Strategies for Improving Communications with Limited English Proficient Populations in State Health

A project from the Minnesota Department of Health

MPA Capstone Paper

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Executive Summary

Protecting, maintaining and improving the health of all Minnesotans.
-Minnesota Department of Health Mission

Demographic trends in Minnesota are changing. Numbers of foreign-born residents in Minnesota, including refugees from many different countries, are increasing, and the state is becoming more diverse. In order to fulfill its mission, MDH needs health messages to reach to all Minnesotans, which increasingly includes Limited English Proficient (LEP) communities. Improving LEP communications will ensure legal compliance with Title VI of the Civil Rights Act, increase responsiveness to health needs of immigrant populations, and work towards elimination of health disparities. In order to effectively communicate health messages to all Minnesotans, MDH needs to track and connect with ever-changing LEP populations in the state.

MDH partnered with the University of Minnesota to request the work of a graduate Capstone team to obtain current, reliable data to assess population size and geography of LEP communities. MDH planned to use this data to understand LEP groups in the state; to craft relevant, appropriate educational resources and health messages; and as a tool for MDH to allocate resources. The findings and recommendations related to the Capstone team's LEP data research are highlighted in the full paper. The team's analysis of current barriers to effective LEP communications, as voiced by MDH staff and community perspectives, is also included.

The Capstone team performed background research, met with data experts including the State Demographer and a specialist from the U.S. Census, and reviewed numerous data sources. Research revealed that data related to LEP populations does not exist in a singular source. Data related to race, ethnicity and language is particularly complex. Across data sources and academic resources, the Capstone team encountered three thematic limitations of LEP population data: challenges with collection, accuracy, and interpretation. Given the limitations of existing data sources, it is proposed that MDH move forward with three sources: Minnesota Department of Health Primary Refugee Arrival Data, American Community Survey Language and Ancestry Data, and Minnesota Department of Education Student Enrollment Language Data. Through observation of MDH staff and community members the Capstone team noted themes included barriers both internal and external to MDH. The need for strengthened partnerships and trust-building between MDH and the community were identified by both parties.

The Capstone team recommends that MDH invest resources in a two-fold effort to improve LEP communications focused both on equipping staff and building relationships. To move the recommendations forward MDH will need leadership, dedicated resources and training, and feedback from staff and the community. Knowing *who* to communicate with is the first step in improved communications; equally important, MDH must consider *how* to best reach LEP groups, a challenging and essential task.

Introduction

The Minnesota Department of Health (MDH) employs 1482 staff members in 14 Offices and Divisions. Part of their ongoing work is to reach Minnesotans with health messages, including those with Limited English Proficiency. Reaching Limited English Proficient (LEP) individuals is an important part of fulfilling MDH's mission, "Protecting, maintaining and improving the health of all Minnesotans (MDH, 2013)." MDH staff's commitment to improving LEP health communications was illustrated by the recruitment of a University of Minnesota Capstone team in January 2013 by staff members of the International Health Section. The Capstone team was engaged to support the ongoing efforts of MDH to improve strategies for working with Limited English Proficient (LEP) residents in Minnesota. The Capstone Project: *Strategies for Improving Communications with Limited English Proficient Populations in State Health* is part of a larger MDH initiative to improve LEP health communications and equip staff to deal with health access and disparities among these populations. The Capstone team was asked to interpret existing LEP demographic data and recommend strategies for improving LEP health communications.

"Who is the vision keeper for health equity?"

"Our goal is to make Minnesota the healthiest state possible... We will need partners whose efforts are well coordinated. We will need teamwork. But most importantly, we will need a vision keeper for health equity. Who will that be? I think it should be us because one of the core principles of public health is social justice – and health equity is a social justice issue."

Blog post 4/15/2013, Commissioner of Health, Ed Ehlinger, M.D., M.S.P.H. (Ehlinger, 2013, para. 13)

As MDH works to communicate with its constituents to improve public health, it is important to consider how communications with LEP & English-speaking populations differ. How can MDH identify LEP populations and where they live? How should messages be targeted so they reach LEP communities as

successfully as English-speaking communities? What are the cultural considerations that affect the success of health messages reaching the intended populations? Creating effective communications strategies specific to LEP communities is fundamental to meeting the mission, goals and outcomes that MDH values.

Background on Changing Demographics in Minnesota

Relative to other states, especially coastal and border states, Minnesota's foreign-born population is not particularly high; 7% of the Minnesota population is foreign-born compared to 22% in New York and 27% in California (Minnesota Compass, 2009). However, the percentage of refugees that make up this population is notable (Fennelly, 2005). Minnesota's foreign-born population has attracted public attention throughout the state due to the rapidly increasing numbers of foreign-born residents in the past two decades and particularly concentrated populations of foreign-born residents in some parts of the state (Fennelly, 2005). The trends are clear: the face of Minnesota is changing. Minnesota, generally, is diversifying faster than the rest of the country; the population of color in Minnesota is growing at a rate much faster than the white Minnesotan population; and foreign-born arrivals are coming to the state from an increasingly wide representation of countries (MN Compass, 2009).

Demographic changes in America are a topic of such public interest that National Public Radio announced an entirely new program, "Code Switch," dedicated to the subject in February 2013. Their pilot story highlights Brooklyn Park, MN, as a prime example of what they refer to as a "seismic demographic shift" in the country. A suburb north of Minneapolis, Brooklyn Park has undergone an incredible transformation in the past twenty years; in 1990, 90% of the population was white. In 2010, nearly 50% of residents were people of color (Demby, 2013). In the Brooklyn Park example, a large contributor to this change has been the increasing Liberian

population. The population increase was so substantial that in 2011 and 2012 the Vice President of Liberia made diplomatic visits to the city (Demby, 2013), as invited by the Brooklyn Park mayor (Liberian Dialogue, 2012). In addition to Liberians, Minnesota boasts some of the highest populations in the U.S. of several other refugee groups- Hmong, Somali, Sierra Leonean, and Tibetan (Fennelly, 2005).

Minnesota has historically had a high percentage of refugees in the state. Following the Second World War, Minnesota embraced the Displaced Persons Act of 1948 that established federal refugee policies and again, following the Vietnam War, numerous Minnesota religious groups and non-profit agencies responded to President Carter's request that states accept Southeast Asian refugees (Fennelly, 2005). This historical commitment is evident today in the list of official VOLAGs (Volunteer Agencies) approved to administer refugee resettlement services in Minnesota, including Catholic Charities, Lutheran Social Service, and Minnesota Council of Churches, among others (DHS, 2012). Equal to favorable policy adoption and a strong infrastructure of social services in Minnesota is the draw of available jobs in the state. Many anecdotal stories exist in both the Hmong and Somali communities referencing a particular factory willing to hire refugees with limited English skills; when hiring practices became known, phone calls were made to employees' relatives in other states and a new wave of migrants entered Minnesota (Yang, 2008;Yusuf, 2012). Once an immigrant or refugee community is established in Minnesota, it is common for friends and relatives to join them in the state, what is known as secondary migration.

Defining the Problem

The work of the Minnesota Department of Health is vast. Some of MDH's work involves managing birth and death records, providing information on diseases, conditions, injuries, violence, prevention, life stages, and health living, monitoring environmental health measures such as drinking water quality, and preparing for health emergencies (MDH, 2013). For each of these organizational tasks, communication to the general public, directly or through local public health agencies and providers, is essential.

MDH first approached the University of Minnesota to request help with obtaining current, reliable data to assess population size and geography of LEP communities and a way to prioritize communications to these communities based on need. MDH planned to use this data to paint an accurate picture of LEP groups in the state, to craft relevant, appropriate educational resources and health messages, and as a tool for MDH to allocate financial and temporal resources accordingly. The driving vision behind MDH's request was that ultimately MDH would be able to more effectively and efficiently get health messages out to all Minnesotans, which includes an increasing diversity of LEP communities (Minnesota Compass, 2009).

In order to effectively communicate health messages to Minnesotans, MDH needs to track and access ever-changing LEP populations in the state. But knowing *who* to communicate with is only the first step in improved communications. Equally as important, MDH must consider *how* to best reach LEP populations. If MDH wants to use LEP data effectively, they need to think about the culture, and not just the language, of LEP populations. Additionally, MDH must have strong relationships with LEP communities. What makes a health message effective varies across cultures. It is important to consider the best channel of message delivery for each population. While written translation works for some communities, TV, radio or

YouTube messages may more effectively reach other target audiences. A few strategic changes by MDH could create waves of impact in reaching all Minnesotans. This issue is not unique to MDH. Across the other Minnesota state departments and across the country, organizations are struggling with finding effective ways to reach and serve LEP populations.

Why Does this Matter?

The mission of MDH compels the Department to serve all residents and drives policy and practice within the organization. Relative to the LEP community, language and cultural barriers can make fulfilling the mission more difficult. Additionally, there are legal, needs-based and resource-based considerations to LEP work at MDH.

Legal Context

The Civil Rights Act of 1964 bans discrimination on the basis of many characteristics, including race and national origin. In order to comply with the law with regard to national origin, Title VI requires that meaningful language access must be provided. (Federal Interagency website, 2013). In August 2000, this law was further clarified by Executive Order 13166 which strengthened the current law to further improve access. It requires Federally-assisted agencies to provide meaningful access to LEP persons, to evaluate agency capacity, and to create an LEP plan that describes how they will provide this access (Clinton, 2000).

Mission-based

Unfortunately, legal requirements do not provide an adequate set of guidelines for reaching LEP populations. Health outcomes for LEP populations are worse than those for the dominant culture (Kreps & Sparks, 2008). When examining these disparities, one must take into account health literacy. The Minnesota Health Literacy Partnership (2012a, para 2) defines

health literacy as "a patient's ability to obtain, understand, and act on health information and the capacity of health care providers and healthcare systems to communicate clearly, educate about health, and empower patients." Out of the population of literate English speakers, only 12% have a proficient level of health literacy (Minnesota Health Literacy Partnership, 2012b). The impact of poor health literacy can be poor health. Without a clear understanding of needed medical tests and their results, nor the ability to follow prescription or treatment directions, patients are not likely to adequately manage chronic diseases (CDC, 2011). Limited English proficiency and cultural considerations add layers of complexity in communicating with, educating, and empowering individuals. Finding opportunities to improve health literacy is above and beyond Title VI legal requirements, but necessary for tackling inequities and maintaining, protecting and improving health.

Responding to Need

LEP populations can be especially vulnerable to negative health outcomes. Research shows health disparities between LEP and non-LEP populations ranging from lack of appropriate pre-natal care and poor birth outcomes to increased risk of heart disease, cancer, and stroke. Preventing disease and promoting health can be improved in the LEP population through better health communication (Kreps & Sparks, 2008). "Over 80% of the excess deaths in minority and economically disadvantaged populations are from diseases with preventable or controllable contributing factors (O'Malley, Kerner, & Johnson, 1999, p. 1)." LEP groups are widely considered minorities in the US and are frequently economically disadvantaged. Despite the need to serve these populations better, there is little advice from researchers about the best strategies for communicating with LEP individuals (McKee & Paasche-Orlow, 2012). Current strategies show room for improvement. It is generally agreed upon that translations are not

always useful. In some languages, native speakers do not read their language and the quality of translations is difficult to assess. Additionally, concepts in English in the United States may not exist in other languages or cultures (Andrulis, Siddiqui, & Gantner, 2007).

Effective Use of Resources

Public dollars need to be allocated justly. It is difficult to assess how resources can be used to get better results. Kreps & Sparks (2008) provide some specifics for improving health communications: "messages should be designed to appeal to key beliefs, attitudes, and values of targeted audience members, using familiar and accepted language, images, and examples to illustrate key points (p. 329)." In order to allocate resources effectively, it is imperative for MDH staff to understand the makeup of who needs the health messages. Prioritization should be given to sharing health messages which combat inequities leading to health disparities.

MDH Initiatives

There is a growing number of dedicated staff who are already taking steps to improve efforts to reach the LEP population at MDH. One effort is the *MDH Limited English Proficient (LEP) Health Communications Project.* Stated goals are focused on improvement in communication strategies, partnering with communities, and developing and sharing promising practices. There are two workgroups that focus on this work. The advisory group is called the LEP Health Communicator Workgroup and was created in the fall of 2012. The Health Equity Workgroup began meeting in the winter of 2012 (Chute & Horwart, 2013, March 20). These teams have sought out resources to support their work, including the hiring of interns and recruitment of the Capstone team.

MDH's size is both an asset and a deficit when it comes to the work of communicating with LEP populations. The knowledgeable, highly trained and educated staff offer a wealth of

resources to build MDH's capacity. However, with more than 1000 employees, spread between 4 St. Paul buildings as well as statewide district offices (MDH. 2012c), there are barriers to collaboration due to the size of the organization. MDH seems, from an outsider's perspective, to be heavily siloed. There is little understanding from the staff of one program of the work of another. Relationships between one staff person or program with community partners may be strong, while other staff at MDH don't know that the relationship exists, much less how to capitalize on it. The organizational capacity seems to be limited by internal communications and MDH staff culture. Staff perspectives on this topic will be explored later in the paper.

The Original MDH Tool

In 2009, a major initiative of MDH was to plan, prepare, and educate the public about H1N1. Not surprisingly, the International Health Section (IHS) focused on reaching LEP populations. IHS Staff worked to provide a tool that helped prioritize which LEP populations were in most critical need of targeted outreach. This one-page tool was referred to as "the grid" (Chute & Mamo, 2009) (Appendix A). Several years later, the original H1N1 MDH grid is still in use. The eighteen most common languages other than English spoken in Minnesota were included. For each language, information was listed in the following categories: country of origin, census population estimate, community population estimate, primary and secondary languages. Additionally, in order to use the grid for prioritizing outreach, a method to rate the different populations was incorporated. The rating categories included census population size, community estimate population size, recency of arrival, and likelihood of English literacy. A category called "literacy in their own language" was not fully populated due to lack of available data. High ratings in all areas indicated that a community was a top priority for outreach. The

grid attempted to integrate differing types of data (quantitative and qualitative, including anecdotal evidence) from multiple sources (Chute & Mamo, 2009;Chute & Horwart, 2013, February 4).

The Capstone Research

The original grid made an ambitious attempt to capture data and inform LEP communications strategy for MDH. However, the volume and variety of Non-English speakers changes year to year as new immigrants and refugees enter the US and less-than-proficient English speakers build their English speaking skills. The data was in need of an update and the prioritization scheme included in the grid needed to be critically re-worked. Through the Capstone process as described in this report, research was undertaken to inform the process of updating the data as well as the delivery method used by MDH to make data available and useful to staff. Introductory research included an academic literature scan and background research to understand the context of MDH's work in the field of LEP health communications and representation of LEP communities within data sets. Numerous limitations in data were detected through this scan. A thorough review of existing data sources followed, including analysis of the strengths and limitations of these sources. Interviews with data experts at MDH and other public institutions were conducted, confirming initial Capstone team findings that LEP data does not exist in a singular source. To more fully understand all of these issues, the Capstone team rooted their work in listening to and observing MDH staff and community members closely involved with LEP communications work. A full discussion of the research process follows.

A Puzzle Missing Pieces

The Minnesota Department of Health needs reliable, verifiable data to accurately assess Minnesota populations. To understand language needs of LEP communities, MDH needs language data. Decision makers at MDH rightly value current, trusted data sources. This data is used to inform the allocation of resources and services to MN residents in a fair and effective manner. However, research reveals that data related to LEP populations does not exist in a singular, accessible source. Language specific data was found to be surprisingly scarce. Additionally, data that does exist often comes with limitations. Limitations of data will be discussed broadly below, and existing data sources will be discussed in the following section.

Across data sources and academic resources, the Capstone team encountered three thematic limitations of LEP population data: challenges with collection, accuracy, and interpretation.

The first thematic challenge, collection of data, manifests for many reasons, including linguistic and cultural barriers. Simply finding the individuals to count is identified as a challenge, and in some cases individuals with limited English proficiency may have purposefully resisted being counted due to uncertain legal status and other factors (Spring, 2003; El Nasser, 2010). Some LEP individuals may mistrust data collectors and fear state authority as a result of personal or cultural history, in which case building "ethnographic trust" is a first step in data collection (Spring, 2003). While objective data collection performed with rigor and analyzed for statistical significance is an invaluable process, it is not one that moves quickly or is responsive to dynamic population changes. Keeping quickly updated counts on emerging populations is challenging, especially as lags in data collection and reporting exist. Collecting data on LEP

communities is a difficult art of tracking a population inherently in flux. By the time data is reported, new migration may have occurred making reported numbers already obsolete. Lastly, secondary migration is particularly hard to track. Primary refugee arrival data is well documented in Minnesota (MDH, 2012a). LEP individuals who move to Minnesota from another state to join family or friends, or for work (referred to as "secondary migration"), present an enormous tracking challenge (Fennelly, 2005; Mamo & Nelson, 2013). "Despite its heritage as a nation of immigrants, the United States has an extremely limited systemic collection of immigration data (Ahearn, 2000)."

The second challenge is accuracy. Even within the most sophisticated, established data collection sources, inaccuracies occur and gaps exist. Undercounts in minority populations are not uncommon (Spring, 2003). Specific to Minnesota, a 2003 Census Bureau follow-up report indicated that Minnesota had the "largest margin of error in census enumeration of any state" (Fennelly, 2005, p.5). Small, emergent populations can be underrepresented or entirely absent, and may not register as statistically significant in a larger data set such as the US Census' American Community Survey (ACS) (Dolan, 2013). For example, the small but growing Karen refugee population in Minnesota is recognized by health providers as an emerging population in need of services (Power, 2010; Stone, 2010), but is currently too small to register in a data source such as ACS. In fact, Capstone team members found that a search for "Karen" populations within ACS not only yielded no results, but ACS auto-corrects "Karen" to "Korean"; "Karen" is simply not identified by ACS as a subgroup of the Minnesota population. Leaders within many refugee communities would estimate their community population to be significantly higher than official data sources such as the US Census (Yusuf, 2012). The Capstone team found that while some State of Minnesota employees believed that data underrepresented LEP populations,

employees lacked sufficient evidence or research to validate this belief. Further confounding accurate population representations are complexities in categorization of race/ethnicity and language identification, addressed in more depth later.

Once challenges of collection and accuracy are overcome, a third thematic data challenge presents itself: interpretation. In order to fully understand demographic trends in the state researchers must be familiar with and able to interpret numerous data sources. However, it can be difficult to compare data across sources because of inconsistencies, such as measuring different periods of time or age groups, and a lack of standardization of categories measuring factors such as race and ethnicity. Additionally, some data sets are very accurate for a particular subset of the population, but not representative of the full population. For example, Minnesota Department of Education data accurately gathers data about language spoken at home in only those households with school-age children.

The many challenges in collection, accuracy and interpretation of LEP population data are not unique to Minnesota Department of Health. These challenges represent national trends and many sources attest to the importance of accurate data collection and the difficulty in achieving it. The increasing diversity of the U.S. population will likely only accelerate the demand for more representative data (Bierman, 2002; Sequist & Schneider, 2006). Many experts in the public health field also underscore the importance of accurate data related to race and ethnicity in eliminating health disparities (Bierman, 2002; Sequist & Schneider, 2006; Derose, Contreras, Coleman, Koebnick, & Jacobson, 2012). Extensive national debate, discussion and activity exist around tracking race/ethnicity and language, as discussed below. Standardization of demographic data is identified as a step in the right direction (Bhalla, Yongue, & Currie, 2012).

Categorization of race and ethnicity in many data collection surveys, including but not limited to the U.S. Census, has long lagged behind demographic realities. The current major US Census race/ethnicity categories refer to woefully inadequate 1997 Office of Management and Budget (OMB) standards on race and ethnicity listing five categories (U.S. Census Bureau, 2012); White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander. The limitations in these five categories are abundantly clear when we consider how Minnesota LEP groups might identify. For example, consider the limited utility of these categories for a recent immigrant of Hispanic/Latino ethnicity (Bhalla, Yongue, & Currie, 2012). Though fraught with inconsistencies, many researchers indicate that self-reporting of race and ethnicity is the most accurate measuring tool (Bierman, 2002; Mays, 2003). Also, the 2000 Census was the first time in US history that respondents were presented with an option to identify as multi-racial (U.S. Census Bureau, 2012). How to capture data about multi-racial individuals, whose numbers are rapidly accelerating in the US, is a national issue that experts have labeled a "crisis of ambiguity" (Gilbert, 2005).

A separate but related concern to race and ethnicity is the representation of language in data sources. The Capstone research found language data to be particularly scarce and inaccurate. Often country of origin data serves as a proxy for language data - using country of origin to craft assumptions of language spoken and of speaking ability of those populations. Numerous potential pitfalls exist here. For example, one study found that of respondents who had identified in an initial survey as Somali, nearly ¼ indicated that they spoke a language other than Somali (or English) at home when questioned further (Fennelly, 2005). In an earlier 2003 study, Fennelly poses that "broad regional and linguistic groupings can also mask dramatic differences in both the background characteristics and language abilities of individual national

origin groups (Fennelly, 2005, p 95)." For example “Asians” might combine both East Indian and Vietnamese immigrants and refugees- groups with very different language abilities and economic and educational measures (Fennelly, 2003). Once in the US, assimilation from different cultural groups can vary greatly. Cultural enclaves can occur in which even individuals who have been in the US for an extended period of time may continue to speak their home language and be isolated to a particular community. Language data is made more complex by a generational element: as immigrant & refugee populations put down roots in Minnesota and have children, or as refugee children assimilate, language challenges dissipate. However, older residents in the household may continue to face barriers due to their limited English proficiency.

Despite language barriers lessening, the cultural context regarding delivery of health messages should still be considered. The Cultural Orientation Research Center emphasizes that while many clients are served based on native-language (for example, Arabic), cultural appropriateness in health messaging remains paramount as “common language speakers come from dramatically different cultures with diverse beliefs and values (Webb, 2013, slide 10).”

Against the backdrop of multiple LEP data challenges, bright spots do exist. Numerous initiatives exist across the country to standardize data across sources, increase sharing of existing data sets, and innovate in collection. Data-linking and geo-coding are posed as potential ways to tie existing data sets to health disparities monitoring via socioeconomic data (Bierman, 2002; Krieger, Chen, Waterman, Rehkopf & Subramanian, 2005). Standardization is increasingly discussed, with attention to a dual purpose of aggregating data broadly and narrowing in on subgroups. The deepening and widening of data collection is a way to ensure the ability to compare across sources while providing more nuanced data specific to a particular data set (Bierman, 2002). Another innovative development in data practices includes the more effective

use of existing client interactions with health care providers as a way to improve tracking of demographic data (Moy, 2005; Dicker, 2010).

In summary, data limitations present significant but not insurmountable hurdles to assessing LEP populations in Minnesota. Given these limitations, the Capstone team's task focused on developing the most accurate description of Minnesota's LEP populations within an imperfect data environment. Similarly, as the team grounded their work in research on demographic trends, it became apparent that the project was not only about providing MDH with solutions for today. The team needed to update data on current demographics as well as provide a strategy and recommendations that will position MDH as a future-oriented organization responsive to what will continue to be a dynamic demographic landscape. Findings specific to existing data are illustrated in the following section, as well as proposals and recommendations for moving forward.

Existing Data Sources

With the limitations of data in mind, the Capstone team researched several existing data sources and met with data experts to better understand these sources. Sources were chosen because they were either publicly available or easily accessible to both the current

"Data are the coins of the public health realm"

"…the need for good data has grown in importance. Given the magnitude of the problems in our communities and the rapid and dramatic changes that are occurring in the realms of medical care, social service, and public health, the need for good data is unprecedented. Also unprecedented are the opportunities that exist to link our data capabilities with programmatic and policy initiatives that will benefit everyone in our society.Although I gave this challenge to a group of statisticians and registrars attending last week's conference, it is a challenge that all of us in public health need to embrace. Data are the coins of our public health realm. We need good data to accomplish our public health mission. Not since the 1920s have we had such an expansion in our data capabilities. Fortunately, this expansion has come at a time when we most need good data to help transform our health systems. Let's not waste this magnificent opportunity."

Blog post 6/13/2012, Commissioner of Health, Ed Ehlinger, M.D., M.S.P.H. (Ehlinger, 2012, para. 8-9)

Capstone team and future MDH staff. Ability to continually update and replicate the Capstone's demographic research was a requirement of MDH. Described below are the major data sources considered by the Capstone team, with strengths and weaknesses of each source identified relative to understanding the demographics of LEP populations in Minnesota. National, Minnesota and MDH specific sources that collect and report demographic data were considered. Secondary sources that interpret existing data sets were also considered. Links to the named data sources are provided in Appendix E.

National Data Sources

US Census & ACS

The United States Census Bureau engages in many data collection activities outside of the decennial census, including the annual American Community Survey (ACS). ACS data can be accessed through a query tool on the US Census Bureau website called "American Fact Finder."

ACS surveys 250,000 US households per month (3,000,000 households per year) and provides estimates about household demographics, including ancestry, language spoken and ability to speak English (U.S. Census Bureau, 2013). Despite the collection of data relevant to LEP populations, it is difficult to use this tool to accurately assess the landscape of LEP populations in Minnesota using ACS alone. Where numbers are available for smaller LEP groups or LEP groups in smaller geographies, the margin of error is far too high. Although ACS data is accessible, updated regularly, and widely used, the Capstone team witnessed a number of challenges with language data available through ACS. Data about some LEP groups is available only as part of a group of languages, thus hindering accurate decision making about who to target with health messages. As an example, there are a number of different LEP groups from

parts of Africa with different languages, cultures, and health needs in Minnesota, but in table B16001, "Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over" - "African Languages" is as specific a choice as one can make (U.S. Census Bureau, 2013).

Minnesota Department of Health Data Sources

Minnesota Center for Health Statistics (MCHS)

The Minnesota Center for Health Statistics is a Center within the Health Policy Division of MDH. Stewards of birth and death data for all Minnesotans, MCHS also indicates on its webpage that:

"The core functions of the Center for Health Statistics include:

- The collection and analysis of health-related data
- The design and implementation of public health surveys
- The coordination of health data collection efforts at the state and local level
- The provision of technical assistance and consultation"

The birth data that MCHS receives from the MDH Office of the State Registrar (OSR) is nearly 100% accurate (Edelman & Peterson-Hickey, 2013). Race/ethnicity of mother and father is self-reported on the birth record as well as the birthplace of the mother and father. This is the likeliest indicator of language spoken at home, and if analyzed correctly, could give a sense of future language trends in the state of Minnesota. The MCHS data provides information for program and policy planning at MDH.

Refugee Health Program

According to its website:

"The Refugee Health Program maintains a surveillance system to monitor disease trends among newly arriving refugees. The data and summary reports are used to:

- Develop health interventions, research studies and targeted community health education for refugees
- Assess health disparities, service gaps and resource needs in refugee populations
- Evaluate and revise refugee screening and data collection protocols, and provide resources for health professionals
- Build strong relationships with partners including counties that screen refugees, public and private clinics, and resettlement agencies (VOLAGS)(MDH, 2012b, para.1)."

Primary Refugee Arrival Data

The Minnesota Department of Health's Refugee Health Program has been tracking data on primary refugees, those whose initial settlement in the US is to the state of Minnesota, since 1979. This data is useful for understanding emergent and ongoing LEP health communications needs. By analyzing Primary Refugee Arrival Data, one can deduce the recency of arrival, size of arriving community, and health status of differing refugee populations. Additionally, a primary refugee's need for an interpreter at a health screening gives an accurate idea of their proficiency in English. According to Blain Mamo of the MDH Refugee Health Program, most LEP immigrants to Minnesota are refugees, with the exception of Spanish speakers (Mamo & Nelson, 2013). This program's data includes language spoken by refugees arriving in Minnesota and is nearly 100% accurate. A limit to the usefulness of this data is that it captures only those Minnesotans who arrived here as refugees, and does not help us understand non-refugee LEP groups in Minnesota. The RHP data also doesn't help us know where refugees settle within or outside of the state if they move after their initial settlement, or the rate at which these populations acquire proficient English language abilities.

Other Minnesota State Departments

Minnesota Department of Education (MDE)

The Minnesota Department of Education collects enrollment data that includes language spoken at home for K-12 students in the state and reports this data yearly. This data was pointed

to as the singular most accurate language data for the state of Minnesota by all of the data experts interviewed. The MDE data is an accurate, reliable, annually updated language data source relied upon by other Departments of the State of Minnesota (DHS, 2013a). There are limitations to MDE data, however, most notably its exclusion of households without school-age children. Additionally, as MDE data is not publicly linked to household size, extrapolating to total population is difficult.

Minnesota Department of Employment and Economic Development (DEED)

Minnesota Department of Human Services (DHS)

Like MDH, many government agencies have resources devoted to data and reports. The Capstone team looked for data that could be used by MDH to help inform gaps in LEP population data. The team found that neither DEED nor DHS appear to track language data, although these state departments could be a rich source of data that correlates to potential low health literacy and/or poor health outcomes, such as rates of unemployment, health insurance coverage, or poverty (DHS, 2008; DHS,2009; DEED, 2013a; DEED, 2013b; DHS, 2013b). For the purposes of this project, no data was included from Minnesota state departments other than the Minnesota Department of Education.

Secondary Sources

In addition to the primary sources named above, there are many resources that do the work of interpreting American Community Survey and other data generation sources, and turning it into publicly accessible reports. For example, the Migration Policy Institute data hub (Migration Policy Institute, 2013) and the MN Compass tables and graphs are useful in quickly interpreting and visualizing existing data (Minnesota Compass, 2009). Other robust data sites include IPUMS/The Minnesota Population Center and the Minnesota State Demographer's

office. Community agencies, such as Stratis Health, provide demographic data and cultural background information on many of the LEP groups present in the state of Minnesota (Stratis Health, 2013). Numerous data sets also exist specific to health-related tracking, including information like that provided on the Minnesota Public Health Data Access Page. Organizations that fund research related to immigration and health disparities, including the Wilder Foundation and Minneapolis Foundation, also generate or interpret data relevant to LEP populations (Otteson, Owen & Meyerson, 2010). A more extensive list linking to these and other informative data sources can be found in Appendix B.

In addition to the above research of existing data sets, several in-person interviews were conducted to more completely understand the collection and analysis of LEP population data in Minnesota. Capstone team members met with demographics experts to learn more about the data their organizations collect, curate, or interpret professionally, including:

- Susan Brower, State Demographer, and Andi Egbert, Data Retrieval and Analysis – Minnesota State Demographic Center
- Melanie Peterson-Hickey, Senior Research Scientist, and Kim Edelman, Epidemiologist, Minnesota Center for Health Statistics, Minnesota Department of Health
- Blain Mamo, Senior Epidemiologist and Interim Refugee Health Coordinator, and Kailey Nelson, Epidemiologist, Refugee Health Program, Minnesota Department of Health
- Ryan S. Dolan, Data Dissemination Specialist, United States Census Bureau, Chicago Regional Office

These meetings provided invaluable expert opinions and confirmed the team's outside research on challenges with LEP data collection. Generally speaking, the experts validated that LEP groups are underrepresented in traditional counts. During the training on the US Census data, it became clearer to the team that the type of LEP data that MDH was seeking would be difficult, if not impossible, to find in a single source. MDH epidemiologists and MCHS staff were able to explain the strengths of data sets particular to their area of expertise, and allude to what information is missing in the larger data context. Susan Brower, current Minnesota State

Demographer, reinforced an understanding that resources and population counts are intricately tied.

> *"It is very important that we have good, timely data on our immigrant communities in Minnesota. The data raise the visibility of immigrant groups, help to identify needs, and allow people to direct resources to where they are most needed (Brower, 2013)."*

The Capstone team has created a proposal to guide MDH in creating a strategy to improve communications with LEP populations using existing data sources. A Data Query Tool developed by the Capstone team and based on multiple data sources will be fully described later in the paper. This tool is grounded in the Capstone team's broad research on limits to LEP population data, a detailed exploration of existing Minnesota data sources, and informative conversations with data experts. In addition, the team acknowledges that data alone will not solve LEP communication challenges. Discussions with MDH staff and community members continuously validated the importance of knowing not only *who* to communicate with, but also *how* to best reach them.

Listening to and Observing MDH Staff and the Community

In addition to conducting data-related research, the Capstone team spent time listening to and observing MDH staff who work with LEP groups as well as representatives of the LEP community in Minnesota. The Capstone team attempted to bring an objective, rigorous, external frame of reference to observing and analyzing community and staff perspectives. The team had numerous opportunities to obtain the MDH staff perspective through participant observation of staff in meetings and through interviews. Prior to the Capstone project, staff in the Refugee Health Program had conducted an internal staff survey to gather information about LEP work and results were made available to the Capstone team (Horwart, 2013). An interactive meeting for MDH staff called a "ProAction Café" was organized by Refugee Health Program staff as an

opportunity to more deeply and interactively explore the themes that surfaced in the surveys (Chute & Horwart, 2013, March 20). To assess community opinions on improving LEP communications, a survey and ProAction event were also conducted with community members (Chute & Horwart, 2013, April 25).. The Capstone team was able to attend both events. MDH staff and community members identified challenges distinct to each group. There were also challenges and successes shared by the two groups.

Staff Perspective

The administration of a staff survey and organization of a ProAction Café illustrate recognition within MDH that there are concerns regarding the effectiveness of LEP communications, and a desire for improvement. The staff survey involved 63 MDH staff respondents and consisted of questions regarding barriers to effectively reaching LEP communities with health messaging. The ProAction Café provided an opportunity to more deeply address the same subject. Both shed light on internal and external challenges as identified by staff. MDH listed the following challenges relative to LEP communications (Chute & Horwart, 2013, March 20; Horwart, 2013):

- Finding and managing time
- Budgetary constraints
- Lack of internal support within section/program
- Lack of internal communication and resources
- Knowing who to communicate with
- Tailoring messages to specific communities
- Understanding and bridging cultural barriers

Theme from the MDH Staff ProAction Cafe

There is a need for identification of knowledgeable staff, better web resources and a place to share best practices

(Chute & Horwart, 2013, March 20)

Staff survey responses and ProAction Café discussions demonstrated that staff are eager to talk about reframing the issue of LEP communications. Staff named concerns about the role and power of MDH, expectations of the community, and lack of resources. Discussions in the

room demonstrated an existing humility of many MDH staff people and a sensitivity to community needs.

The following conversational themes were voiced by staff in the ProAction Café (Chute & Horwart, 2013, March 20):

> *How do we change the frame so that we see culture as an asset instead of a barrier?*
>
> *We need to recognize that MDH comes from a position of power and we may feel like we already know the answer. We need to step back from this.*
>
> *MDH is the topic expert but not the community expert.*

Several discussions centered around how to more effectively reach LEP communities with health messages. ProAction Café participants highlighted the complexity of the issue by listing challenges. Staff stated that language is not always easily translated due to cultural differences. Cultural differences exist relative to gender roles, homosexuality, stigma of sexually transmitted diseases, and mental health, to name a few. Staff have experienced that written materials are often not the most effective way to share health messages, but preferred message delivery varies between LEP groups. Staff recognized that no "cookie cutter" solution exists for communicating with all LEP groups, and expressed a desire to know more about how to tailor messages appropriately to specific communities.

Challenges were flagged across the health message cycle, from inception of an idea reception of a message by an LEP individual. The chain begins with prioritization of what messages and education materials are produced at MDH. As messages are developed, staff emphasized the importance of culturally appropriate content creation. Navigating the translation or interpretation process and concerns about contracted vendors was a concern, as was the mode by which the message was delivered. Staff struggled with how to measure community receptivity and how to ultimately evaluate the effect of health messaging, but strongly supported improved

evaluation. Increasing effectiveness at each step, and cohesion between the steps is ambitious, but important. Table discussion mentioned that some individuals (internal and external to MDH) within this communication chain may not be aware of the role they play in the larger chain. For example:

> *There are staff at MDH who write content, but due to the nature of their job, never interact directly with LEP communities. They still need to be aware of and able to bridge cultural barriers* (Chute & Horwart, 2013, March 20).

Discussion also included proposals to meet the challenges named above. Appropriately training all MDH staff and providing adequate resources about cultural responsiveness was emphasized. Staff expressed a need for ways to learn from each other's successes and failures. Centralization of resources and information sharing were running themes proposed to leverage existing expertise at MDH:

> *There is a need for identification of knowledgeable staff, better web resources and a place to share best practices* (Chute & Horwart, 2013, March 20).

Seeking new and strengthening existing relationships with LEP community organizations and individuals were repeatedly mentioned as essential tools to responding to the complexities of LEP communication.

Internal concerns specific to MDH were also identified. Concerns were expressed about silos within the Department and lack of communication between divisions. A concern was also raised about lack of coordination between different MDH divisions creating frustration in the community. One theme directly raised the question of the role of leadership in LEP communications:

> *There is a lack of commitment from senior management to promote and institutionalize eliminating health disparities throughout the Department* (Chute & Horwart, 2013, March 20).

Staff felt that valuation of this work by senior management would lead to additional resources being allocated.

Community Perspective

The community survey and community ProAction Café represent important work that MDH is already undertaking to actively solicit community participation and to strengthen relationships. In the community survey, 253 participants from community based organizations and diverse community media answered questions regarding how communities access health information and how MDH can more effectively communicate with LEP and low-literacy communities (Chute & Horwart, 2013, April 25). A follow-up community ProAction Café event held at Rondo Community Library in St. Paul was well attended with diverse groups represented with a shared interest in improving health communications to LEP groups.

Briefly noted here are the community's top challenges related to effective communication with LEP groups. This list, distinct to the community perspective, was identified through the community survey and discussed at the community ProAction Café (Chute & Horwart, 2013, April 25):

- Linguistic isolation
- Cultural isolation
- Accessibility of resources
    - Are easily accessible materials available?
    - Are translations available in many languages?
    - Is the material culturally appropriate?
- Lack of literacy in English and/or in client's primary language
- Cultural relevance/ cultural responsiveness
- Lack of trust

Though further discussion of how LEP communities best access health information and MDH's role in more effectively work with communities is beyond the scope of this project, it is

essential to a full understanding of the subject. Fortunately, profound expertise and energy exists within MDH to pursue understanding and responding to the *community perspective*.

Shared Ground

While distinct concerns were identified by MDH staff and the LEP community, the Capstone team noted that some challenges and assets were identified by both groups (Appendix B). Existing assets, success stories and ideas for action were raised at the ProAction Cafés. Three over-arching shared strengths illustrate the possibility for MDH and the community to act together (Chute & Horwart, 2013, March 20; Chute & Horwart, 2013, April 25):

- Shared goal of more effectively reaching LEP populations
- Shared understanding of importance of bridgers/ navigators
- Shared commitment to health equity and health literacy

The shared challenges identified jointly by staff and community include:

- Translation and interpretation
- Appropriate & targeted messaging
- Evaluation
- Partnerships between MDH & Community
- Trust

MDH staff are eager to improve their communications with LEP communities, and communities are seeking more appropriate messaging targeted to their population. Several areas of need were discussed. Translation issues include effectiveness, cost, quality and consistency. Staff and community members alike expressed frustration with the quality of translations. Lack of certification or training standardization for translators and interpreters in Minnesota was a top concern. Many anecdotal stories were told regarding interpretation services that were offered, but not culturally appropriate. For example, some women clients did not feel comfortable speaking to their doctor through a male interpreter, or elders through a young interpreter. All emphasized

that dual language skills alone do not make a successful interpreter. Similarly, participants expressed that appropriate and targeted messaging was a key to successful LEP communications. Simply translating into another language is not sufficient.

MDH staff and community members also identified evaluation as a shared challenge. Several challenges were discussed relative to effectively evaluating work with LEP communities. Evaluation challenges include lack of quality data, lack of trust in MDH by community members, language barriers, and demonstration and measurement of achieved outcomes. One observation was that surveys, the most common technique for evaluation, may not get at the root of the issue. It was agreed that resources must be dedicated to evaluating the effectiveness of health messages in improving health and reducing health disparities.

The need for strengthened partnerships and trust-building between MDH and the community were identified as a challenge by both parties. There was a shared understanding of the importance of bridgers and navigators. MDH staff who are known and respected by LEP communities and understand the nuances of working with these groups are incredibly valuable. Equally important are community representatives who are able to move between the institutional culture of MDH and LEP communities. A need for a centralized database of community partners and media channels was expressed by all parties (Chute & Horwart, 2013, April 25).

While challenges should not be underestimated, progress toward improving LEP health communications is within reach and actively occurring. The Capstone team witnessed passion, knowledge and expertise from MDH staff and community participants. Many staff and community members have long been working to build strong relationships, grounded in mutual respect and understanding.

Recommendations

The barriers in data collection, accuracy, and interpretation to effective LEP communications discussed earlier in the paper highlight the complex challenge that MDH faces in reaching LEP populations with health messages. No single data source is sufficient to describe all LEP populations in Minnesota. Without an accurate understanding of LEP populations, who they are and where they live, MDH will have significant barriers to communicating health messages and supporting the work of local public health. Additionally, communicating health messages to LEP populations is not simply about knowing which groups are present in the state. Effective communication strategies also consider how to communicate with groups that may differ from the majority culture and each other in language, culture, preferred methods of receiving messages, as well as a myriad of other variables.

Recommendations for improving strategy for reaching LEP populations with health messages by MDH are grouped into two general areas: equipping staff and building relationships.

Recommendations Part 1: Equipping Staff

Developing a Data Query Tool

In the twenty-first century, information is readily available. Spending time with Google will produce more results than one has time to read. But too much information can result in analysis paralysis, a feeling of being overwhelmed, and ultimate indecisiveness (Tartakovsky, 2013).

For a busy MDH professional time is a limited resource. Staff need easy access to information to help guide their LEP communication efforts. MDH's original "grid" in many

ways met that need. The rationale behind the original "grid" was sound, but one of the deficiencies of the "grid" was that it was a static tool. Furthermore, MDH staff did not have time to create a query-able data set, where users of the tool could query data by population or geography.

One of the primary ways to equip MDH staff to make sound decisions in the area of communications with LEP populations is to provide them access to relevant, easily-interpreted and reliable data. The Capstone team chose to create the framework of a tool that will allow for side-by-side comparisons of data from three sources:

- Minnesota Department of Health Primary Refugee Arrival Data
- American Community Survey Language and Ancestry Data
- Minnesota Department of Education Student Enrollment Language Data

The Capstone team proposed that MDH staff determine the type of data query tool they would like developed by the team by considering the following questions:

- Will your choice help MDH make good decisions?
- Will it help reach LEP residents?
- Will MDH staff use it?
- Does it deliver an appropriate amount of information?
- Will it be easy to maintain and update?

A full discussion of the process by which the Capstone team determined the form of the data query tool is discussed in Appendix C.

The data query tool (see Appendix D) that the Capstone team suggests be developed could easily be formatted to fit into MDH's existing IT structure and capacity. There is currently a Public Health data query tool on MDH's publicly accessible website that allows staff and the public to query data about Public Health. The LEP data query tool could be formatted to fit that existing structure to minimize new development dollars needed.

Developing a Collection of Supporting Resources

Throughout the project, it was clear to the Capstone team that MDH was requesting more than just a new data set to inform its decisions about LEP communications. The team inferred that there was a need for MDH staff to interact with the data, to understand the communities it hoped to serve with health messages, and a methodology to update and verify the data being used on a regular basis.

In the framework developed by the Capstone team, the data query tool named above is accompanied by multiple resources to help orient MDH staff to promising practices around LEP communications. These resources hold information specific to each LEP group in Minnesota – including trusted community partners, cultural profiles, and best practices for communications (See Appendix E). These additional resources will ensure that after a decision is made based on demographic data about who to communicate to, MDH resources will be used to their best advantage in reaching LEP communities.

Recommendation 1 : Develop a Data Query Tool specific to LEP populations at MDH and supporting resources to help MDH staff know how to best communicate with different populations

The team recommends that MDH invests its resources (temporal and financial) to fully develop a data query tool to provide access to accurate data about LEP groups by city, county, and region. The tool should summarize top-5 LEP groups by population for each geography. The tool should also indicate where there are obvious inconsistencies in data (for example, where two data sources contradict one another). This type of data query tool will allow MDH staff to interact with the data and inform nuanced decision-making, as opposed to seeing a static ranking which might lead resources to be allocated to the same LEP groups for all communications. This

tool will have the additional benefit of being linked to a collection of resources and information about best practices in LEP communications to which new staff could be oriented and trained. Ideally, the data query tool and resources would eventually be shared among public and community partners as a much-needed and comprehensive resource about LEP populations in the state of Minnesota.

Priority in our decision-making was given to the same criteria we asked of MDH leaders: Will our recommendation help MDH make good decisions? Will it help reach LEP residents? Will MDH staff use it? Does it deliver an appropriate amount of information? Will it be easy to maintain and update?

The Capstone team is confident that the framework for the data query tool and supporting resources will help MDH make good decisions, and will be used by staff. The data query tool allows for users to find and use as much information as they need, resulting ultimately in better health messages reaching LEP Minnesotans.

Recommendations Part 2: Building Relationships

The Minnesota Department of Health is a highly relational public agency. MDH works with and through partner agencies including other state agencies, local government agencies, non-profit/community organizations, and local public health agencies and providers. The Capstone team sees the task of building strong internal (across divisions and programs of MDH) and external (inter-agency) relationships to be of primary importance in the work of communicating health messages with LEP populations. Each cultivated relationship will have the potential to strengthen a different component of reaching LEP residents to promote better health.

MDH

There are numerous human and structural resources within MDH that have the potential to move this work forward. Existing workgroups with a focus on LEP communications, health equity, health literacy, and/or reaching populations with a diversity of needs all have expertise in their particular area of focus and tools they have developed to aid in their work - such as community advisory boards or specialized IT resources to help them track and tend to the issue they are attempting to address. While there is cross-pollination between workgroups and shared policy, there is a great deal more to be done to develop relationships interdepartmentally. MDH's existing LEP Health Communications Project has goals of improving interdepartmental communication and resource sharing around LEP/low-literacy communications, improving the ways we partner with communities, and sharing and institutionalizing promising practices. The Capstone team recommends that MDH continue this work, and that it be supported by leadership so that there is no redundancy in resource development. The capacity of the whole is larger than the sum of its parts.

Local Government Agencies

MDH can research ways to maximize its existing relationships with local government agencies. For example, local county public health departments are required to submit a Biennial Community Public Health Needs Assessment to the Department. MDH should consider adding additional information to this form to include data on language groups that can then be used as a source of information for the LEP data query tool.

Local Community Agencies

Another important partnership to cultivate is with local community agencies. Many MDH programs and staff people have existing strong relationships with community agencies. A rich,

knowledgeable, vibrant LEP community exists in Minnesota. MDH would benefit from connecting with and seeking feedback from this community in an effort to become integrated with and responsive to the community it hopes to serve.

Other Data Collection and Data Analyzing Agencies

MDH has the power to influence the data collection and analysis undertaken by its partner organizations such as the US Census, the Minnesota State Demographer's Office, and other Minnesota State Agencies. There could be a liaison from MDH tasked with working to identify partners in the work of LEP data collection and analysis, and resources allocated to move the collective work forward. This has the potential to be the most efficient and effective use of MDH's resources and would impact LEP data publicly available in the state.

Contract Agencies

MDH can capitalize on its existing relationships with contract agencies (such as language lines and interpreters/translators) it uses for language services as an additional source of language data.

Recommendation 2 : Invest resources in Cultivating Relationships between sections, divisions and programs of MDH and between MDH and its partner organizations.

Moving Forward With the Recommendations

As in most public endeavors, to best serve constituents, resources will need to be allocated to these priorities. Ensuring that staff are equipped and relationships are cultivated will result in more effectively reaching LEP populations with health messages. Recommended actions fall into three general areas: Leadership, Resources, and Feedback.

Leadership: A Shared Vision

Changing the way that any large organization responds to demographic changes can be a challenge. MDH Commissioner Ehlinger appears (to an outside observer) to be committed to tackling that challenge. He wrote that "health equity is a social justice issue (Ehlinger, 2013, para.13)." But leadership is not just required at the senior management level; all formal leaders must be committed to understanding that communicating health messages to LEP groups is central to fulfilling the Department's mission. Leaders can signal their commitment to the vision of health equity by housing a staff position to support LEP communications in a central division, where that person's commitment is to providing access to LEP communications resources to the whole of the organization. By removing this work from the International Health Section, leaders help make clear that serving LEP residents in Minnesota is the work of the entire Department. Leaders also set priorities and strategy, funding, and have political influence that can cultivate stronger relationships between divisions at MDH and between MDH and its community and public partners.

Additionally, leadership includes evaluating the success of organizational efforts. The Capstone team suggests regular assessments of the impact of an improved strategy for LEP communications at the Minnesota Department of Health. One example of an organizational assessment tool can be found in *An Ethical Force Program Consensus Report* (Allhoff, Jarosch, Matiasek, Reenan & Wynia, 2006). Tools such as this will illustrate MDH's current capacity and practices in building relationships both internally and with the community and suggest next steps to become a more effective organization.

Dedicated Resources and Training

To capitalize on the momentum of this project, the Capstone team encourages MDH to hire a coordinator to oversee the full development of the data query tool and supporting

resources. IT support will be needed to modify and populate the tool specific to MDH's needs. Staff knowledgeable about LEP communications can help steer the work of developing the supporting resources. It is important to note that the work of communicating with LEP populations is ongoing and evolving. Staff time and financial resources will continue to be needed to keep data, cultural resources and promising practices in communication current.

Once the tool is fully functional, MDH should formalize the use of the tool through information-sharing and training of staff, managers, and supervisors. A minimal investment in staff training has the potential to yield significantly more effective health messages with LEP communities. As discussed earlier in the paper, there is no lack of information available to MDH staff, and sometimes the amount of information can be overwhelming. In order to reap the full benefits of developing the data query tool and resources, this information will need to be easily accessible to all staff through the intranet and marketed from time-to-time through organizational internal communication channels. Publicity should be targeted to MDH staff who work directly with LEP populations (Refugee Health Program, etc.) as well as to MDH employees who don't work directly with LEP populations but whose work affects the health outcomes of these communities.

Solicit Ongoing Feedback from Staff and the Community

In order to ensure that the efforts put forth are creating the desired impact, a feedback loop both for staff and for the community can provide a venue for continuous improvement. A central intranet page can incorporate different tools for staff to share resources and experiences. This could happen in the form of a discussion forum or wiki. Feedback could be captured from users of the data query tool to improve the user interface. In addition, staff could share their

experiences on what is working and not working in regard to current communications with LEP populations in Minnesota.

Feedback is key in cultivating relationships with the community. If the public is granted access to the data query tool and accompanying resources, the public could also be a rich source of feedback. Providing opportunities for public input at the launch of communications campaigns may be an efficient and effective way to be responsive to LEP communication needs, resulting in an eventual reduction in health disparities and greater impact of the message. The Capstone team suggests further research into developing an Advisory Board of Community Partners to provide a formal platform for feedback.

As the LEP communities themselves are the experts on what they need in terms of health communications, MDH should create a systemic way to capture feedback and suggestions from community members about LEP communications. MDH should continue the successful work of surveying community partner organizations and engaging community members in conversation about their needs through the use of ProAction Cafes. One challenge to prepare for is demonstrating to the community that MDH is responsive to their suggestions. This will result in trust being built and relationships being deepened.

Conclusion

In a shifting demographic landscape, there are many challenges to identifying and reaching LEP populations. Effective communication across an organization as large and multi-

faceted as MDH can be difficult. The data query tool and supporting resources are poised to bridge inter-organizational communication challenges and equip staff with the information they need to do their jobs well, ultimately leading to more effective external communications and messaging between MDH and the LEP communities they intend to serve. Many of the recommendations at the close of the paper underscore these same points.

As with any new initiative, wide stakeholder buy-in will be a major key to success. We believe that the tools/resources developed through the Capstone project align directly with the MDH mission and the stated vision of Commissioner Ehlinger (Ehlinger, 2012; Ehlinger, 2013). The project would provide a meaningful return on investment in the form of increased internal efficiency, more effective external communications, increased information sharing within MDH, and strengthened relationships with external community partners, ultimately resulting in improved health messages to LEP Minnesotans.

References

Ahearn, F. (2000). *Psychosocial wellness of refugees: issues in qualitative and quantative research*. Oxford, New York: Berghahn Books. Retrieved from http://books.google.com/books?hl=en&lr=&id=Ei2ukrYUpScC&oi=fnd&pg=PR7&dq=The Psychosocial wellness of refugees Ahearn&ots=CiSXqNQT18&sig=Cr6xHqiAueCpdC3gDkZQSrNR0Kk

Allhoff, F., Jarosch, J., Matiasek, J., Reenan, J., & Wynia, M. American Medical Association, (2006). *An ethical force program™ consensus report improving communication*. Retrieved March 30, 2013 from website: http://www.ama-assn.org/resources/doc/ethics/pcc-consensus-report.pdf

Andrulis, D., Siddiqui,N., & Gantner,J. (2007). Preparing Racially And Ethnically Diverse Communities for Public Health Emergencies. *Health Affairs*, 26 (5), 1269-1279. Retrieved March 23, 2013 from http://content.healthaffairs.org/content/26/5/1269.full.html

Bierman, A. (2002). Addressing racial and ethnic barriers to effective health care: the need for better data. *Health Affairs*, *21*(3), 91-102.

Bhalla, R., Yongue, B., & Currie, B. (2012). Standardizing race, ethnicity, and preferred language data collection in hospital information systems: results and implications for healthcare delivery and policy. *Journal for Healthcare Quality*, *34*(2), 44-52.

Brower, S. (2013, May 6). Interview by Mastrud H.

Centers for Disease Control and Prevention (CDC). (2011). *Learn about Health Literacy*. Retrieved February 14, 2013 from http://www.cdc.gov/healthliteracy/learn/index.html

Chute, S., & Horwart, A. (2013, February 4). Interview by Fischbach M., Mastrud, H. & Reser, A.

Chute, S., & Horwart, A. (2013, March 20). Sara Chute (Chair). *Limited English proficient and low-literacy communications conversation*. Power Point Presentation. Proaction cafe, St Paul, Minnesota.

Chute, S., & Horwart, A. (2013, April 25). Sara Chute (Chair). *Limited English proficient and low-literacy communications conversation*. Community Proaction cafe, St Paul, Minnesota.

Chute, S., & Mamo, B. Minnesota Department of Health, Refugee Health Program. (2009). *Grid – languages ranked by MDH according to criteria as outlined per table below*

Clinton, W. The White House, (2000). *Improving access to services for persons with limited English proficiency* (Executive Order 13166). Retrieved April 16, 2013 from Federal Register: Presedential Documents website: http://www.justice.gov/crt/about/cor/Pubs/eolep.pdf

Demby, G. (2013). *Code switch: when our kids own america*. Retrieved April 16, 2013 from http://apps.npr.org/codeswitch-changing-races/

Derose , S., Contreras, R., Coleman, K., Koebnick, C., & Jacobsen, S. (2012). Race and ethnicity data quality and imputation using u.s. census data in an integrated health system: The kaiser permanente southern california experience . *Medical Care Research and Review*, doi: 10.1177/1077558712466293

Dicker, S. (2010). Initial refugee health assessments. new recommendations for minnesotans. *Minnesota Medicine, 93*(4), 45.

Dolan, R. (2013, February 28). Interview by Fischbach M., Mastrud, H. & Reser, A.

Edelman, K., & Peterson - Hickey, K. (2013, February 26). Interview by H. Mastrud & A. Reser.

Ehlinger, E. (2013, April 15). [Web log message]. Retrieved April 20, 2013 from http://www.commissionerblog.health.state.mn.us/2013_04_01_archive.html

Ehlinger, E. (2012, June 13). [Web log message]. Retrieved April 20, 2013 from http://www.commissionerblog.health.state.mn.us/2012_06_01_archive.html

El Nasser, H. (2010, April 5). Census 2010: are you counted? *USA Today*

A Federal Interagency Website, (2013). *Limited English proficiency (lep): executive order 13166*. Retrieved from LEP.gov website: http://www.lep.gov/13166/eo13166.htmlh-equity.html

Fennelly, K. (2003). English language proficiency of immigrants and refugees in the twin cities metropolitan area. *International Migration, 41*(5), 93-125.

Fennelly, K. (2005). Latinos, Africans and, Asians in the north star state: immigrant communities in Minnesota. In E. M. Gozdziak & S. F. Martin (Eds.), *Beyond the gateway: immigrants in a changing America: migration and refugee studies series* Retrieved April 10, 2013 from http://www.hhh.umn.edu/people/kfennelly/pdf/immigrant_communities_in_mn.pdf

Gilbert, D. (2005). Interrogating mixed-race: a crisis of ambiguity. *Social Identities, 11*(1), 55-74.

Horwart, A. Minnesota Department of Health, Refugee Health Program. (2013). *Limited English proficient and low literacy communications survey*

Kreps, G. & Sparks, L. (2008). Mini-review: Meeting the Health Literacy Needs of Immigration Populations. *Patient Education and Counseling.* 71, 328-332.

Krieger, N., Chen, J., Waterman, P., Rehkopf, D., & Subramanian, S. (2005). Painting a truer picture of us socioeconomic and racial/ethnic health inequalities: the public health disparities geocoding project. *American Journal of Public Health, 95*(2), 312-323. doi: 10.2105/AJPH.2003.032482

The Liberian Dialogue (2012, September 1). Liberia's Vice President Joseph Boakai begins three-day visit to Minnesota, on Sept. 3 , Retrieved April 16, 2013 from http://theliberiandialogue.org/2012/09/01/liberias-vice-president-joseph-boakai-begins-three-day-visit-to-minnesota-on-sept-3/

Mamo, B., & Nelson, K. (2013, February 26). Interview by H. Mastrud & A. Reser.

Mays, V., Ponce, N., Washington, D., & Cochran, S. (2003). Classification of race and ethnicity: implications for public health. *Annual Review of Public Health, 24*(1), 83-110.

McKee, M. & Paasche-Orlow, M. (2012). Health Literacy and the Disenfranchised: The Importance of Collaboration Between Limited English Proficiency and Health Literacy Researchers. *Journal of Health Communication* 17(3), 7-12

Migration Policy Institute. (2013). *Migration policy institute home page*. Retrieved from http://www.migrationpolicy.org/

Minnesota Compass. (2009). *Population trends*. Retrieved April 21, 2013 from http://www.mncompass.org/immigration/key-measures.php?km=populationtrends

Minnesota Department of Employment and Economic Development (DEED). (2013a). *Data Center*. Retrieved April 5, 2013 from http://www.positivelyminnesota.com/Data_Publications/Data/index.aspx

Minnesota Department of Employment and Economic Development (DEED). (2013b). *Unemployment Insurance Claimant Characteristics.* Retrieved April 5, 2013 from http://www.positivelyminnesota.com/apps/lmi/ui/Results.aspx

Minnesota Department of Health (MDH).(2013). *Minnesota Department of Health home page.* Retrieved February 12, 2013 from http://www.health.state.mn.us/

Minnesota Department of Health (MDH). (2012a*). Refugee Health*. Retrieved March 28, 2013 from http://www.health.state.mn.us/divs/idepc/refugee/index.html

Minnesota Department of Health (MDH). (2012b). *Refugee Health Statistics*. Retrieved March 28, 2013 from http://www.health.state.mn.us/divs/idepc/refugee/stats/index.html

Minnesota Department of Health (MDH). (2012c). *Workforce Facts for Potential Employees Minnesota Department of Health* . Retrieved April 16**,** 2013 from http://www.health.state.mn.us/divs/hrm/workfact.htm

Minnesota Department of Human Services (DHS). (2008). *Analysis of Race – Ethnic Group Disparities in Minnesota Health Care Programs*. Retrieved April 7, 2013 from https://edocs.dhs.state.mn.us/lfserver/Legacy/DHS-4762-ENG

Minnesota Department of Human Services (DHS). (2012). *Combined manual 0030.01: voluntary agencies (Volags)*. Retrieved April 16, 2013 from http://www.countylink.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&dID=136481

Minnesota Department of Human Services (DHS). (2009). Disparities and Barriers to Utilization among Minnesota Health Care Program Enrollees. Retrieved April 7, 2013 https://edocs.dhs.state.mn.us/lfserver/Legacy/DHS-5852-ENG

Minnesota Department of Human Services (DHS). (2013a). LEP Data and Reports: Maps from the Minnesota Department of Education showing languages spoken by public school students in Minnesota Retrieved April 6, 2013 from

http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=id_027810#

Minnesota Department of Human Services (DHS). (2013b). *Minnesota Family Investment Program: MFIP Performance Measures by Racial/Ethnic or Immigrant Group and County*. Retrieved April 7, 2013 from https://edocs.dhs.state.mn.us/lfserver/Public/DHS-_4214Q-ENG

Minnesota Health Literacy Partnership. *Health Literacy Basics.* (2012a). Retrieved February 12, 2013 from http://healthliteracymn.org/health-literacy/health-literacy-basics

Minnesota Health Literacy Partnership. *Health Literacy Matters.* (2012b). Retrieved February 12, 2013 from http://healthliteracymn.org/health-literacy/why-health-literacy-matters

Moy, E. (2005). Preparing the national healthcare disparities report: gaps in data for assessing racial, ethnic, and socioeconomic disparities in health care. *Medical Care, 43*(3), 1-9.

O'Malley, A., Kerner, J. & Johnson, L. (1999). Are we Getting the Message Out to All? Health Information Sources and Ethnicity. *American Journal of Preventive Medicine* 17(3), 198-202.

Otteson, C., Owen, G., & Meyerson, J. (2010, August). *A new age of immigrants: making immigration work for Minnesota.* The Minneapolis Foundation. Retrieved from http://www.minneapolisfoundation.org/Uploads/CuteEditor/Publications/Community/Immigrationsummary2010.pdf

Power, D. (2010). Caring for the Karen. a newly arrived refugee group. *Minnesota Medicine, 93*(4), 59-53.

Sequist, T., & Schneider, E. (2006). Addressing racial and ethnic disparities in health care: using federal data to support local programs to eliminate disparities. *Health Services Research, 41*(4p1), 1454-1468.

Spring, M. (2003). Sampling in difficult to access refugee and immigrant communities. *The Journal of Nervous and Mental Disease, 191*(12), 813.

Stratis Health. (2013). *Culture Care Connection*. Retrieved March 16, 2013 from web http://www.culturecareconnection.org/index.html

Stone, B. (2010). An evaluation of lifetrack services to Karen in a second wave of migration to Worthington, Minnesota: nine rays of light reach the star of the north. *Center for Urban and Regional Affairs*, doi: CMV-0285

Tartakovsky, M. (2013). Overcoming Information Overload. ***Psych Central***. Retrieved March 24, 2013, from http://psychcentral.com/blog/archives/2013/01/21/overcoming-information-overload/

U. S. Census Bureau. (2013). *American fact finder*. Retrieved March 15, 2013 from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml

U. S. Census Bureau. (2012). *Race*. Retrieved March 15, 2013 from http://www.census.gov/population/race/

Webb, S. (2013). *Cultural orientation: Considerations and essential messages powerpoint presentation.*, Houston, Texas. Retrieved April 20, 2013 from http://www.culturalorientation.net/providing-orientation/training

Yang, K. (2008). *The latehomecomer*. (1st ed.). Minneapolis, MN: Coffee House Press.

Yusuf, A. (2012). *The people of Minnesota: Somalis in Minnesota*. St. Paul, Minnesota: Minnesota Historical Society Press.

Appendix A

The MDH Grid

GRID – LANGUAGES RANKED BY MDH ACCORDING TO CRITERIA AS OUTLINED PER TABLE BELOW

Pop. Size (Census) Rank:
1 – <1000
2 – <5000
3 – <10,000
4 – >10,000
5– >25,000

Population Size (community) Rank:
1 – <1000
2 – <5000
3 – <10,000
4 – >10,000
5– >25,000

Is there an established community? Are these recent arrivals? Rank:
1– >10 yrs (Settled)
2– 6-10 yrs
3– 2-5 yrs
4– <2 yrs (Very New)

What is the likelihood that English is spoken well in this community? Rank:
1 – Very well (>80%)
2 – Well (50-80%)
3 – Not well (<50%)
4 – Not at all (0%)

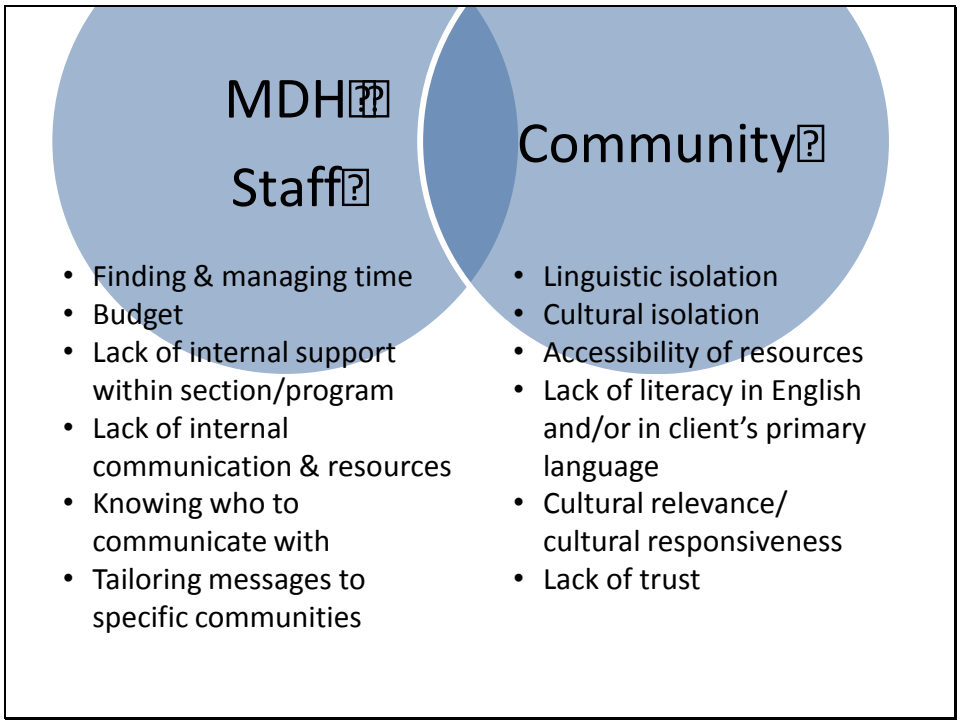
Can read/write in own language? Rank:
1 – No literacy at all
2 – Limited literacy (<50%)
3– Moderate literacy (50-80%)
4 – High literacy (>80%)

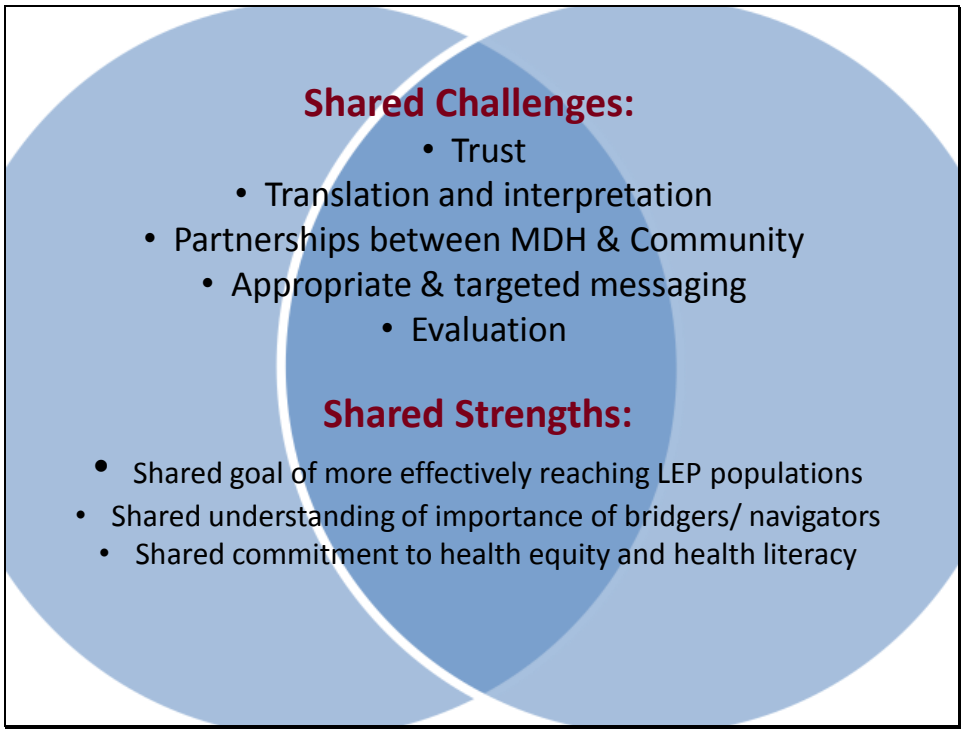
Rank	Language	Country of origin (population according to Census)	Census Population Estimate	Community Population Estimate	Language 1 (Primary)	Language 2 (Secondary)	Pop. Size (Census)-Rank	Pop. Size (Community)-Rank	Recency of Arrival	Likelihood of English Literacy	Literacy in own language	Total
1	Spanish	Spanish speaking countries*	84,000	175,000	Spanish	Varies	5	5	3	3	need better data**	16
2	Somali	Somalia	19,655	70,000	Somali	Varies	4	5	3	3		15
3	Hmong	Laos	24,792	60,000	Hmong	Thai	4	5	3	3		15
4	Russian	Russian speaking countries*	6,708	50,000	Russian	Varies	3	5	2	2		13
5	Karen	Burma (Other Eastern Asia)***	375	2,500	Karen	Burmese/Thai	2	2	4	3.5		11.5
6	Vietnamese	Vietnam	15,879	25,000	Vietnamese	French	4	4	1	2		11
7	Lao	Laos	24,792	13,000	Lao	Thai	3	4	1	3		11
8	Oromo	Ethiopia	9,925	10,000	Oromo	Amharic	3	3	2	2		10
9	Khmer	Cambodia	5,550	7,500	Khmer	Thai	3	3	1	3		10
10	Hindi	India	17,483	22,000	Hindi	English	4	4	1	1		10
11	Amharic	Ethiopia	9,925	10,000	Amharic	English	3	3	2.5	2		10
12	Tagalog	Philippines	7,426	11,000	Tagalog	English	3	4	1	1.5		9.5
13	Chinese (Mandarin)	China	9,415	20,000	Chinese (Mandarin)	Cantonese	3	4	1	1.5		9.5
14	Arabic	Iraq	759	2,000	Arabic	English	1	2	4	2.5		9.5
15	Nepali	Bhutan (Other South Central Asia)***	3,027	500	Nepali	Losthampa	1	1	4	3		9
16	Korean	Korea	13,670	20,000	Korean	Varies	3	3	1	2		9
17	Burmese	Burma (Other Eastern Asia)***	375	500	Burmese	Thai	1	1	4	3		9
18	Thai	Thailand	9,556	5,000	Thai	English	3	3	1	1		8

*Collapsed Central and South American countries; former Soviet Union countries
**UNESCO Literacy data are missing for some countries of interest (omitted)
***New populations selected per MDH refugee arrival data

Appendix B

Proaction Café Themes





Appendix C

Outcomes and Alternatives

Narrative of Process:

The Capstone team gathered information from MDH staff and data experts, analyzed and interpreted known data, and trained with a US Census staff person. These research activities led the team to develop three possible alternatives to be used to replace the original data "grid" that showed the current demographics of LEP populations in Minnesota when it was created in 2009. These included creating a new one-page grid with updated demographic information, creating links to resources that would help MDH staff understand the LEP populations with whom they are trying to communicate (created by external government and nonprofit entities), and creating a collection of resources including a decision-making tool that would allow someone using the tool to get an accurate picture of WHO they are trying to reach (numbers, geography), and HOW to communicate most effectively (culturally competent messaging, media and community partners, etc.). We suggested that MDH staff determine the type of data tool they would like developed by our team by considering the following questions:

- Will your choice help MDH make good decisions?
- Will it help reach LEP residents?
- Will MDH staff use it?
- Does it deliver an appropriate amount of information?
- Will it be easy to maintain and update?

Alternatives

Create a New One-Page Grid

The one page grid is similar to the original data set developed by MDH staff. The simplicity of the tool and attempt to prioritize communities to target messages is very appealing. Conversely, the grid promoted a kind of forced ranking when prioritizing LEP communications. The first option is to simply replace the one-page grid with a new one-page grid along with specific directions on keeping it updated.

Provide Links to Data/Information from Other Sources

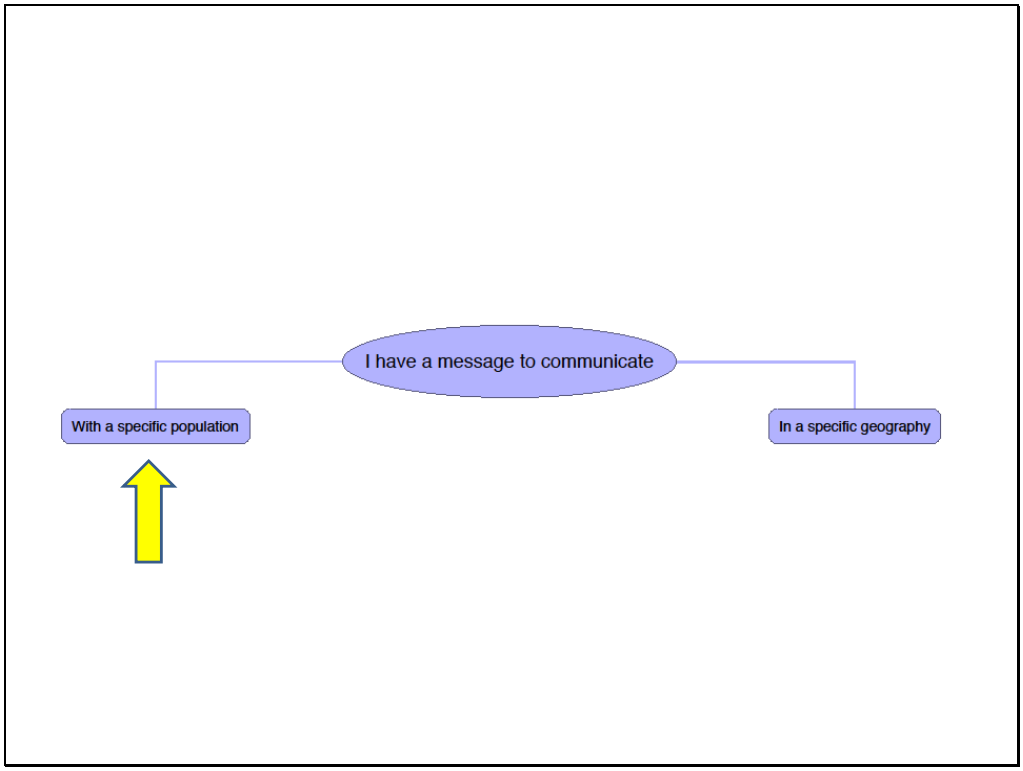
One of the directives of the MDH staff was to find a solution in which data could be updated regularly without a gross outlay of expenses. The easiest way to ensure updated information, especially if there are no staff assigned this duty as part of their job responsibilities, is to rely on a source that does the data upkeep in lieu of MDH. Stratis Health provides a good example of information and data that could be used instead of developing an entirely new resource.

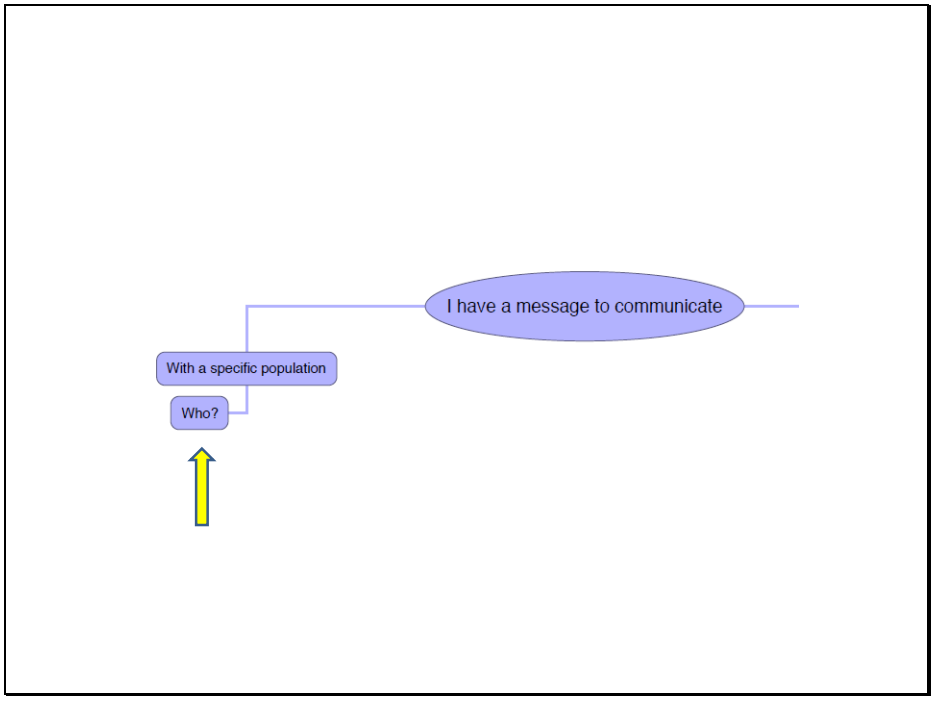
Create a Data Query Tool and Supporting Resources

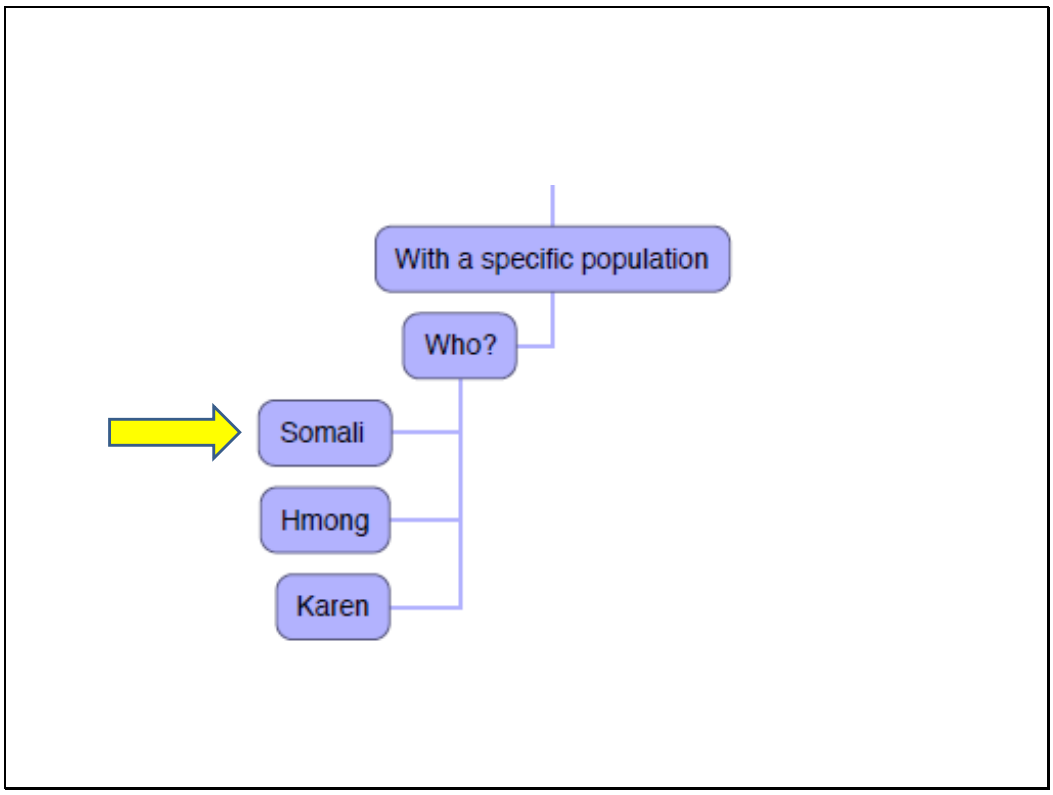
The data query tool is created with staff decision-making in mind (see Appendix D – Data Query Tool). Staff are led through their data query with questions to help them find the most appropriate and helpful information available. Quantitative data and qualitative resources are presented in the same space. This alternative would incorporate a feedback loop for MDH staff, including a place to virtually share questions, successes, and failures, and other content related to health communications with LEP populations.

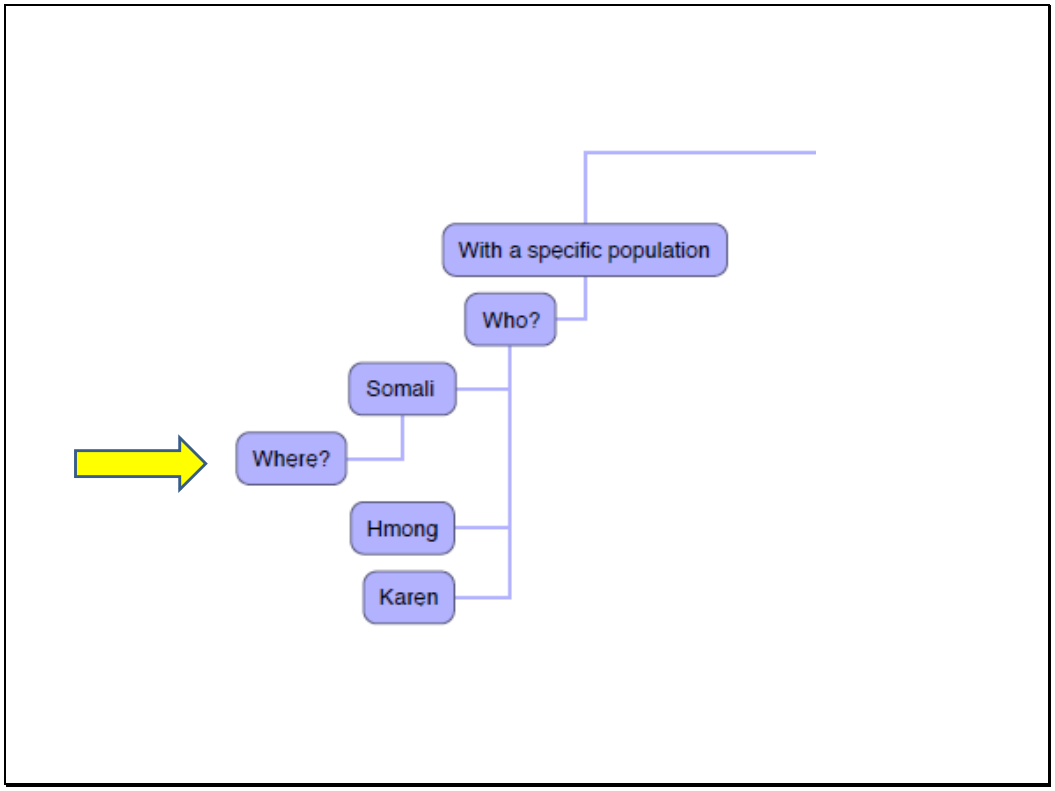
Appendix D
Data Query Tool

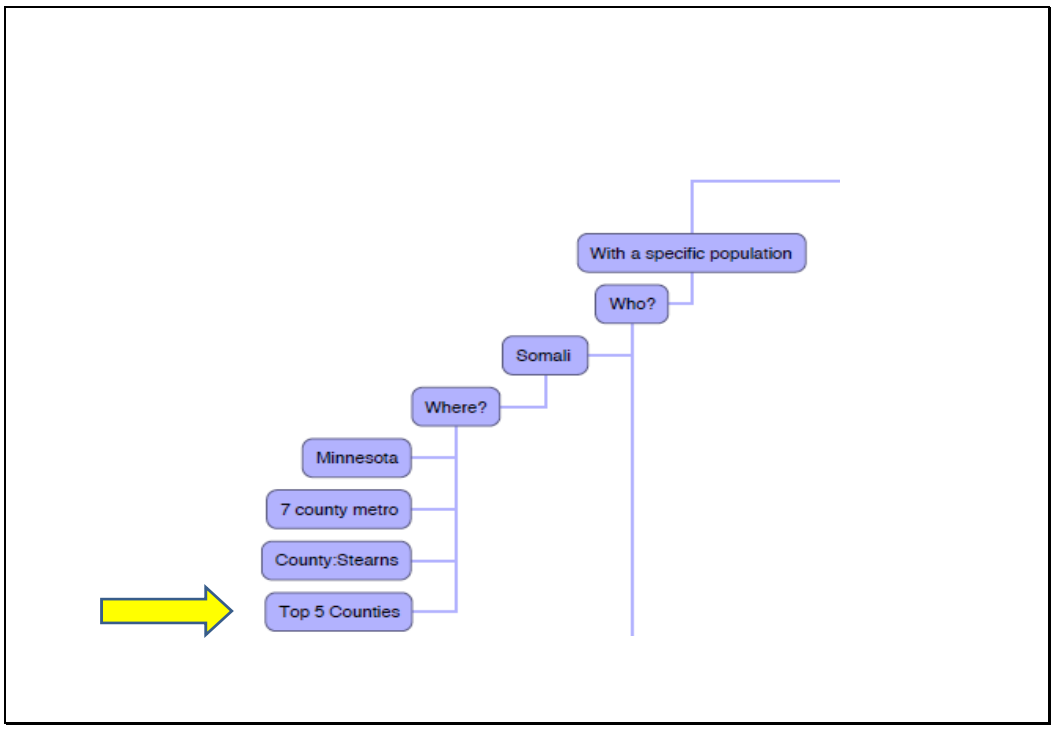
Search by population

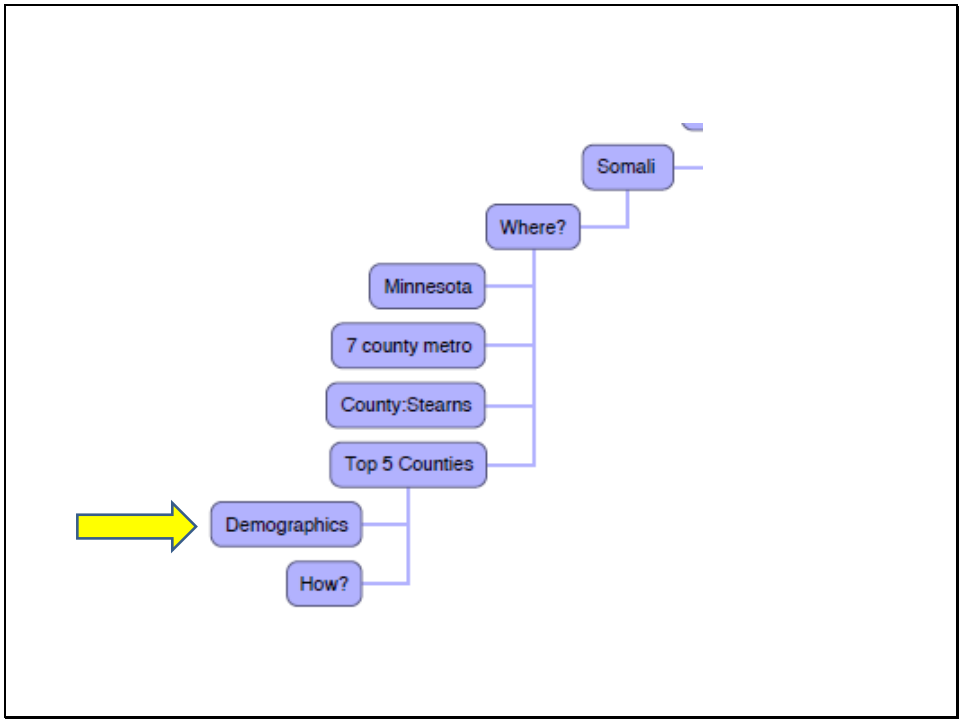




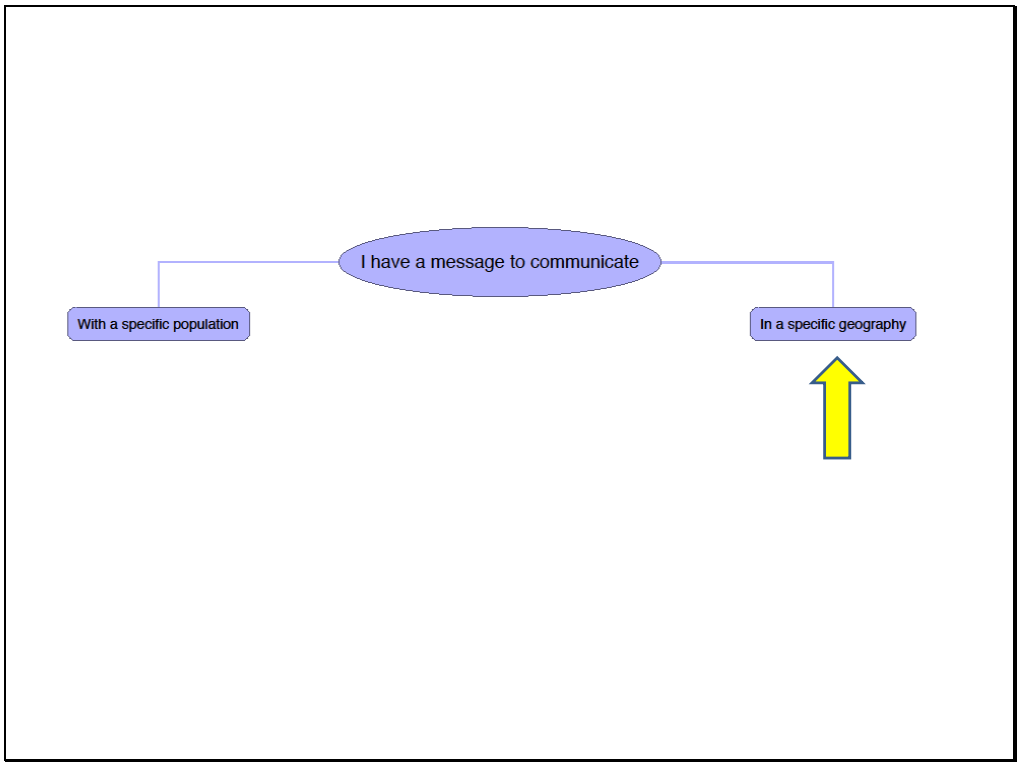

With a specific population
Who?
Somali
Hmong
Karen

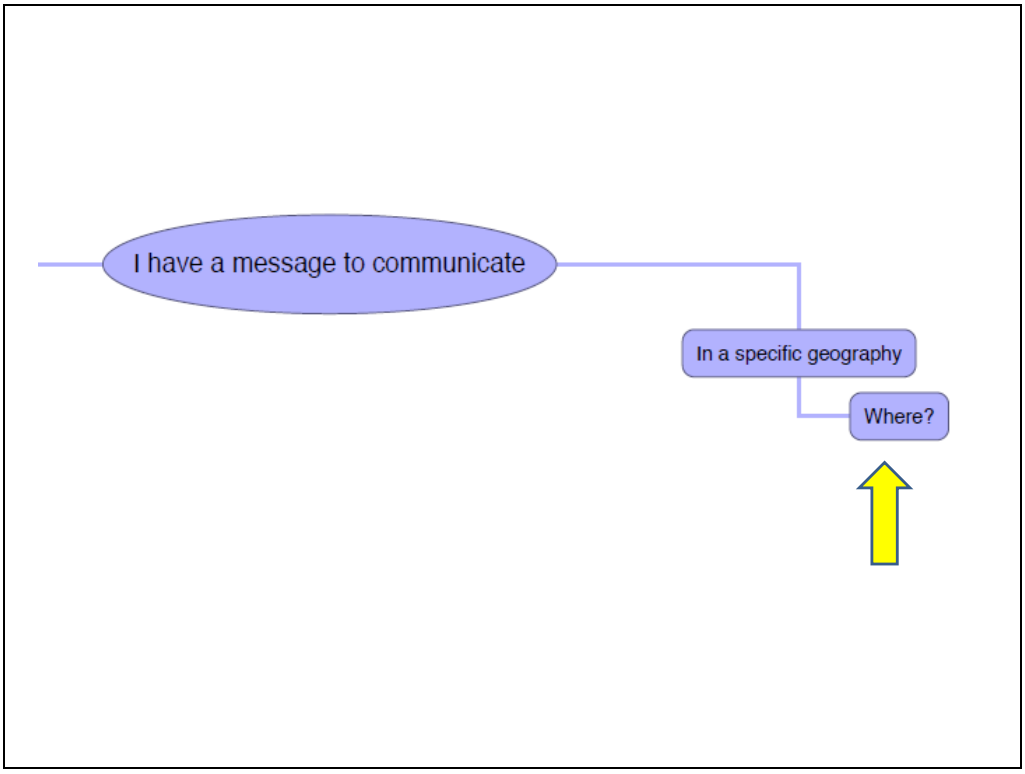

With a specific population
Who?
Somali
Where?
Hmong
Karen

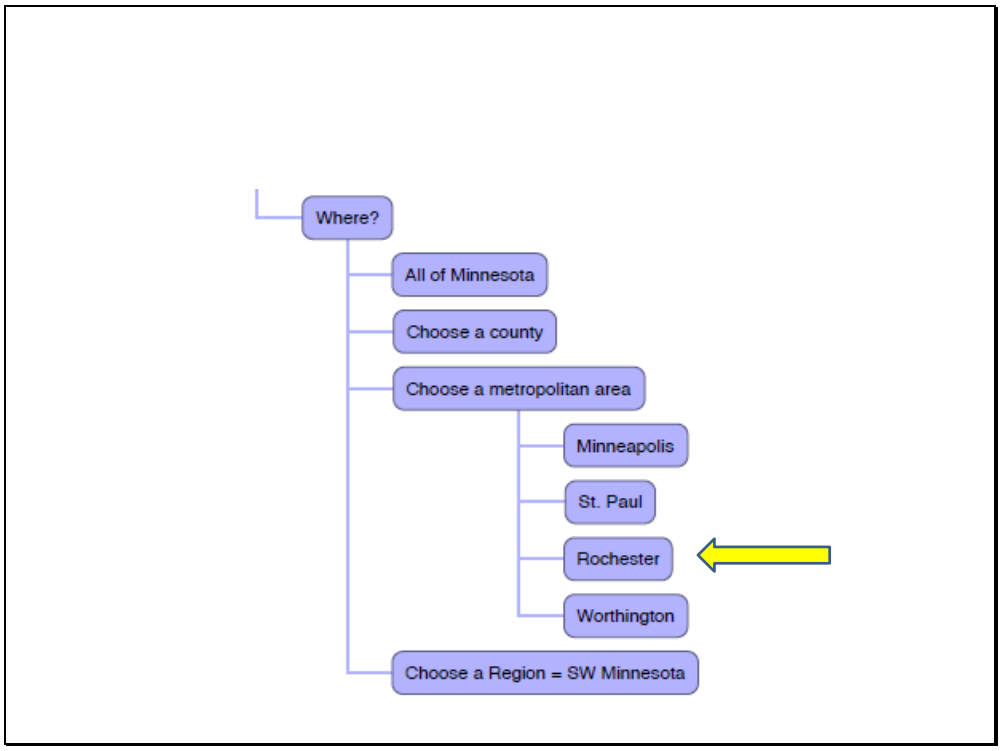

With a specific population
Who?
Somali
Where?
Minnesota
7 county metro
County:Stearns
Top 5 Counties

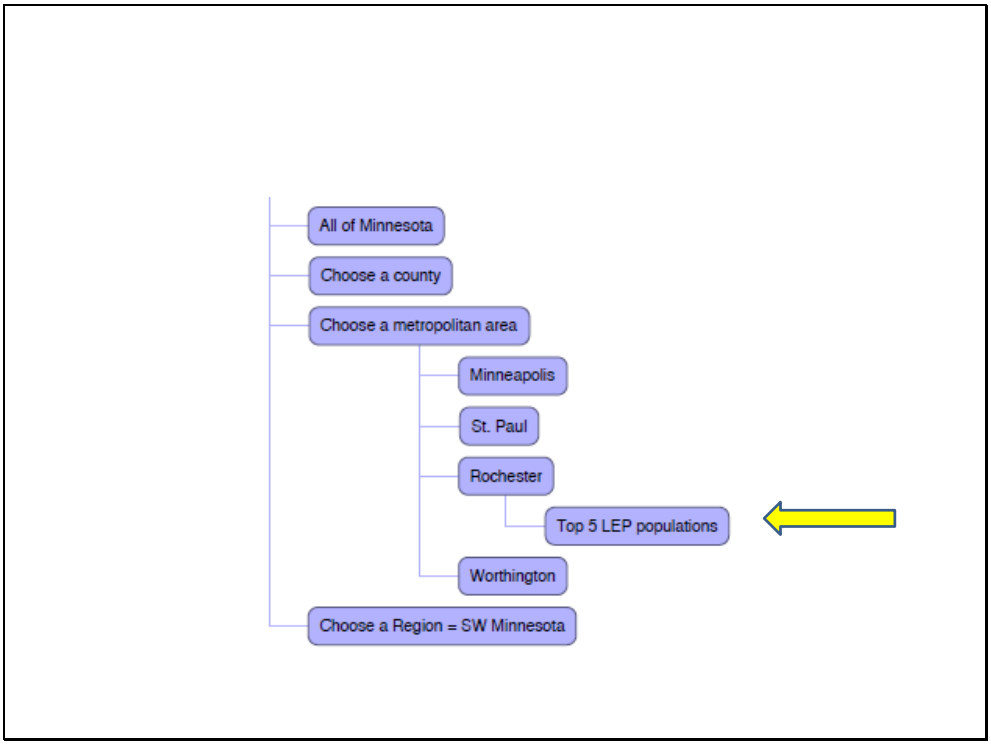

Somali
Where?
Minnesota
7 county metro
County:Stearns
Top 5 Counties
Demographics
How?

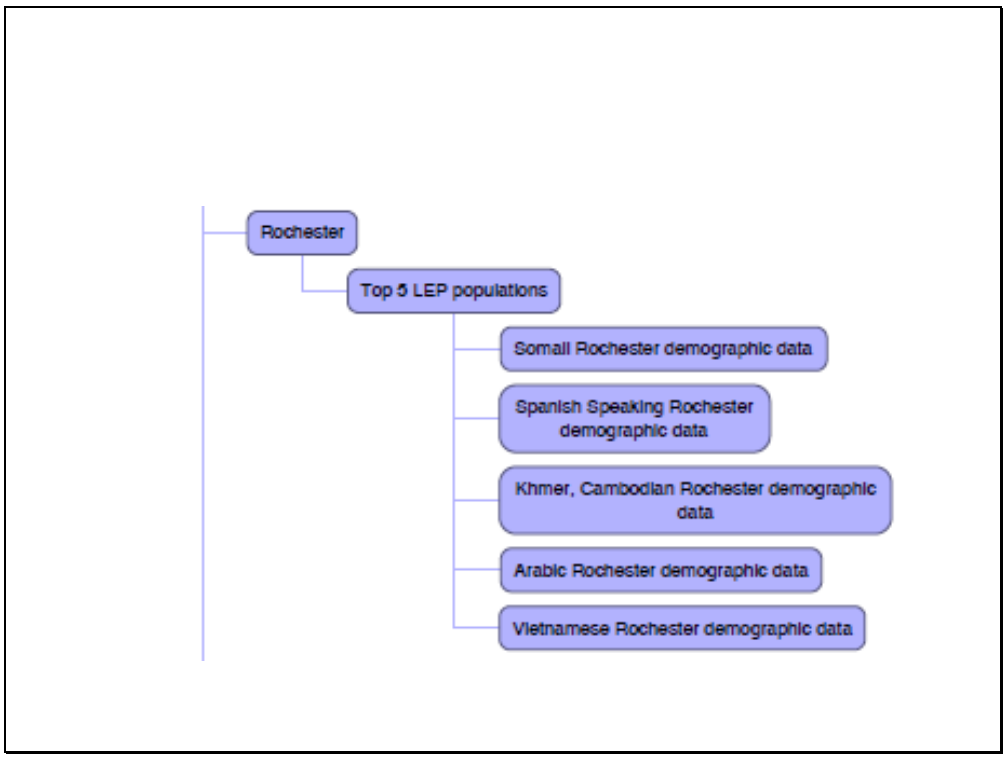
Search by geography






Where?
All of Minnesota
Choose a county
Choose a metropolitan area
Minneapolis
St. Paul
Rochester
Worthington
Choose a Region = SW Minnesota


All of Minnesota
Choose a county
Choose a metropolitan area
Minneapolis
St. Paul
Rochester
Top 5 LEP populations
Worthington
Choose a Region = SW Minnesota


Rochester
Top 5 LEP populations
Somali Rochester demographic data
Spanish Speaking Rochester demographic data
Khmer, Cambodian Rochester demographic data
Arabic Rochester demographic data
Vietnamese Rochester demographic data

Appendix E

Suggestions for Supporting Resources

Available through MDH's Intranet, and linked to the LEP data query tool, the Capstone team suggests that the following resources be available as a source of training and orientation to MDH staff about communicating health messages with LEP populations.

Cultural Profiles

Rationale: The impact of health messages is influenced by the culture of the communities receiving the messages. Cultural profiles will help MDH staff create culturally competent health messages.

Possible Resources:

- Ethnomed
  http://ethnomed.org/culture
- Internal MDH Minnesota Refugee Health Provider Guide
  http://www.health.state.mn.us/refugee/guide/
- Cultural Orientation Resources Center and their resources
  http://www.culturalorientation.net/
- WellShare International (Formerly Minnesota International Health Volunteers)
  http://www.wellshareinternational.org/
- Stratis Health's Culture Care Connection- with resources to "increase the cultural competence of health care providers serving Minnesota's diverse populations"
  http://www.culturecareconnection.org/

Translation Tips and Resources

Rationale: Literacy in primary languages varies from group to group. The preferred method of receiving health messages also varies from group to group. Translation tips and resources can provide MDH staff with information about when translation is best used and when it should be avoided. This is a place to name known, trusted, and effective vendors and to establish what makes for an effective translation.

Possible Resources:

- University of Minnesota School of Public Health resources on communicating with LEP populations
  http://www.sph.umn.edu/current/resources/communityengagement/lep/
- Medline Plus, A service of the U.S. National Library of Medicine, offers health information in multiple languages as well as quality guidelines for offering information in languages other than English: w.nlm.nih.gov/medlineplus/languages/languages.html

Database of Media and Community Partners

Rationale: MDH has multiple choices about how to share health messages (billboards, radio, TV, etc.). A database of media and community partners (including contacts and community leaders) would give staff a place to find known media and community partners who could help spread health messages and provide feedback about the content and delivery of messages. This resource gets information about these partners into a central, easily accessible database and out of any one staff person or program's head.

Possible Resources:

- Minnesota Community Health Worker Peer Network, Directory & Alliance: http://www.wellshareinternational.org/chwpeernetwork
- Refugee Health Information Network (RHIN) Online Platform for Resource Sharing: http://www.rhin.org/Default.aspx

Staff Feedback and Interaction Platforms

Rationale: A place to build the collective capacity of the MDH staff in LEP communications. A place to share promising practices, questions, struggles, lessons learned, etc.

Possible Resources: The content generated on these platforms would come from MDH staff. Possible forms could be a wiki (co-created content), a discussion forum for questions and answers, or other.

Working With Data Tips and Resources

Rationale: A resource is needed that briefly describes the limitations of data and the pros and cons of each data source used.

Possible Resources:

- Selections from *Strategies for Improving Communications with Limited English Proficient Populations in State Health: A project from the Minnesota Department of Health*
- "Data Makes a Difference: Practical Tips for Using Data to Address Health Disparities," The National Partnership for Action to End Health Disparities: http://communityscience.com/knowledge4equity/DataMakesADifference.pdf

Data Specific Resources

Rationale: Links to existing data sources can provide a quick connection for staff who would like to more deeply explore the data sets.

Possible Resources:

Links to sources discussed in the "Existing Data Sources" section of the paper are listed below. Additionally, the capstone team found numerous relevant resources listed at the MN Compass "Data Sets" link here (Minnesota Compass, 2009):
http://www.mncompass.org/immigration/more-measures.php#.UZDWs4Jm5ac

Existing Data Resources:

- US Census & ACS
  http://factfinder2.census.gov
- Minnesota Center for Health Statistics (MCHS)
  http://www.health.state.mn.us/divs/chs/
- Refugee Health Program
  http://www.health.state.mn.us/divs/idepc/refugee/stats/
- Primary Refugee Arrival Data
  http://www.health.state.mn.us/divs/idepc/refugee/stats/#arrival
- Minnesota Department of Education
  http://w20.education.state.mn.us/MDEAnalytics/Data.jsp
- Minnesota Department of Employment and Economic Development
  http://www.positivelyminnesota.com/Data_Publications/Data/index.aspx
- Minnesota Department of Human Services
  http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=County_Reports
- Migration Policy Institute data
  hubhttp://www.migrationinformation.org/datahub/about.cfm
- MN Compass tables and graphs
  http://www.mncompass.org/immigration/#.UZDZLIJm5ac
- IPUMS/ The Minnesota Population Center http://www.ipums.org/
- Minnesota State Demographer's Office
  http://www.demography.state.mn.us/immigration.htm
- Stratis Health
  http://www.stratishealth.org/index.html
- Minnesota Public Health Data Access Page
  https://apps.health.state.mn.us/mndata/