed further by the mere 54% of US-based health data sets identifying refugee status among patients.[22]

In light of the fixed focus on infectious disease surveillance, greater numbers of refugees are arriving to the country with chronic and noncommunicable diseases (NCDs). Increasing susceptibility to cancers, diabetes, dental, hypertension and heart disease is largely due to limited or disrupted access to health care treatment encountered prior to resettlement during periods of

famine, conflict, poverty, crowded or inadequate living conditions.[3,11,12,21,23] What's more, growing research documenting the high prevalence of extreme trauma and stress refugees endure prior, during and following resettlement contributes to the Triple Trauma Paradigm phenomenon.[18,21,24] Upon relocation within the US, extensive trauma exacerbates a refugee's unique risk for serious chronic illnesses, including diabetes, cardiovascular disease, lung and respiratory disease, hypertension and stroke.[3,6,12,18–20,25–27] Risk factors are further aggravated by isolation, language barriers, low income, lost and lacking social support, as well as unfamiliarity with the complex American health system and accessing health care that is available.[7,18–20,23,24]

Chronic NCDs now account for 61% of mortality and 46% of the burden of disease among low and middle income countries from which the majority of refugees originate.[11] Accordingly, about 50% of adult refugees relocated within the US carry a diagnosis of at least one chronic NCD, 20% with two, and 10% with three or more NCDs.[11] Behavioral/psychiatric disorders related to trauma and stress are likewise of major concern. A recent meta-analysis encompassing more than 80,000 refugees from 40 countries reported that nearly one-third of all resettled refugees bear chronic psychiatric diagnoses such as post-traumatic stress disorder (30.6%) and major depression (30.8%).[21,28–30] Refugees who had fled Cambodia displayed prevalence rates of 62% PTSD and 51% depression.[31] Moreover, in studies of new mothers, 42% of refugee women in the US demonstrated postpartum depression compared to 10-15% of the total American population of women of reproductive age.[18–20,24,32] Yet, only 25 American states provide refugee arrivals with formal mental health screening currently promoted by the CDC.[29]

Increasingly, medical providers must serve people of diverse cultures, needs and means, meeting unfamiliar and multifaceted medical conditions including chronic and psychosocial concerns as well as rare infectious diseases. However, noncommunicable health issues for

refugees are not systematically tracked within the US health system. Requirements of screening, examination and treatment for refugee arrivals do not go beyond infectious disease nor provide clinical preventative health screening as routinely performed in primary care practice.[7] While studies of health disparities, unmet needs and best practice guidelines with global migrants are on the rise, they largely focus on diseases of public health risk, are haphazard and unrepresentative, and/or are not specified to refugee populations.[6–8,18,22,33–35] Limited sampling, reliance on self-report, and unidentified immigrant status are documented methodological issues that bias findings by over and underestimating refugee prevalence of varying health issues.[3,5,9,22] The validity, quality and cultural appropriateness of US screening scales employed in the US are further questionable. These instruments are largely founded upon Western expertise that inadequately capture the cultural diversity of refugee populations arriving to the country as well as their complex social and medical issues and manifestations.[18–20,29,33,34]

The lack of systematic, comprehensive screening, data collection and surveillance of noncommunicable health concerns sustains a great deficit of health knowledge and adequate care coordination for the unique, holistic health needs, barriers and strengths of refugees—and their providers—within the Triangle.[7,18–20,36] Provision of appropriate care is further complicated by compound linguistic, cultural, legal and financial obstacles.[7,9,18–20] As unaddressed chronic health concerns and inequities experienced among resettling refugees grow, such critical gaps in knowledge perpetuate American health delivery systems that are inadequately prepared to serve expanding populations.[7] The extent to which the Triangle health community can target coordinated intervention to refugees relocating to the region is dependent upon the availability of credible, systematic data collection of the diversity of health needs and illness patterns prevalent among these groups as well as the exceptional circumstances impacting care.[36]

Providing refugee health services that accommodate screening and treatment for chronic NCDs and associated risk factors is critical for improving refugee health.[11] At the same time, "regular screening for chronic conditions only makes sense when follow-up care can be provided."[4,p45] Thus, initial health screening protocol must include outreach and enrollment of refugee arrivals to ensure their transition to ongoing primary and specialty treatment. While it is widely acknowledged that refugees lack adequate access to secondary and tertiary care within the US, few studies estimate that refugee groups have satisfactory access to basic primary care from community and federally qualified health centers upon which they rely.[2,4,11,12] However, primary care outcomes and utilization are not systematically tracked; the refugee health community generally concludes that access even for such mainstream services is constrained and inconsistent across the nation.[2,6,8,9,11,12]

Local health departments (LHDs) act as the first contact for the health needs of refugee arrivals; and though they are autonomous from state refugee health programs, LHDs manage surveillance and reporting mechanisms for refugee infectious disease specifically and health generally. Primary and community care contexts thus offer an opportunity to detect NCDs early, track and evaluate health outcomes and access, and provide and refer refugees to services as appropriate.[3,9,11] Nevertheless, given the current unfavorable political climate and the impact of infectious disease outbreaks such as Zika and Ebola, it is unlikely that global and national protocol will shift monitoring and evaluation focus towards NCDs in the near future. As such, systematic and prospective screening, examination and research of refugee health may be more practical within local and community-based collaborations.[9]

Refugee health needs require more than basic and primary health care, yet chronic disease calls for prolonged and specialty care including expensive medications, preventative

health services and education. The burdensome measures associated with NCDs could potentially deplete already scant resources designated for the status quo refugee health care and surveillance protocols for infectious disease.[9] Nevertheless, refugee health is a priority of American public health and financial security.[25] According to a 2014 study by the University of North Carolina at Chapel Hill, immigrants and refugees augment the state economy by a net positive of $27,000 per capita per year—$10 in economic contribution for every $1 spent in social services.[37] However, the wide range of disparate chronic, NCD concerns impacting these vulnerable newcomers diminishes productivity while contributing to growing health costs borne by US society; as unmet health needs of refugees inevitably intensify, social and economic impacts are exacerbated further.[25] Better health information facilitates better health care to make possible gainful employment and income generation that augments the American economy in addition to promoting successful, sustainable resettlement for families and communities.[11]

Without rigorous and systematic health data and surveillance, the status of refugee health within the Triangle remains unclear. Expanded and compulsory screening, surveillance and follow-up care for refugee arrivals are critical tools for creating evidence-based policy and practice that address the unique needs of refugee populations and ultimately improve health outcomes. Concurrently, such evidence will mitigate the growing burden that corresponding unmet chronic health needs pose to local healthcare systems and economies of American communities such as the Triangle.[7,9,11,25]

Significance

Refugees arrive with significant and diverse unmet health needs due to differing health risks, disease exposures, genetic predispositions, social and cultural determinants, and impaired access to appropriate preventative services and treatment.[4,6,7,10,11] In the future, unmet chronic

health issues will likely dwarf the burden of infectious disease found in migrant populations resettling to the US.[8] Presenting a growing concern for the American population more generally, NCDs among refugees will take a socioeconomic toll on local and national health systems.

In contrast, many migrants arrive in comparable (often superior) health to their American counterparts.[7,21,38] Studies point to a notable decline in refugee health status following arrival in high and middle income countries such as the US—as NCDs, chronic and psychosocial health concerns arise. This may be due to acculturative stress endured upon resettlement as well as associated changes in health behaviors such as diet, alcohol and tobacco use and (inadequate) utilization of health services that are available and accessible.[21] The immigrant health paradox conveys a health advantage rapidly lost over time/generations within the US as conditions such as hypertension, diabetes, chronic respiratory disease and obesity set in.[7,9]

Finally, screening beyond communicable disease is not systematically tracked for refugees entering the US health system, though escalating health disparities and chronic NCDs are well documented.[9–11,18] If these issues are not being systematically measured and followed, they do not constitute response, treatment and advancement; no action is taken and disparities sustain and grow. The health system must know which actions are effective and which inequities are changing; and if not, why. As such, noncommunicable and chronic health (as well as mental, oral, visual and women's health) must be tracked to facilitate necessary preventative care and treatment. Not only do refugee migrants require expanded health care attention and targeting to close widening disparities within the US; Americans may have a lot to learn from migrants about lifestyle strengths, such as healthy eating, exercise and stress behaviors.[8,38]

Research Questions

1. What is the status of refugee health and health care in the Triangle?

2. Which health needs and health care barriers are identified by local research as the greatest priorities for the Triangle's refugee population?
3. What are strengths, weaknesses, opportunities and threats to the Triangle refugee health system, and how do we move forward?

BACKGROUND

US Refugee Resettlement

i. Overview

Refugee status is granted to an individual who "owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country."[41,p1] The United Nations estimates that more than 50 million individuals worldwide have been forced to flee their homes as refugees, asylum seekers and internally displaced people.[39] Among these populations, approximately 16.7 million are those living outside of their country's borders with official refugee status designated by the United Nations High Commissioner for Refugees (UNHCR), United Nations Relief, and Works Agency for Palestine.[39,40] The majority spend years residing in overcrowded, under-resourced refugee camps where they must struggle daily to meet basic needs. Those unable to reach an official refugee camp reside in unstable, oftentimes hostile host communities under increasing real and perceived resource scarcity and competition. Escalating tension and civil unrest between surging numbers of refugee arrivals and host communities require that refugees continue to relocate to avoid persistent danger and conflict.[42]

The United States officially began its refugee resettlement process with the Displaced Persons Act of 1948, as 650,000 displaced Europeans were resettled to the country in the wake of World War II.[43] Legislation following permitted admission of those fleeing Communist

regimes in Hungary, Poland, Yugoslavia, Korea, China and Cuba. This wave of refugees was assisted by private religious and ethnic organizations in the US, to establish the public/private partnership underpinning US refugee resettlement today. In 1975, a temporary US Refugee Task Force was created to resettle hundreds of thousands of Indochinese refugees.[43] Finally, Congress passed the Refugee Act of 1980, which standardized the resettlement process and service structure for all refugees admitted to the United States. This Act serves as the legal basis for the current US Refugee Admissions Program administered by the Bureau of Population, Refugees, and Migration of the Department of State (DOS) in unison with the Department of Homeland Security (DHS) and the Department of Health and Human Service's Office of Refugee Resettlement (ORR).[43]

The Refugee Assistance Program (1980), provides federal funding from US HHS and ORR to non-profit, voluntary resettlement agencies (known as "volags").[38,44] Volags work with the US Government to receive refugee arrivals within communities with the perceived capacity to meet their needs.[45] Nine core refugee resettlement agencies and their local affiliates operate within the US to assist newly arrived refugees as they settle into their new communities: Church World Service, Ethiopian Community Development Council, Episcopal Migration Ministries, HIAS, International Rescue Committee, Lutheran Immigration and Refugee Service, US Committee for Refugees and Immigrants, US Conference of Catholic Bishops/Migration and Refugee Services and World Relief.[40,44]

The United States has resettled more than 3 million refugees since 1975, with annual admissions varying drastically from a high of 207,000 in 1980, to a low of 27,110 in 2002.[43] Today, the US resettles approximately 65,000 refugees every year: less than 1/2 of 1% of the world's refugee population of 14-16 million.[2,5,46]

ii. Process

Refugees within the United States refer to the following immigration categories: refugee, asylee, Amerasian, Cuban/Haitian entrants and parolees, Trafficking Victims, and Iraqi and Afghan Special Immigrants.[47] Arriving to the United States as a refugee is an especially complex and difficult process; official refugee status is determined overseas by the UNHCR, and US reception is established by the US Administration and Department of Homeland Security. Every year, the President of the United States consults with Congress and appropriate agencies to designate nationality and processing priorities for refugee admission in the upcoming year.[43,48] Concurrently, the President sets an annual ceiling on the total number of refugees who may enter the country from each global region.[43]

An individual must first fall within designated nationalities and processing priorities to be considered for refugee status. They are then referred for refugee application through the UNHCR, a US Embassy or a relative living within the United States.[48] Via a thorough interview and screening process, officials of the DHS and/or US Citizenship and Immigration Services (USCIS) grant an individual refugee status founded upon a valid persecution claim, extensive criminal background investigation, and physical and mental health screening. Approval of refugee status signifies official admissibility to the United States, though not the timetable. International Resettlement Support Centers then work with the International Organization for Migration (IOM) to conduct pre-arrival medical exams, arrange US transport, and coordinate with volags for resettlement within the country.[48]

Refugee Medical Examination & Health Screening (Appendix A)

i. Overseas

All refugee applicants to the US are required to undergo a pre-entry medical examination as mandated by the Immigration and Nationality Act (INA) and Public Health Service Act.[49] The

purpose of pre-arrival medical examination is to identify refugee applicants with inadmissible health conditions. As all immigrant applicants, refugees are ineligible for US admission if they demonstrate a "communicable disease of public health significance, fail to present documentation of having received vaccination against vaccine-preventable diseases, have or have had a physical or mental disorder with associated harmful behavior, and are drug abusers or addicts."[49,p1] The overseas examination is valid for 3-12 months depending on origin country and health classification.[50] Health-related waivers may be approved or denied by the requesting DOS or USCIS office.[49]

The CDC's Division of Global Migration and Quarantine (DGMQ) conducts global disease screening, surveillance and treatment abroad and communicates this health information to DOS and USCIS.[49,51] To prevent the domestic introduction, transmission and spread of foreign communicable disease, DGMQ's role is to develop and enforce medical screening and examination guidelines and technical instructions for all examining physicians both abroad and domestically. Overseas examination is conducted by approximately 600 "panel" physicians designated by DOS consular officials.[49]

The required overseas examination consists of a medical history, physical examination, and screening/diagnostic testing, with a particular focus on tuberculosis, syphilis and sexually transmitted diseases and vaccinations.[50,51] This risk-based screening approach is founded on medical and epidemiologic factors including seriousness of public health impact, unusual/ unexpected emergence, risk of spread, transmissibility and virulence."Quarantinable, communicable diseases" include smallpox, SARS, cholera, yellow fever, plague, viral hemorrhagic fevers, diphtheria, infectious TB, severe acute respiratory syndromes, and "novel or re-emergent influenza viruses [with the] potential to cause a pandemic."[51,p1] Also included are

substance abuse and disorders of "physical or mental abnormality, disease or disability […] with associated harmful behaviors."[50,p1] Since 2010, pre-arrival testing for HIV is no longer required, and treatment for parasites is given to groups based upon country of origin.[3]

ii. Domestic

US "follow-up" medical examination for newly arrived refugees is carried out by approximately 5,000 civil surgeons selected by USCIS district directors.[49,52,53] This post-arrival medical screening is not mandatory, but is "highly recommended" within 30 (to 90) days of arrival to coincide with refugee Reception and Placement services.[52,53] The 1995 ORR Medical Screening Guidelines for Newly Arriving Refugees (and corresponding reimbursement rates) establishes a minimum standard of care for states, many of which carry out additional requirements to the tool.[52,53] Core components include medical history and physical exam, communicable disease screening, laboratory tests and blood work. The physical exam should assess nutritional wellbeing, reproductive health, mental health, dental health, hearing and vision.[53] The PRIME-MD PHQ-9 is the recommended tool to screen mental health, assessing suicidal and homicidal ideation and psychiatric crisis for which referrals should be made.[52,] A review of overseas medical records is also conducted and includes: Medical Examination for Immigrant or Refugee Applicant, Chest X-Ray and Classification, Vaccination Documentation, and Medical History of Physical Examination worksheets.[53]

Screening should be performed by a qualified licensed health care professional and an interpreter if necessary, with follow-up referral to a primary health care facility that receives the results of both domestic and overseas examination.[53] ORR only funds the basic physical exam, communicable disease screening, laboratory tests and blood work. Preventative health interventions that are covered by ORR include incomplete immunizations and vitamins.[53] States

are compensated by ORR up to and not exceeding a calculated average of Medicaid reimbursement rates; childless adult refugees receive time-limited Refugee Medical Assistance for which coverage is different.[53] As concluded by the Orange County Health Department community health assessment in 2011, "Overseas screening is required before entry, but it incompletely assesses infectious diseases in refugees. Domestic health assessment has the potential to provide more comprehensive assessment for infectious diseases."[55,p184]

North Carolina & Triangle Refugee Resettlement (Appendix B)

Facilitated by the US Refugee Act (1980), North Carolina began resettling refugees of the indigenous Montagnards of Vietnam in the early 1980s.[15,41] The state has since undergone a rapid demographic shift, with the immigrant population increasing 551% since 1990. Within the Triangle and comparable hubs such as Greensboro, Charlotte and Winston-Salem, the refugee and immigrant population has increased between 700-1000% in this time.[15–17,37] North Carolina has resettled about 4% (nearly 20,000) of the half million refugees admitted to the US since FY2008.[14,43] Approximately 2,443 refugees from 30 distinct countries and national territories arrived to the state in 2014 alone, reflecting a fairly steady rate over the past decade.[56] The majority of recent arrivals stem from southern Asia, the Middle East and east-central Africa.[43,56,57] Representing various statuses of income, education, family, occupation as well as ethnicity, race, language, religion, belief and value systems, the state's refugee population is an extremely diverse collection of people. Though their experiences and motives are as varied as the nationalities and ethnicities represented, all refugees arrive to the state seeking security, freedom and the opportunity to establish a sustainable livelihood for themselves and their families.

The US Government provides financial funding through grants to the state, voluntary resettlement agencies (volags) and additional refugee aid organizations, with the North Carolina

Department of Health and Human Services acting as the state's lead refugee resettlement office. State refugee programs received $8.5 million in funding for the ORR in FY2012.[45,57] These include short-term Cash and Medical Assistance (29.6%%), social services (24.7%) such as job and vocational development and English as a Foreign Language, as well as preventative health resources (1.8%).[44,45] Matching grant services (24.3%) are awarded by private agencies and administered by volags to provide intensive case management services within 120 days of arrival. Discretionary funding may also be awarded to these agencies for additional self-sufficiency programs.[57] While these services target a refugee's initial 8 months in country, few special social services (such as pilot employment programs) extend to eligible individuals up to five years following arrival according to need and availability.[44]

Augmented substantially by community partners and volunteers, national and local volags provide the bulk of resettlement services in order to meet refugees' immediate needs as well as promote long-term self-sufficiency. Eight affiliate volags of national resettlement agencies operate within the state in the major migrant hubs of Charlotte, Greensboro, Durham, Raleigh, High Point, Wilmington and New Bern.[44,45,57] Two primary health goals of Triangle volags' work with refugee arrivals (Appendix C) include the recommended health department screening (within 30 days) and the initial primary care appointment (after 30 days).[58]

- Lutheran Family Services in the Carolinas: ***Raleigh, Chapel Hill, Durham* (1987).[59]
- USCRI North Carolina: ***Raleigh* (2006).[59]
- World Relief: *Durham*, High Point (2007).[59]
- Church World Service: ***Durham*, Greensboro (2009).[59]
- Carolina Refugee Resettlement Agency: Charlotte (1996).[44]
- Catholic Charities Diocese of Charlotte: Charlotte (1990s).[44]
- North Carolina African Services Coalition: Greensboro (1997).[44]
- Diocese of East Carolina Interfaith Refugee Ministry: Wilmington, New Bern (1990s).[44]

NC Refugee Health Program (Appendix D)

Domestic services for newly arrived refugees are implemented through the NC Refugee Health Program (RHP), which mandates an initial comprehensive health examination to identify or exclude any communicable diseases of public health concern. Specifically, RHP "attempts to ensure that health problems of newly arrived refugees that could pose a threat to the public health or interfere with the effective resettlement of the refugees are promptly identified and treated."[47,p12] This goal is implemented through the Refugee Health Assessment (RHA): a medical screening that ideally includes a brief medical history and document review, physical exam, vaccinations and upgrades to immunization status, and testing for tuberculosis, hepatitis, ova, parasites, and sexually transmitted diseases (Appendix A). As appropriate, the assessment also provides additional lab tests, interpretation, referrals and follow-up services to help refugees "achieve self-sufficiency and successful resettlement as soon as possible after arrival."[60,47,p12]

State funding is focused upon the RHA's three major components: a Communicable Disease Screening, Physical Exam, and lab and blood work.[47,61] These services are typically carried out by local health departments (or private clinics) and managed through a designated RHP Contact: Jennifer Morillo, NC Refugee Health Coordinator. As the coordinating body for refugee health, RHP operates within the Division of Public Health and fully funded by the Department of Health and Human Services (Administration for Children and Families, and specifically the Office of Refugee Resettlement).[47,60] RHP also disseminates up-to-date overseas screening information to local health departments (LHDs) through the CDC. However, while this information is available online, state LHDs do not have the capacity to retrieve it.[61] Accordingly, the medical information refugees carry with them is typically not the most current, complicating LHDs' ability to meet both requirements and most pressing needs during the RHA.[61]

RHP works predominantly with eight core LHDs who receive the majority of state arrivals: Guilford, Mecklenburg, Durham, Wake, Craven, New Hanover, Forsyth, Orange County.[61] Other counties receive some training and consultation from RHP as needed. LHDs with significant numbers of refugee arrivals are designated to carry out the RHA and are supplemented with Refugee Preventative Health Funds to assist with administrative costs of providing and reporting these services for the state—including interpretation services.[47,61] Local interpretation is largely provided through community health centers, such as Durham's Lincoln Community Health Center via language line.[62] LHDs report to RHP on a monthly, quarterly or as needed basis.[61]

The domestic refugee health program revolves around the communicable disease screening, immunization and vaccination update provided upon arrival via the RHA.[61] Yet, this initial visit is not a thorough exam that can identify undiagnosed problems and major health needs. Moreover, refugees are not required to have the health screening, nor are they mandated to go to one central place to receive it. Refugees are "encouraged" to go to their LHD, where data will be reported to the RHP. At the same time, LHDs are autonomous from RHP and vary substantially in services and programs offered.[61] For instance, most LHDs do not have a refugee/immigrant coordinator position (as portrayed by Orange County's Immigrant and Refugee Health Manager) who acts as a critical advocate for sustaining a high screening rate as well as bridging refugee and immigrant community and specialized care.[61]

Thus, LHDs often refer refugees to external primary and private practitioners who can provide physical examination and follow-up care but do not track utilization nor outcomes—thus critical data is lost.[4,61,62] Federal funding and Medicaid reimbursement for refugee services are a constant ebb and flow. Providers outside of LHDs receive no funding from RHP and thus have

no system nor requirements to report refugee health data to the state.[61] Federal grants have provided surveillance funding for private-state partnerships in refugee health data collection in neighboring states. However, while the state RHP is looking into data use agreements with these private providers, NC has applied but has not been awarded these surveillance funds.[61] As medical care becomes increasingly complex under tightening budgets and finances—and unique advocate positions such as Immigrant and Refugee Health Manager are not in place—refugee serving programs are generally cut first.[11,61]

Furthermore, while volags confirm initial entry into primary and ongoing care for refugee arrivals, no systematic mechanisms are in place at state or local levels to assure or track this transition.[38,61,62] Though such initiatives are being proposed, no systems currently exist to capture comprehensive primary, mental and behavioral health care nor medical home designation and Medicaid utilization.[61] The minimum refugee health data collected and reported to RHP by LHDs—reflecting "only a moment in time"—must be entered manually by Morillo.[61] As the single staff of the NC Refugee Health Program, Morillo is under-resourced to maintain data entry that is current and readily accessible for both federal and local actors.[61] RHP currently strives to transition to an online database so that providers at LHDs could input their data electronically; however, they have not received the requested grant funding necessary to complete and implement this overhaul.[61]

METHODS

This research included a survey of the Triangle refugee health field utilizing informal key informant interviews through a snowball sample in conjunction with a thematic review of national and local data, LHD community health assessments, documentation and research pertinent to Triangle refugee health. Findings are presented in two spheres: data and system.

Data findings represent local arrival and demographic data as well as prevailing health issues and barriers identified within the Triangle. The SWOT analysis framework (strengths, weaknesses, opportunities, threats) was utilized to compile system findings. Key informants and accompanying literature were drawn from the North Carolina Refugee Health Program, Orange County Health Department's Refugee Health Program and Coalitions, UNC School of Social Work's Refugee Wellness, UNC Gillings School of Global Public Health, Church World Service and World Relief Durham, UNCG Center for New North Carolinians, and Cone Health Family Medicine.

Triangle Data Findings

i. Arrival data (Appendix B)

North Carolina has resettled approximately 3.5% (19,633) of the 563,217 refugees admitted to the US since FY2008.[14,43] Nearly 30,000 refugees from 40 different countries and territories have arrived to the state since 2002—from a low of 581 arrivals in FY2003 to 2,475 in FY2015.[14,56] The majority of recent arrivals originate from southern Asia, the Middle East and east-central Africa, specifically: Burma (33.2%), Bhutan (17.6%), Iraq (10.7%), Somalia (6.9%), Democratic Republic of Congo (5.0%), Cuba (3.6%), Eritrea (3.0%), and Sudan (2.9%).[43,56,57] Similar to state hubs of Guilford and Mecklenburg Counties, the Triangle has exclusively resettled 31.0% (6,087) of the state's refugee arrivals since FY2008, for an estimated total of about 1000 refugee arrivals every year. The majority of arrivals to the Triangle include: Burma (33.7%), Iraq (14.4%), Somalia (11.4%), Vietnam (8.9%), Democratic Republic of Congo (8.3%) and Bhutan (5.4%).[14,63]

***Durham County*:** Durham has received about 9.6% (1,888 or ~240/year) of annual refugee arrivals to the state since 2008.[14,38,63] The majority are from Myanmar/Burma, Iraq, and Somalia.[14] Between 2008 and 2010, Durham experienced a 450% increase in refugee arrivals.[38]

***Orange County*:** Chapel Hill and Carrboro account for approximately 4.0% of the annual state total of refugee arrivals. Of the 936 arrivals since FY 2005-2006, the majority (75-95%) come from Myanmar/Burma and are of Karen (51.3%), Burmese (16.8%) and Chin (6.7%) ethnic and social identities.[14,64,65] The remaining majority come from Iraq, Iran and the Democratic Republic of Congo, along with individuals from Laos (Hmong), Bhutan/Nepal, Colombia, Cuba, Cameroon, China, Eritrea, Malaysia, Russia and Haiti.[14] Local agencies and interpreters working with Burmese estimate the current population to be about 1000 individuals.[65] As emphasized by one Triangle volag director, "Orange County is fantastic [with health provision for refugee arrivals], but they don't handle too many."

Wake County: Raleigh has resettled approximately 18.4% (6,087) of refugee arrivals to the state since FY2008. The recent majority of arrivals originate from Burma, Democratic Republic of Congo, Iraq and Somalia.[14]

ii. Screening

North Carolina demonstrates a communicable disease screening rate of 78-85% (or approximately 2100-2400 arrivals), while a mere 31-37.5% of refugees obtained the recommended physical exam in 2014.[38,47,61] Though the Triangle does not routinely meet the 30 day screening guideline, NC RHP perceives screening rates to be relatively high.[61] Durham County has a screening rate of 83% within 46 days, Wake of 82% within 97 days, and Orange County is unknown but expected to be higher than county counterparts.[38,61] Health examination and communicable disease screening for refugees arriving to the Triangle are carried out by:

- ***Durham*:** Durham County Health Department, Durham County Human Services (Refugee Health Clinic)
- ***Orange*:** Orange County Health Department
- ***Wake*:** Wake County Human Services.[55,62]

Nonetheless, state and local screening rates are low when compared to those with comparable numbers of refugee arrivals. In FY2014, Minnesota (2,232 arrivals) showed a 98-

99% screening rate;[66] Illinois (2,578 arrivals) a 99% rate;[67] Florida (3,519) at 95-98% rate.[56,68] The Refugee Health Technical Assistance Center estimates that half of American states demonstrate a screening rate above 90%, while less than one-fifth (<10 states) have a 75-89% screening rate—though exact figures for additional states could not be located. Only 20% of these screenings were conducted within the 30 days of arrival.[13] Due to limited data and evaluation, it remains somewhat unclear how North Carolina's screening outcomes contrast with counterparts. Absent and delayed screening likely reflects both unrealistic national guidelines and systemic barriers as well as state-specific gaps—a critical question area to pursue. As the CDC asserts, "population-specific guidelines do not exist [for] medical screening for newly arrived refugees, which emphasizes the importance of local epidemiologic data."[69]

iii. Health issues

As determined by official refugee status, the majority of arriving refugees have experienced trauma, physical deprivation, direct conflict and violence, and in many instances, torture and human rights abuses.[6,11,12,23,24] Deficient health care prior to resettlement often contributes to chronic illness requiring health care attention within the United States.[2,6,8,11] The process of fleeing their home country, arriving and resettling within a new country present persisting sources of hardship. The culmination of these experiences (as outlined by the Triple Trauma Paradigm) has a well documented, immense impact on the physical and emotional health of refugees in the US.[10,11] As compared to both immigrant and native-born counterparts, refugees demonstrate disproportionately high medical conditions, both physical and behavioral/ psychiatric.[2]

Communicable/infectious

- M. tuberculosis and TB-related conditions: 37% in refugees of Durham[3,12,23,38]

- Intestinal parasites: 22% in Durham (recent decrease with increased pre-arrival treatment) [23,38,61]
- Hepatitis B[3,12,23]
- HIV infection[5,12,23]
- Child lead blood levels[3,12,23,61]
- Sickle cell anemia [3,12,23,61]
- Malaria [3,12,23,61]
- Under-immunization[12]

Noncommunicable, chronic/acute

- General: 50% of adult refugees in US with one or more NCD; 18.4% with two or more; 10% with three or more[11]
- Hypertension/heart: 13.3% of adult refugees in US[5–12,38]
- Obesity and overweight: 54.6% of adult refugees in US[11]
- Oral/dental, periodontal disease, caries, gingivitis (noted as most common problem in Orange & Durham)[38,64]
- Nutritional deficiency and malnutrition (noted in Durham refugees of Burma)[12,23,38,61]
- Diabetes[5–12,38]
- Vision/optical[12,38,64]
- Female gynecological needs[12]
- Bed bugs[55,70]
- Tobacco and betel nut use[12,55,70]
- Chronic disease with poor management[5–12,38]

Psychosocial

- Behavioral/mental health diagnoses are most common NCD for refugees in US: PTSD, major depression, trauma-related stress, psychological and physical manifestations[11,18–20,23,24,26–30,32]
- Domestic violence, child abuse and neglect[70]
- Mental/developmental/physical delays in children[12]
- Sexual assault[12]

- Substance use/abuse[12,55,70]
- Division within ethnic groups originating from same country (noted in Orange refugees of Burma)[55,64]

iv. Health care barriers

Refugee

- Financial restraints and high out-of-pocket costs[2,12,23,38,55]
- Limited safety-net clinic access and availability (wait times, hours of operation)[38]
- Language & interpretation (problematic reliance on phone or family interpretation) [6,12,18,23,24,38,55,61]
- Culture & health literacy (lack of understanding of condition; shame, stigmatization, help-seeking)[12,18,23,38]
- US health care system literacy (unfamiliarity with system and navigation, lack of knowledge on insurance and care options)[2,8,11,12,18,23,55]
- Stigma and mistrust in health care and medical providers [2,8,11,12,18,23,55]
- Negative experiences with law enforcement and governmental authorities[24,55]
- Transportation[38,55]
- Time limited Refugee Medicaid and Refugee Cash Assistance (inability to navigate/assimilate to health system in this time)[2,6,11,38]

Provider

- Time constraints (longer appointments due to interpretation and complex needs)[12,23,38,55]
- Unfamiliarity with refugee requirements (complex screening, entitlements, time limits)[12,23,55]
- Unfamiliarity/cultural incompetency with refugee health (needs, experiences, culture, communication, trust by both provider and community)[3,6,11,12,23,55]
- Inadequate, unavailable interpretation (very expensive telephone interpretation not reimbursed by Medicaid) [6,12,18,23,24,38,55,61]
- Health systems overwhelmed by rapid increase in refugee arrivals[8,38]

v. Major themes

Health Care Access

Obstacles and barriers to accessing health care is one of the greatest issues faced by refugees resettling to the Triangle. As mandated by the ORR and overseen locally by NC RHP, refugees should receive infectious health screening within 30 days of arrival. Most arrivals are eligible for Refugee Medicaid (or Refugee Medicaid Assistance) health care in their initial eight months in country. Oftentimes serving as the first provider in contact with refugee arrivals, LHDs are encouraged to refer refugees to primary care but are not required to do so. Though screening may identify health issues—both communicable and noncommunicable—and referrals made, refugees meet great challenges trying to obtain primary care services that are appropriate and affordable. Thus, many refugees within the Triangle report going months without critical treatment and medication.[55]

All legally-residing immigrants (insured or uninsured) can receive primary care from a federally-funded health center as well as some private clinics that provide a sliding scale service fee. Access points for primary health care for refugees resettling within the Triangle n ad-hoc and continually changing pathway:

- ***Durham****:* Lincoln Community Health Center, Duke Outpatient Clinic, Lyon Park and Walltown Clinics[38,62]
- ***Orange****:* Piedmont Health Services/Carrboro Community Health Center, UNC Family Medicine (Chapel Hill)[55,62]
- ***Wake****:* Capital Physicians Group (Raleigh)[38]

Integrative Primary and Behavioral Health Care

While refugees face great obstacles attempting to access an unclear primary care system in the Triangle, the "safety-net clinics" outlined above do not provide specialty and behavioral

care.[38,p50] In Durham County, all uninsured residents are eligible for Duke Medical Center's patient navigation program, Local Access to Coordinated Healthcare (LATCH). Specialty medical care can be received through Project Access as donated by local physicians. Although many health resources exist in the Triangle, these programs continue to operate beyond capacity with long waiting lists for needed services.[38] Exacerbated by the complex barriers refugees meet when attempting to access affordable health care, of this initial eight month coverage worsens already suboptimal health care utilization patterns for chronic needs. Refugees are more likely to exclusively seek emergency medical care, postpone medical appointments, miss follow-up appointments, and not fill necessary prescriptions.[55,71] Such behaviors reflect a lack of adequate orientation and navigation through the US health care system while presenting mounting health care costs for American society.

Refugees face exceptionally high mental health concerns, particularly pertaining to symptoms of trauma, anxiety, and depression. Without adequate access to integrative care, refugees are disproportionately seeking and relying upon emergency medical services for chronic, unaddressed mental health and psychosocial needs.[55,71] As mental and behavioral health screening is not required by the national ORR nor NC RHP, it is not being conducted in any regular or systematic way; it thus remains unknown which refugee trauma and psychosocial health concerns the provider community understands and deals with. The need for integrative refugee health data systems and programs beyond US required health screening is evident. At the same time, developing a comprehensive, multidisciplinary program to address all of the health care needs of refugees resettling to the Triangle is an enormously difficult—currently infeasible—task.[36] A looming question centers on how the Triangle refugee health community begins to integrate primary and mental health care across an undefined health system that is not

wholly accessible, affordable and culturally appropriate to respond to (and ideally prevent) the varying unmet needs of refugees.[36]

Health Care Navigation

Most refugees have eight months of Refugee Medicaid or Refugee Medical Assistance (for childless adults without disability) before they become subject to standard eligibility requirements.[23,61] Within this limited period of time, they are expected to acclimate to US life while learning to navigate the complicated US health care system. Refugees must be aware of health requirements and options, learn to make appointments, understand the referral process, paperwork and travel logistics, as well as socio-health norms and expectations [2,8,11,12,18,23,55] Furthermore, health knowledge, beliefs and practices are extremely diverse within these groups to further complicate health concerns and care seeking behaviors.[55]

Furthermore, the Affordable Care Act—including registration, enrollment and the individual insurance mandate—is not easily understandable for newcomers, and navigators are largely unavailable to assist individuals with this process.[2,61] For instance, Chapel Hill's Transplanting Traditions works with immigrant farmworkers and reports high drop-out rates of local participants who have not known to enroll in ACA health insurance and/or have not been able to access sufficient care following enrollment. Suffering from chronic conditions left largely untreated, refugee and migrant participants are leaving the program with their work and employment options greatly compromised due to persisting health issues.[24]

Translation & Interpretation

The local deficit of linguistically and culturally competent translators and interpreters is well-documented throughout the Triangle. Adequately trained, in-person translation is quite limited, so that language lines are increasingly relied upon in health settings. However,

translation services of any kind are expensive; though some are covered with supplementary funding for refugee health and resettlement, these services are generally not reimbursed by Medicaid.[36,38,55,61,64] Moreover, the additional expense associated with longer appointment time due to language, health literacy and the complexity of refugee health issues and needs pressures providers to limit if not exclude refugee clientele.[12,23,55]

Interpretation itself presents further obstacles. As telephone services have been transitioned in to replace family interpretation (which presents ethical issues), this serves as another layer impeding the patient-provider relationship and trust-building that ultimately impact refugee health and health care quality. Mistrust and stigma are noted obstacles in refugee health access. A health provider-patient relationship requires not only access, but also mutual understanding, confidence and respect that limited interpretation resources may encumber.[12,23,24,55]

Data Collection

The State Refugee Health program operates beyond capacity, without sufficient human and technological resources (i.e. electronic database) to manage refugee health requirements for infectious disease screening and data collection.[61] Several key health departments across the state (including Orange County) demonstrate a close working relationship with NC RHP, reporting communicable disease and immunization data to the state on a monthly or quarterly basis.[61,62] Orange and Durham County Health Departments also include more comprehensive assessment of refugee/immigrant health in their three-year community needs assessments.[38,61,64] However, in most cases, LHDs provide a limited initial exam that does not identify undiagnosed problems and major health needs.[62] Refugees are referred to private practitioners who can provide extended and follow-up care; still, these entities do not work with RHP and thus have no system

nor recommendations to report data collected.[61] Data sharing and surveillance among local and state partners is challenging and currently restricted to infectious disease. [5–12] Though not awarded, RHP has applied for federal surveillance grants to fund private-state partnerships in refugee health data collection. Nevertheless, cases of refugee NCD and chronic illnesses are not systematically tracked, nor are primary and specialty healthcare utilization and access.[61]

System Findings: Local SWOT analysis

The SWOT analysis (strengths, weaknesses, opportunities, threats) is a strategic tool increasingly used within the health care and business sectors.[72] It analyzes an organization's internal capabilities (strong and weak factors) versus external developments (opportunities and threats). In this way, the SWOT analysis is a useful instrument to manage and mitigate challenges impeding refugee health initiatives within the Triangle; at the same time, strategic options for progressing the field may be identified and developed.[72] The following SWOT-analysis has been employed as a final strategic step in this research concluding the investigation of literature, key informant and local data outlined above.

	Helpful to achieving objective	Harmful to achieving objective
Internal (organizational) origin	*Strengths*	*Weaknesses*
External (environmental) origin	*Opportunities*	*Threats*

<u>i. Strengths</u>

- **Communicable disease screening rate:**

  The Triangle demonstrates an initial RHA screening rate of 78-85%, due in part to the close working relationship among local volags (CWS, USCRI, LSC, WRD), LHDs and NC RHP. LHDs' screening rates and general health findings are reported by monthly/quarterly (or as requested) to NC RHP, who then reports an RHA overview to the federal government on a trimester basis.

- **LHD advocates, research & coalitions:**

  Unique positions located within health centers—such as the Immigrant and Refugee Health Coordinator at Orange County Health Department—are likely to come into contact with refugee arrivals early and thus play a pivotal role in ensuring initial screening and assessment as well as facilitating primary and ongoing care for more comprehensive health needs. Furthermore, these local actors are critical for expanding refugee health advocacy and research through three-year CHAs along with coalitions such as Orange County's Refugee Health and Refugee Mental Health Coalitions and Wake County's recently initiated Refugee Medical Group.

- **Community health providers:**

  Lincoln Community Health Center and Duke Outpatient Clinic provide significant health care resources for refugees in the Durham area, along with Orange County's Carrboro Community Health Center. The Refugee Health Clinic operating within Durham County Human Services also provides medical care specifically to refugees. Durham's El Futuro and Orange's Refugee Art Therapy Institute, Transplanting Traditions, Orange Literacy and Refugee Support Center are examples of key community organizations impacting holistic refugee health needs.

- **University research & service provision:**

  UNC's Student Health Action Coalition (SHAC), Refugee Health Initiative (School of Medicine), and Refugee Wellness (School of Social Work) as well as Duke's Refugee Resettlement Project (Kenan Institute for Ethics) provide critical, more comprehensive health services and research for the local refugee population. UNC's Refugee Wellness in particular provides clinical mental health care and screening as well as social support groups for the refugee community. Fueled by students and distinguished staff, these multidisciplinary groups are essential for building and leveraging community partnerships and available human, fiscal and technical resources. Graduate and doctoral students serve as interns and researchers for area volags, LHDs and refugee-serving organizations. Moreover, organizations like these who contract with NC RHP utilize an electronic information system ("RIS") to gather data on services provided refugees (though not on findings).

- **Grant funding:**

RHP's transition to an online database has been initiated to facilitate direct data entry from LHD providers; however funding/resources have not been provided to complete and implement this endeavor. Multidisciplinary teams (RHP/volag/UNC) have applied for federal surveillance grants but NC has not been awarded. The Refugee Health Promotion Grant has provided temporary medical/ACA navigators at select LHDs and volag centers, though this may not be renewed. The state also provides some funding to LHDs for interpretation.

ii. Weaknesses

- **Small refugee population:**

  Refugees are a small percentage of the state and Triangle population. Though the total resettled population is much greater, annual refugee arrivals only account for approximately 0.1% of Triangle inhabitants. As such, refugee health generally does not garner much attention at the state and local level. Refugees (along with migrants of all designations) are by and large lumped into the immigrant category for state and local research. Only in recent years have LHDs (Durham and Orange County specifically) included refugee health in their county health assessments. This is problematic, as the unique needs of refugees (i.e. NCDs, specialty and emergency medical care utilization) cannot be adequately studied; without sufficient evidence, health needs remain unmet.

- **Communicable disease screening rate:**

  The state and Triangle screening rates (78-85%) are lower than estimates from comparable states such as Minnesota, Illinois and Florida, for which screening data can be located. Because the initial RHA is voluntary, refugee arrivals (and their providers) are not required to obtain an initial health visit, accounting in part for the 15-22% lapse in NC health screening and associated data.

- **Data, screening and surveillance:**

  It is at the discretion of every state to devise their own refugee health systems and procedures, including exams, reporting and funding mechanisms. The federal Office of Refugee Resettlement only encourages surveillance of communicable disease, vaccination and immunization prevalence through LHD utilization, while adequate execution of such recommendations vary as supervised by state and local levels. Furthermore, as no indicators are tracked beyond basic LHD screening, communicable and chronic disease, mental and

behavioral concerns as well as Medicaid utilization, primary, private and specialty care are not systematically followed. Thus, there is no clear indication of the greatest refugee health concerns, which services refugees are able to use and which issues to access they encounter. Lastly, as initial assessment for refugee arrivals is the sole focus, the health of in and out-migrants (refugees leaving and relocating to the Triangle) are not accounted for.

- **Health provider autonomy:**

  LHDs are autonomous from the RHP; thus they vary not only on services available to refugees, but also the data they collect and report as well as the referral and support they provide for critical ongoing care. Private practitioners are likewise independent from RHP and have no incentive to report data collected to the state. There is little, varying communication and coordination among these independent health actors; the responsibility thus falls to refugees and unique helping organizations/advocates to bridge screening and follow-up health needs between the initial RHA screening and ongoing care.

- **State resource deficit:**

  The NC Refugee Health Program (RHP of DHHS) has ongoing human and resource constraints impeding timely and comprehensive data collection across local and state levels. Though a state-wide electronic refugee health database has been initiated to ease information issues, this has yet to be completed. While the CDC's electronic disease notification systems provides up-to-date, overseas information for coming arrivals, local LHDs currently lack the technological infrastructure to access and retrieve this critical data themselves. Furthermore, though RHP foresees potential to use Medicaid to track health care issues and utilization by refugee status, this is currently not feasible given the Medicaid office's own resource deficits. Lastly, the competent and affordable community and safety-net clinics available to local refugees are over capacity; long waiting lists and limited (largely donated) services greatly restrict refugee access to chronic and specialty care.

- **Refugee health funding:**

  State and federal funding for refugee health is specifically linked to the initial health screening and assessment (RHA) of arrivals. These resources are also quite unpredictable; so that funding and services available for refugee health are constantly shifting—including those for data collection and surveillance needs. Fees for quality interpretation are expensive, and the limited, variable reimbursement provided is never sufficient to covers associated

costs. Medicaid-funded services are likewise limited and changing, sustaining competition among refugees seeking highly limited and coveted locally available health care.

Opportunities

- **Integrated, community-based health provision:**

  Community-based clinics have integrated essential, extended health services into their regular programming, such as the on-going collaboration among UNC's Refugee Wellness program with Lincoln and Carrboro Community Health Centers that provides mental/ behavioral health screening, services and referral to clients. As CBOs serve a core immigrant and refugee base, multidisciplinary partnership and funding can be enhanced to take on more like projects across the Triangle. Continual multidisciplinary collaborations with Triangle university partners—across departments, staff and students of public health, social work, nursing, medicine, etc.—provide powerful leverage points for such partnerships. Further exemplifying these initiatives include Duke's Refugee Resettlement Project, UNC's SHAC and Refugee Health Initiative and partners including RHP, Triangle volags, health departments and refugee-serving community organizations.

- **Data collection:**

  RHP contractors (such as UNC's Refugee Wellness) currently utilize an electronic information system (RIS) to gather data on services provided that could be expand to record more comprehensive health findings; such a system has potential for adaptation and implementation with LHDs and additional providers as well. Similar to other states, RHP is in process of creating a statewide electronic database for direct data entry by LHDs to facilitate systematic, timely collection of health data while easing resource constraints at local and state levels. Moreover, LHDs must conduct community health assessments every 3 years, and Durham and Orange County included refugees in their most recent CHAs. Though LHDs operate independently from RHP with assessment of priority populations at their discretion, they are the primary, initial health contact for refugee arrivals. Thus, these assessments provide a significant opportunity to collect and assess refugee health needs and priorities. Furthermore, RHP is pursuing data use agreements with private refugee providers and state Medicaid to better track refugee health issues, utilization and reimbursement by status. Lastly, electronic disease notification systems (real-time origin country outbreaks and

arrival prevalence) are also currently being connected and expanded across states and countries similar to the Research Triangle.

- **Grant funding:**

  Though RHP has applied and has yet to be granted, surveillance funding for refugee health is available to states to facilitate the state electronic database as well as data use agreements with private providers and state Medicaid. RHP has also worked with partners on critical health initiatives, such as medical interpretation training for local refugees, health system navigators at volags and LHDs, and establishing a treatment center for survivors of trauma and torture at UNC Health Care. Though several key grants have not been awarded to NC, RHP continues to actively apply and pursue such possibilities.

- **NC models:**

  Center for New North Carolinians: (2001) was established by the University of North Carolina at Greensboro (UNCG) to provide "research, training, and evaluation for the state of North Carolina in addressing immigrant issues; collaboration with government and social organizations to enhance responsiveness to immigrant needs; and community support to provide training and workshops."[73] CNNC initially began out of UNCG's Department of Social Work and school faculty, staff and community leaders as a Task Force on Outreach to New North Carolinians in 1997. This group then petitioned the UNC Board of Governors to establish CNNC as a specialized resource for the State of North Carolina and its economic, health and educational systems. One of CNNC's pivotal services is the Immigrant Health ACCESS Project to enhance connection to medical health care as well as provide socio-health research, training, and outreach for health needs. Operating with only ten full-time staff and more than 100 interns, AmeriCorps and community volunteers across the state, CNNC largely sustains upon the human capital provided by numerous universities surrounding Greensboro (UNCG, NCA&T, Greensboro College, Guilford College, Elon University, Bennett College).[73]

  Cone Family Medicine Refugee and Immigrant Health Clinic: (2014) residents of the Global Health concentration are required to rotate through the Clinic during their Community Medicine rotation during both their 2nd and 3rd year, with close supervision and partnership with CNNC; the Clinic also provides in-person interpretation.[74]

- **State-university models**

University of Pennsylvania: the Refugee Clinic at the Penn Center for Primary Care is run by the Internal Medicine Residency program (a collaborative effort between Primary Care and Global Health tracks) with its partner volag, HIAS. Philadelphia's eight clinics and three resettlement agencies serving refugees haveto form the Philadelphia Refugee Health Collaborative to coordinate research and patient care.[75]

University of Colorado Denver (CU): the Colorado Refugee Wellness Center has partnered with CU's Departments of Medicine and Radiology and Student Health Refugee Elective to create a 4th-year medical student rotation to treat refugee arrivals; CU collaborates with the Colorado Department of Public Health and various relevant community organizations.[76]

Boston University (BU): the BU Schools of Medicine and Public Health work in conjunction with Boston Medical Center and the Massachusetts RHP to provide the Immigrant & Refugee Health Program in which Internal Medicine residents provide comprehensive primary care. In addition, the Program provides consultation for health-related legal needs, trained medical interpreters and outreach training at BMC.[77]

Threats

- **NC political climate:**

  The state's current stance on refugee resettlement is an enormous threat to refugee health, presenting looming barriers to progression of the field. Existing legislation in the state Senate and House of Representatives aims to limit/ban refugee arrival and resettlement to the state (H.B.1086) and penalize refugee and immigrant sanctuary policies (S.B. 686). These political initiatives influence the overarching state culture and perception of refugee individuals to both negatively impact their physical and psychosocial health and wellbeing generally as well as the community priority attributed to their complex strengths and needs. At the same time, current politics significantly inhibit the services and resources available for refugee health provision and promotion. The consequential loss of federal and state funding for critical refugee services has disastrous impacts on public and community organizations filling such health gaps and needs.

- **Funding requirements & instability:**

  Similarly, federal and state funding for refugee health is in a constant state of flux with limited requirements. The instability of essential funding and reimbursement for Medicaid

services, interpretation, screening and data collection impacts which quality health services are available and accessible for refugees. Greater initiatives for holistic refugee health care (such as a UNC treatment center for refugee trauma and torture) stagnate due to the federal infectious disease focus and an associated lack of revenue and funding potential for alternative aims. Seemingly, the biggest barrier is the lack of buy-in from powerful medical and university partners concerned about insufficient patient traffic to cover clinical expenses.

- **Time-limited Medicaid & resettlement services:**

  The majority of refugees have 8 months of Refugee Medicaid or Refugee Medical Assistance upon arrival. During this time, refugees must navigate an extraordinarily complex health system while securing core needs (housing, employment, education, transport, etc.) and acclimating to American life. Though refugees are eligible for a handful of specialized services up to five years within country, targeted volag health and financial assistance is only guaranteed within the first 90 days of arrival. Thus, this initial period of resettlement is greatly focused on meeting acute needs, basic health requirements and attaining employment towards financial independence over more long-term conditions such as NCDs.

- **International concerns:**

  Recent disease outbreaks of global public health concern—such as Ebola and Zika virus—reinforce domestic emphasis on communicable disease initiatives at the cost of less immediate and visible chronic and noncommunicable needs.

DISCUSSION

If the goal of refugee health provision in the Triangle is to achieve optimal, sustainable wellbeing, comprehensive health needs must first be known and then addressed. The extent to which the Triangle health community can adequately meet these complex and growing concerns is contingent upon systematic identification and surveillance of health priorities. Problems of health data screening and supervision of the refugee population arriving to North Carolina is two-fold. First, though North Carolina demonstrates a firm rate of mandated infectious disease screening, 15-22% of refugee arrivals are unaccounted for.[38,47,61] Moreover, due to resource

constraints, the basic communicable data that is available is not easily accessible for lack of a coherent, systematic process across state and local refugee providers. Secondly, the deficit of NCD screening and surveillance tools and protocol in face of rising chronic and psychosocial health needs stagnates effective health practice and provision with refugees and sustains marginalization of an extremely vulnerable population. Without additional statewide health indicators on critical NCD and health care utilization, evidence cannot support the increased human, fiscal and technological resources necessary to meet the compounding and increasing unmet needs of refugee arrivals to the Triangle. As refugee health is intrinsically interconnected with domestic public health, this data scarcity poses dire socioeconomic implications for refugee families and host communities in addition to the greater US health care system and economy.

While "regular screening only makes sense when follow-up care can be provided," holistic health knowledge is the first step to adequate health provision.[4,p45] Refugee health data collection and surveillance will build the evidence base essential to propose and develop critical policies and programs that improve refugee health within the US. However, state and local refugee health providers, their information resources and systems are overwhelmed and under-resourced. Pursuit of comprehensive data and surveillance mechanisms presents a promising opportunity for concerted collaboration across multidisciplinary actors to progress the evidence and research necessary to advance practice. Robust data systems can link vulnerable refugee populations to the vital primary and specialty care needed to address chronic and noncommunicable concerns of public health significance. Furthermore, knowledge generated can be utilized as advocacy to inform policymakers, increase awareness and support, and better sustain resources for refugee health. Comprehensive data collection is not an end alone, but a necessary means to ultimately improve refugee health and outcomes in the Triangle.

Recommendations

This paper identified many health issues refugee groups within the US experience, as well as the strengths, weakness, opportunities and threats of the health care system encountered within the Triangle of North Carolina. The research presented raises potential areas for multidisciplinary collaboration and development of expanded screening, data collection and surveillance systems to augment health practice and ultimately improve refugee health.

Development of a structured, mandatory screening process represents a major priority for the advancement Triangle refugee health. To begin to close the 15-22% gap in initial refugee health data collection, the basic RHA must be made mandatory for all refugee arrivals. Existing providers should be incentivized to include refugee populations in their data collection and assessment processes to contribute to a more comprehensive understanding of local health needs and concerns. As promoted by the NC Refugee Health Program and CDC, expanding health screening and assessment to include standardized chronic, noncommunicable, and psychosocial data indicators (over the current discretionary, case-by-case basis) could be instituted as a possible pilot program within Triangle health departments. LHDs could also incorporate refugee populations within their three-year community health assessments. Furthermore, data use agreements among state Medicaid as well as primary care, private and community practitioners are another prospect for collaboration. Evidence garnered will track priority conditions and trends—both infectious and noninfectious—among arriving and resettled refugees to develop and refine programs that progress health care and health outcomes.

Such lofty aims will demand close coordination among volags, LHDs and refugee service providers to ensure that every refugee arrival follows through on initial screening and vaccination as well as needed primary and ongoing care. RHP will carry the responsibility of

enforcing these policies and the systematic reporting of results provided. Pursuit of both national and state electronic databases for up-to-date, direct data access and entry would facilitate this process. Undoubtedly, these aims will require additional human, fiscal and technological resources within RHP, LHDs and refugee-serving organizations. Enduring questions include: how does the Triangle health community advocate for such state initiatives, how much will these steps cost and who will bear these expenses?

Diverse university-state-medical partnerships offer promising opportunities for collaborative research, service provision, grant funding and advocacy targeting these data initiatives. Rapidly growing interest and awareness in refugee health is observed among numerous top academic institutions and community partners within North Carolina and across the country. Examples include the refugee clinics provided by the University of Pennsylvania, University of Colorado Denver, and Boston University, as well as the local Refugee and Immigrant Health Clinic carried out through alliance of UNC Greensboro's Center for New North Carolinians, Cone Family Medicine and NC RHP. UNCG's Center for New North Carolinians acts as a state hub for coordinating local refugee health projects and associated research, training and evaluation. Empowered by more than 100 doctoral and graduate interns and AmeriCorps volunteers, CNNC provides an unparalleled source of support for refugee and immigrant communities and the North Carolina Refugee Health Program as a whole.

An integrated immigrant and refugee health center via partnership among the NC RHP and UNC-Chapel Hill's Hospitals, Schools of Medicine, Global Public Health, and Social Work could fill needed data, screening, surveillance and service gaps. Following UNC Greensboro's model, allied public health residents, doctoral and graduate students could rotate through the clinic, working closely with existing providers such as Refugee Wellness, SHAC, and the

Orange County Health Department—who could in turn provide human and technical expertise. Such an initiative could be augmented by North Carolina's wide-reaching AmeriCorps network. Though the state resource deficit permeates the Research Triangle, the area's expansive academic community presents a vast supply of faculty, graduate and doctoral students in pursuit of innovative projects, practicum and field placements. First and foremost, these goals will necessitate the shared endorsement, funding and resource commitment of all schools, organizations and communities impacted.

To neglect refugee health poses harm to the health of the communities in which these individuals resettle. As Kemp (2000) states, "The epidemiology of refugee illness is extraordinarily complex. From a public health point of view, the potential for communicable disease transmission warrants comprehensive surveillance, detection and treatment upon arrival. Furthermore, due to the cultural barriers to accessing care most refugees face, at least initially, the risks of chronic disease are vast. For all these reasons and more, health programs specifically tailored to refugee health are not only a cost-savings in the long-run, but ethically mandated."[36]

Creating an effective continuum of care for refugees resettling to the Triangle demands concrete health data. This critical information must flow overseas to the arrival state to the community provider of screening and assessment—and ideally to primary and specialty care centers managing health concerns thereafter. Current data gaps warrant active engagement and partnership among RHP, local volags, universities, public health and private providers to implement comprehensive health assessment and surveillance systems to identify primary health concerns for refugees upon arrival. Once the Triangle health community can begin to establish priority health needs, development of targeted health care actions plans and coordinated entry into sustainable health care can be pursued.[13] Only enhanced knowledge and evidence of refugee

health can progress practice and policy that better meets the unique and growing needs of resettling refugees—and the wide-reaching socioeconomic impacts for which all Americans benefit.

Limitations

As this research constituted an unfunded and independent endeavor over the course of one semester, time and resources for investigation were limited. Moreover, while various discussions and information were obtained from critical providers and informants of the Triangle, this research does not include an exhaustive compilation of local refugee health knowledge; it is likely that data, research and documentation pertinent to local refugee health was overlooked during this process. At the same time, the deficit of local, state and national data itself presented a major limitation for this undertaking.

References

1. US Department of State. Refugee admission statistics: cumulative summary of refugee admissions. 2015 Dec [cited June 2016]. Available from: http://www.state.gov/j/prm/releases/statistics/251288.htm.
2. Pooja A, Venkatesh, AK. Refugee resettlement patterns and state-level health care insurance access in the United States. American J of Public Health. 2016;106(4):662-663. Available from: http://search.proquest.com.libproxy.lib.unc.edu/docview/1776150130/f.
3. Waldorf B, Gill C, Crosby SS. Assessing adherence to accepted national guidelines for immigrant and refugee screening and vaccines in an urban care practice: a retrospective chart review. J Immigrant and Minority Health. 2013;16(5):839-845. Available from.
4. Dicker S, Stauffer WM, Mamo B, Nelson C, O'Fallon A. Initial refugee health assessments: new recommendations for Minnesota. Minn Med. 2010;93(4):45-48.
5. Walker PF, Barnett ED, Hauck FR, et al. Emerging infectious diseases. Immigrant Medicine. 2008;14(6), 1007-1008. http://doi.org/10.3201/eid1406.080154.
6. Jackson CJ, Haider M, Owens CW, et al. Healthcare recommendations for recently arrived refugees: observations from EthnoMed. Harvard Public Health Review. 2016;7. Available from: http://harvardpublichealthreview.org/case-based-recommendations-for-the-heal.
7. Pottie K, Tugwell P, Feightner J, et al. Summary of clinical preventive care recommendations for newly arrived immigrants and refugees to Canada. Canadian Guidelines for Immigrant Health. 2010:1-12. doi:10.1503/cmaj.090313.
8. Walker PF. Practising medicine in the global village: use of guidelines and virtual networks. Canadian Medical Ass Journal. 2011 Sep;183(12):926-927. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3168667/.
9. Amara AH, Aljunid SM. Noncommunicable diseases among urban refugees and asylum-seekers in developing countries: a neglected health care need. Globalization and Health. 2014.10:24. http://doi.org/10.1186/1744-8603-10-24.
10. Kumar G, Varma S, Saenger M, et al. Noninfectious disease among the Bhutanese refugee population at a United States urban clinic. Journal of Immigrant and Minority Health. 2014;16(5), 922-925. State of Washington, Department of Social and Health Services .
11. Yun K, Hebrank K, Graber LK, et al. High prevalence of chronic non-communicable conditions among adult refugees: implications for practice and policy. J Community Health. 2012;37(5):1110-1118.
12. Milosevic D, Cheng IH, Smith MM. The NSW refugee health services - improving access to primary care. Aust Fam Physician. 2012 Mar;41(3):147-149. Available from: http://www.ncbi.nlm.nih.gov/pubmed/22396929.
13. Stauffer W, Geltman PL. Domestic refugee health screening models and clinical guidelines [webinar]. Refugee Health Technical Assistance Center. 2011 Oct. Available from: http://refugeehealthta.org/webinars/clinical-care-and-health-screening/domestic-refug.

14. Refugee Processing Center, Worldwide Refugee Admissions Processing System (WRAPS) data. Admission and arrivals; c2016 [cited 2016 May]. Available from: http://link.springer.com.libproxy.lib.unc.edu/article/10.1007%2Fs10903-013-9808-6.

15. Center for New North Carolinians. Ethnic groups in NC. University of North Carolina Greensboro. c2016 [cited 2016 May]. Available from: https://cnnc.uncg.edu/ethnic-groups-in-nc/.

16. Singer A. The new metropolitan geography of immigration. Twenty-first-century gateways: immigrant incorporation in suburban America. Washington, DC: Brookings Institution Press. 2008: 1-11 [cited 2016 May]. Available from: http://www.brookings.edu/~/media.

17. Migration Policy Institute Data Hub. Immigrant population by state, 1990-present. c2016 [cited 2016 May]. Available from http://www.migrationpolicy.org/programs/data-hub/charts/immigrant-population-state-1990-present?width=1000&height=850&iframe=true .

18. Tobin C, Di Napoli P, Wood-Gauthier M. Recognition of risk factors for postpartum depression in refugee and immigrant women: are current screening practices adequate? J Immigrant and Minority Health. 2015;17(4):1019-1024. Available from: http://link.sprin.

19. Brealey S, Hewitt C, Green J, et al. Screening for postnatal depression: is it acceptable to women and healthcare professionals? A systematic review and meta-synthesis. J Reproduct Infant Psychol. 2010;28(4):328-34.Available from: http://www.tandfonline.c.

20. Stapleton H, Murphy R, Kildea S. Lost in translation: Staff and interpreters' experiences of the Edinburgh postnatal depression scale with women from refugee backgrounds. Issues Ment Health Nurs. 2013;34(9):648-657. Available from: http://www.tandfonline.

21. Palinkas LA, Pickwell SM, Brandstein K, et al. The journey to wellness: stages of refugee health promotion and disease prevention. Journal of Immigrant Health. 2003;5(1): 18-28. Available from: http://link.springer.com.libproxy.lib.unc.edu/article/10.1023.

22. Semere W, Yun K, Ahalt C, et al. Challenges in identifying refugees in national health data sets. American Journal Public Health. 2016;106(7):1231-1232. Available from: http://ajph.aphapublications.org.libproxy.lib.unc.edu/doi/10.2105/AJPH.2016.303201.

23. Stasio M. Strategies to improve health care for patients with refugee status in King County, WA: voices of primary care providers [unpublished thesis]. University of Washington; 2012.

24. Hinson J. Working with refugee and immigrant survivors of torture and trauma [online course]. UNC School of Social Work; 2016.

25. National Partnership for Community Training. Health promotion for torture and trauma survivors. Gulf Coast Jewish Family & Community Services: refugee services. c2012 [cited 2016 Apr]. Available from: https://gulfcoastjewishfamilyandcommunityservices.org/.

26. Sareen J, Cox B, Stein M, et al. Physical and mental comorbidity, disability, and suicidal behavior associated with posttraumatic stress disorder in a large community sample. Psychosomatic Medicine. 2007;69:242–248.

27. Sledjeski EM, Speisman B, Dierker L. Does number of lifetime traumas explain a relationship between PTSD and chronic medical conditions? Answers from the National Comorbidity Survey-Replication (NCS-R). Journal of Behavioral Medicine. 2008;31:341–349.

28. Steel Z, Chey T, Silove D, et al. Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: A systematic review and meta-analysis. JAMA. 2009;302:537–549.

29. Shannon P, Im H, Becher E, et al. Screening for war trauma, torture, and mental health symptoms among newly arrived refugees: a national survey of U.S. refugee health coordinators. Journal of Immigrant & Refugee Studies. 2012 Dec;10(4):380-394. Available .

30. Courtois CA. Complex trauma, complex reactions: Assessment and treatment. Psychological Trauma. 2008;S1: 86–100.

31. Marshal G, Schell T, Elliot M, et al. Mental health of Cambodian refugees 2 decades after resettlement in the United States. JAMA. 2009; 294:571–579.

32. CDC. Reproductive health: depression among women. 2016. http://www.cdc.gov/reproductivehealth/depression/.

33. Beach MC, Gary T, Price E, et al. Improving health care quality for racial/ethnic minorities: a systematic review of the best evidence regarding provider and organization interventions. BMC Public Health 2006;6:104.

34. Morris MD, Popper ST, Rodwell TC, et al. Healthcare barriers of refugees post-resettlement. Journal of Community Health. 2009;34(6):529-538. doi:10.1007/s10900-009-9175-3.

35. Beiser M. Longitudinal research to promote effective refugee resettlement. Transcultural Psychiatry. 2006;43(1):56–71.

36. Ellenson M. Health Action in the U.S.: a health education curriculum for refugees from Burma instructor's guide; 2007. Available from: http://www.orangecountync.gov/document_center/Health/Health_Action_in_the_US_A_Health_Education_Curriculum_for_Refugees_.

37. Johnson JH, Appold SJ. Demographic and economic impacts of international migration to North Carolina. Frank Hawkins Kenan Institute of Private Enterprise, University of North Carolina at Chapel Hill. 2014 Apr [cited 2016 May]. Available from: http://www.k.

38. Durham County Government. 2014 Durham County community health assessment: section 3.01 and 3.02 demographic and immigrants; 2014:35-56. Available from: http://publichealth.nc.gov/lhd/cha/docs/chareports/DurhamCounty2014CHA/Section3.01and3.02Demographicsan.

39. Edwards E, ed. Dobbs LR. World Refugee Day: global forced displacement tops 50 million for first time in post-World War II era. United Nations High Commissioner for Refugees. 2014 Jun [cited June 2016). Available from: http://www.unhcr.org/en-us/news/late.

40. Lutheran Services Carolinas. Refugee services; c2016 [cited 2016 Apr]. Available from: http://www.lscarolinas.net/services-for-refugees/refugee-resettlement/.

41. United Nations High Commissioner for Refugees. Refugees [homepage on the internet]; c2016 [cited 2016 Mar]. Available from: http://www.unhcr.org/pages/49c3646c125.html.

42. ACAPS. Syria: overview, crisis analysis, country profile, special reports; c2016 [cited 2016 Mar]. Available from: http://www.acaps.org/country/syria.

43. Refugee Council USA. History of the U.S. refugee resettlement program; c2016 [cited 2016 Apr]. Available from: http://www.rcusa.org/history.

44. Office of Refugee Resettlement. State of North Carolina - programs and services by locality. U.S. Department of Health and Human Services, Office of the Administration for Children & Families; 2015 [updated 2015 Nov 18; cited 2016 Apr]. Available from: ht.

45. Walker EM. Refugee resettlement in North Carolina: community-based challenges and resources for integration [unpublished thesis]. Chapel Hill : University of North Carolina; 2011. Available from: http://www.mpa.unc.edu/sites/www.mpa.unc.edu/files/ErikaWal.

46. Interfaith Refugee Ministry. FAQ. c2016. Available from: http://helpingrefugees.org/who-are-refugees/.

47. NC Refugee Health Program. NC Refugee Health subrecipient monitoring plan. Department of Health and Human Services, Division of Public Health: Chronic Disease and Injury Section; c2010 [cited 2016 Mar]. Available from: http://publichealth.nc.gov/employees.

48. Refugee Council USA. Pre-interview processing; c2016 [cited 2016 Apr]. Available from: http://www.rcusa.org/pre-interview-processing.

49. Centers for Disease Control and Prevention. Immigrant and refugee health; 2012 [updated 2014 Jul; cited 2016 Apr]. Available from: http://www.cdc.gov/immigrantrefugeehealth/exams/medical-examination.html.

50. Centers for Disease Control and Prevention. Technical instructions for panel physicians and civil surgeons; 2016 [updated 2016 Mar; cited 2016 Apr]. Available from: http://www.cdc.gov/immigrantrefugeehealth/exams/ti/panel/technical-instructions-panel-phys.

51. Centers for Disease Control and Prevention. About the Division of Global Migration and Quarantine (DGMQ); 2011 [updated 2015 Jul; cited 2016 Apr]. Available from: http://www.cdc.gov/immigrantrefugeehealth/exams/medical-examination.html.

52. Centers for Disease Control and Prevention. CDC Domestic Refugee Health Program; 2012 [updated 2014 Jul; cited 2016 Apr]. Available from: http://www.cdc.gov/immigrantrefugeehealth/guidelines/domestic-refugee-questions.html.

53. Office of Refugee Resettlement. Revised medical screening guidelines for newly arriving refugees. U.S. Department of Health and Human Services, Office of the Administration for Children & Families; 2013 Jul [cited 2016 Apr]. Available from: http://www.acf.

54. Centers for Disease Control and Prevention. Guidelines for mental health screening during the domestic medical examination for newly arrived refugees; 201f Jun [cited 2016 Jun]. Available from: http://www.cdc.gov/immigrantrefugeehealth/pdf/mental-health-s.

55. Orange County Health Department, LFS Carolinas, UNC School of Public Health. People from Burma living in Chapel Hill and Carrboro - an action-oriented community diagnosis: summary of findings. c2007 [cited 2016 Apr]. Available from: http://www.orangecount.

56. Office of Refugee Resettlement. Fiscal year 2014 refugee arrivals. U.S. Department of Health and Human Services, Office of the Administration for Children & Families; 2015 [updated 2015 Feb; cited 2016 Apr]. Available from: http://www.acf.hhs.gov/programs.

57. Refugee Council USA. The US resettlement program in North Carolina; c.2014 [cited 2016 Apr]. Available from: http://www.rcusa.org/uploads/pdfs/WRD-2014/North-Carolina.pdf.

58. World Relief Durham. Core services proposal; c2016 [cited 2016 Apr]. Available from: http://worldreliefdurham.org/sites/default/files/book/Core%20Services%20Proposal.pdf.

59. Orange County Health Department. Refugee health arrival trends 2005-present; 2016 (unpublished report).

60. NC Refugee Health Program. NC hepatitis B public health program manual/refugee health; 2016 [updated 2016 Jan; cited 2016 Mar]. Available from: http://epi.publichealth.nc.gov/cd/lhds/ manuals/hepB/docs/refugee_program.pdf.

61. Morillo J 2016, personal communication, April 6.

62. World Relief Durham. Primary care; c2016 [cited 2016 Apr]. Available from: http://worldreliefdurham.org/primary-care.

63. Clark A 2016, personal communication, March 16.

64. Orange County Government. 2011 Orange County community health assessment. Orange County Health Department and Healthy Carolinians of Orange County. c2011:1-239. Available from: http://www.orangecountync.gov/final_2011_orange_county_cha_full_report2.pdf.

65. Orange County Health Department. Refugee arrival data 2007-present: data from the CD screening reports; 2016 (unpublished report). [1,2].

66. Minnesota Department of Health. Minnesota Refugee Health Screening Manual. 2015 Jan; 1-27. Available from: http://www.health.state.mn.us/divs/idepc/refugee/hlthscreen.pdf.

67. Illinois Department of Public Health. Illinois Refugee Health Program: 2015 annual screening summary report. 2016 Feb;1-22. Available from: http://www.dph.illinois.gov/sites/default/files/publications/publicationscmh2015-refugee-program-ar.pdf.

68. Florida Health. Refugee Health Program guidelines. 2015 Oct;1-81. Available from: http://www.floridahealth.gov/programs-and-services/community-health/refugee-health/_documents/2015-refugee-health-program-guidelines.pdf.

69. Olson CK, Stauffer WM, Barnett ED. Newly arrived immigrants & refugees. CDC. 2015. Available from: http://wwwnc.cdc.gov/travel/yellowbook/2016/advising-travelers-with-specific-needs/newly-arrived-immigrants-refugees.

70. Orange County Refugee Health Coalition. OC Refugee Health Coalition Mission & Activities. Orange County Health Department; 2016 [updated 2016 Feb; cited 2016 Mar.

71. White CC, Solid CA, Hodges JS, et al. Does integrated care affect healthcare utilization in multi-problem refugees? Journal of Immigrant Minority Health. 2014 Aug [cited 2016 Jun];17:1444-1450. Available from: http://link.springer.com.libproxy.lib.unc.edu.

72. Van Wijngaarden JD, Scholten GR, van Wijk KP. Strategic analysis for health care organizations: the suitability of the SWOT-analysis. The International Journal of Health Planning and Management. 2012;27(1):34-49. dio:10.1002/hpm.1032.

73. Center for New North Carolinians. About: history. The University of North Carolina Greensboro. c2016 [cited 2016 Jun]. Available from: https://cnnc.uncg.edu/about/.

74. Cone Health. Family Medicine residency: Global Health area of concentration. c2016 [cited 2016 Jun]. Available from: http://www.conehealth.com/health-care-professionals/medical-residency/family-medicine-residency/areas-of-concentration/global-health-area-.

75. Penn Medicine. Internal Medicine residency: the Refugee Clinic at Penn. c2016 [cited 2016 Jun]. Available from: http://www.uphs.upenn.edu/internal-medicine-residency/our_program/Refugee_Clinic.html.

76. Meyers D. Global health at home: CU students to train at new Refugee Center. University of Colorado School of Medicine Anschutz. 2013 [cited 2016 Jun]. Available from: http://www.ucdenver.edu/academics/colleges/medicalschool/administration/alumni/CUMedTod.

77. Boston Medical Center. Immigrant and Refugee Health Program. 2014 [cited 2016 Jun]. Available from: http://www.bmc.org/immigrant-refugee-health-program.htm.

Appendix A: ORR's Domestic Medical Screening Guidelines Checklist, 2016[53]

Activity	All	Adults	Children
History & Physical Exam			
History (includes review of overseas medical records)	✓		
Physical Exam & Review of Systems (includes mental health, dental, hearing, and vision screening; nutritional, reproductive assessment; health education and anticipatory guidance, etc.)	✓		
Laboratory Tests			
Complete Blood Count with Differential	✓		
Serum Chemistries	✓		
Urinalysis	✓		
Cholesterol		✓ In accordance with the US Preventive Services Task Force guidelines	
Pregnancy Testing		✓ Women of childbearing age; using opt-out approach	✓ Girls of childbearing age; using opt-out approach or with consent from guardian
HIV Testing	✓ Opt-out approach		
Hepatitis B Testing	✓		
Hepatitis C Testing		✓ Individuals with risk factors (e.g., persons who have body art, received blood transfusions, etc.)	✓ Children with risk factors (e.g., hepatitis C -positive mothers, etc.)
Blood Lead Level			✓ Children 6 months to 16 years
Syphilis Testing		✓	✓ Children 15 years or older; children under 15 years old with risk factors
Syphilis Confirmation Test		✓ Individuals with positive VDRL or RPR tests	✓ Children with positive VDRL or RPR tests
Chlamydia Testing		✓ Women ≤ 25 years who are sexually active or those with risk factors	✓ Girls 15 years or older who are sexually active or children with risk factors
Newborn Screening Tests [1]			✓ Within first year of life
Preventive Health Interventions & Other Screening Activities			
Immunizations [2]		✓ Individuals with incomplete or missing immunization records	✓ Children with incomplete or missing immunization records
Tuberculosis Screening [3]	✓		
Stool Ova and Parasite Testing [4]		✓ Individuals who had contraindications to albendazole at pre-departure (e.g., women in the first trimester of pregnancy)	✓ Children who had contraindications to albendazole at pre-departure (e.g., under 1year)
Strongyloidiasis Presumptive Treatment [2, 5]		✓ Individuals who did not receive pre-departure presumptive treatment. Currently, only Burmese refugees originating from Thailand are treated prior to arrival. Therefore, all groups of refugees PLUS Burmese originating from Thailand who had contraindications at departure (e.g., pregnant) should be presumptively treated after arrival	✓ Children who did not receive pre-departure presumptive treatment. Currently, only Burmese refugees originating from Thailand are treated prior to arrival. Therefore, all groups of refugees PLUS Burmese originating from Thailand who had a contraindication (e.g., <15 kg) at departure should be presumptively treated after arrival
Schistosomiasis Presumptive Treatment [2, 6]		✓ Individuals from sub-Saharan Africa who had contraindications to presumptive treatment at pre-departure (e.g., pre-existing seizures) that are not resolvable should be tested rather than treated	✓ Children from sub-Saharan Africa who had contra-indications to presumptive treatment at pre-departure (e.g., under 4 years)
Malaria Testing [4, 6]		✓ Individuals from sub-Saharan Africa who had contraindications to presumptive treatment at pre-departure (e.g., pregnant, lactating)	✓ Children from sub-Saharan Africa who had contraindications to presumptive treatment at pre-departure (e.g., < 5 kg)
Vitamins		✓ Individuals with clinical evidence of poor nutrition	✓ All children 6-59 months of age; children 5 years and older with clinical evidence of poor nutrition

Appendix B: North Carolina Refugee Arrivals 2012-2015[14]

North Carolina Refugee Arrivals, FY 2012-2015					
	2015* (2/29/16) Total: 819	2014, Total: 2,443	2013, Total: 2,377	2012, Total: 2,110	% FY 2012-15 Total: 7,749
Afghanistan	11	38	17	27	1.2%
Algeria	-	-	1	-	.01%
Benin	-	-	-	4	.05%
Bhutan	**17**	**354**	**356**	**639**	**17.6%**
Burma	**29**	**806**	**954**	**785**	**33.2%**
Burundi	-	3	-	-	.04%
Cambodia	-	-	-	5	.06%
Cameroon	-	-	-	4	.05%
Central African Rep	-	6	11	13	.39%
Chad	-	21	-	-	.27%
China	-	3	2	-	.06%
Colombia	6	8	6	10	.39%
Congo	-	1	5	18	.31%
Cuba	**-**	**128**	**90**	**59**	**3.6%**
Dem Rep Congo	**24**	**201**	**88**	**76**	**5.0%**
Eritrea	**6**	**67**	**117**	**44**	**3.0%**
Ethiopia	4	38	41	17	1.3%
Guinea	-	2	-	-	.03%
India	-	2	-	-	.03%
Iran	5	26	18	8	.74%
Iraq	**-**	**343**	**335**	**148**	**10.7%**
Ivory Coast	2	-	-	-	.03%
Jordan	-	-	2	-	.03%
Lebanon	-	-	2	-	.03%
Liberia	-	1	2	3	.08%
Libya	-	-	-	5	.06%
Malaysia	-	-	1	7	.10%
Moldova	-	11	4	12	.35%
Nepal	-	1	4	6	.14%
Nigeria	-	1	-	-	.01%
Pakistan	4	9	22	18	.68%
Rep of South Sudan	-	-	1	-	.01%
Russia	4	-	2	11	.22%
Saudi Arabia	-	1	-	-	.01%
Somalia	**13**	**275**	**150**	**93**	**6.9%**
Sri Lanka	-	-	1	-	.01%
Sudan	**9**	**68**	**101**	**49**	**2.9%**
Syria	7	11	-	-	.23%
Thailand	-	-	2	-	.03%
Togo	-	5	-	2	.09%
Ukraine	5	1	1	16	.41%
Vietnam	-	11	39	30	1.0%
Zambia	-	-	-	1	.01%
Zimbabwe	-	1	2	-	.04%

Appendix C: Volag Core Services Checklist[58]

world relief

Core Services Proposal: [Refugee's name, GNT leader's name]

Time of Day:
Morn: Weekday mornings, before 9 a.m.
Day: Weekdays between 9 a.m. and 5 p.m.
Eve: Evenings or weekends, after 5 p.m

Other Times:
Any: Anytime as scheduled by volunteer
Var: Varies, Case by case basis

"Who" column: Indicates if the correlating service is completed by WRD, the GNT, or both. Blank slots are services that are available for GNTs to choose to provide

Pre-Arrival & 1st Week:	**Who:**	**Where:**	**Date:**
(Any) Apartment Setup	GNT		
(Var) Airport Pick-up (Flight #)	GNT	RDU Airport	
(Any) 1st Home Visit	WRD	Client Home	
2nd Week:	**Who:**	**Where:**	**Date:**
(Day) School enrollment (children 5-17)			
(Morn) 1st Day of School - bus assistance		Client Home	
(Any) 1st Bus Ride - *often assisted by community members*	WRD		
(Day) 1st Cultural Orientation Class	Both	WR Office	
(Day) Apply for public assistance (cash & food $$, Medicaid)	WRD	Social Services	
3rd Week:	**Who:**	**Where:**	**Date:**
(Var) ESL enrollment (English placement test)			
(Day) Schedule 1st Employment Appointment w/ CWS	WRD	Over the phone	
(Day) Apply for social security card(s)		Social Security Admin.	
(Day) WIC appointment (pregnant mothers & kids <5)		WIC Office	
4th Week:	**Who:**	**Where:**	**Date:**
(Morn) Health screening		Health Department	
(Day) 2nd Home Visit	WRD	Client Home	
(Day) Apply for SSI (seniors: over 65)	WRD	Social Security	
(Day) 2nd Cultural Orientation Class	WRD	WR Office	
Often after 30 days:	**Who:**	**Where:**	**Date:**
(Day) Apply for state ID at DMV (after SS# arrives) -register for selective service (males 18-25)		DMV Office	
(Any) Set up bank account			
(Day) 1st primary care appointment(s)			

Appendix D: Local Health Department Requirements by NC Refugee Health Program[47]

In ensuring refugee arrivals have access to timely health assessment, LHDs receiving Refugee Preventative Health Funds are expected to meet the following criteria:

a. Designate a Refugee Health Liaison to coordinate refugee health assessments.
b. Inform newly arrived refugees in the county about the availability of the health assessment services and schedule assessment as soon as possible (within 30 days) of the refugee's arrival. Exams must be provided with 90 days to assure Medicaid/Refugee Medical Assistance (RMA) reimbursement.
c. Provide assessment based on the NC Refugee Health Assessment Protocol guidelines. Each LHD should be able to provide at least the Communicable Disease Screening portion of the Assessment. If they are unable to provide the physical exam piece, the refugee must be referred to a private clinic/provider to complete this section.
d. Use a qualified interpreter for clinical encounters (telephone interpretation appropriate).
e. Provide language-appropriate health education based on the individuals' needs and risk factors.
f. Provide follow up care or a referral for any conditions identified in the Assessment (conditions of public health concern must be followed up within 14 days).
g. Complete the refugee health data collection form in the EpiInfo online database for each refugee arrival.
h. Allow key refugee health staff to attend trainings/conferences sponsored by the NC Refugee Program or NC Refugee Health Program; meet on a regular basis with voluntary resettlement agencies to coordinate local refugee services; and attend NC Refugee Advisory Council meetings.