

Let The Tulips Bloom:

Cultivating Agency for Afghan Refugee Women and Children in Charlottesville by Removing Barriers in Healthcare and Mobility

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Phoebe Graham

Pierce Harding

Jake Hecker

Jack Hurst

Miranda Lao

Yimin Wu

PLAN 6020 Methods of Community Research

Dr. Barbara Brown Wilson

PLAN 6040 Quantitative Methods of Planning Analysis

Dr. Andrew Mondschein

In Partnership with:



Special thanks to Focus Group Attendees and Interviewees from:

UVA International Family Medicine Clinic

Albemarle County Public Schools

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Executive Summary

Background

Following the withdrawal of US troops from Afghanistan in 2021, thousands of Afghans evacuated from their country and have been seeking asylum internationally. For those coming to cities in the United States, many asylum applicants are placed for resettlement through the International Rescue Committee (IRC), a non-profit organization that works to assist international refugees and asylum seekers by helping them find housing and employment in their cities of placement. In recent years Charlottesville has accepted hundreds of Afghan refugees, in part due to the presence of existing Afghan communities in the area, and in part due to the presence of the IRC, which has had an office in Charlottesville since 1998.

Virginia Entry Federal Fiscal Year (Oct 1 - Sept 30)

	2019	2020	2021	2022	2023	Total
Afghanistan	100	85	99	404	126	814

Table 1: Number of Afghan refugees admitted in Charlottesville
Source: Virginia Department of Social Services

However, for refugees, arriving in a foreign country presents many additional challenges beyond navigating the fundamental needs of housing and employment. Cville Tulips is an organization in Charlottesville devoted to helping refugees acclimate through providing important services, and building a sense of community for Afghan refugee women and children through various hosted activities and events. Their mission statement is “to facilitate relationships between new residents from Afghanistan, longtime Afghan residents and the broader Charlottesville community” (Cville Tulips). Services they provide to the refugees include community programming (hosting social gatherings, arts and crafts events, English lessons for refugee women, and various youth activities), as well as assisting with transportation needs.

Research Question

This report was completed in collaboration with Cville Tulips. From the beginning of this research project, members of the Cville Tulips organization have been involved, giving us feedback, structure, and direction. Based on information they shared with us, we were inspired to investigate factors contributing to the agency—or lack thereof—of Afghan refugee women and children in Charlottesville. By agency, we are referring to the refugee’s abilities to make their own decisions on how and where to spend their time and resources. The Tulips informed us that barriers in access to transportation and healthcare present major challenges towards the agency of the Afghan refugee women and children they work with.

Our guiding research question is:

“What actions would maximize participant’s agency in terms of access to healthcare and overall mobility in Charlottesville?”

To answer this question, we will survey preexisting barriers in access to transportation and healthcare that inhibit the welfare and agency of Cville Tulips participants, who are Afghan refugee women and children in Charlottesville. Through a variety of quantitative and qualitative methods, we hope to illuminate how both of these aspects currently impact their agency and what steps can be taken in healthcare and transportation to help them attain a greater sense of agency.

Methodology and Key Findings

Through our qualitative methods, we aimed to identify barriers and opportunities in healthcare provision to increase Cville Tulips participant agency. In collaboration with Dr. Bonnie Gordon, one of the co-directors of the Cville Tulips, we arranged a focus group, whose members included the other co-director of the Cville Tulips, an educator from Albemarle County Public Schools who works with Afghan refugee children and families, and several healthcare practitioners—doctors and medical residents—who work directly with Afghan refugee women and children through UVA's International Family Medicine Clinic (IFMC).

Following the focus group, we coded the transcript. In this coding, we highlighted major themes and barriers regarding Cville Tulip participant agency that were identified by focus group members. These were:

<i>Mental Health</i>	social and physical isolation of participants contributes to detrimental mental health outcomes
<i>Cultural Barriers</i>	lack of participant understanding of US healthcare and transportation system rules of engagement, including navigating pedestrian networks and public transit, and the differences between different healthcare clinics (e.g. - Emergency Room vs. Urgent Care vs. Primary Care)
<i>Language Barriers</i>	limited access to oral translators, limited participant written literacy in Dari, Pashto, or English
<i>Transportation Barriers</i>	stymied opportunities to obtain driver’s education

We then compiled a table of resources and recommendations to be shared with focus group members, addressing each of these themes and their related barriers.

Our quantitative methods focused on assessing barriers and opportunities for increased participant agency in Charlottesville’s multimodal transportation networks. We employed three methods of analysis:

<i>Transit Accessibility Analysis</i>	assessment of participant accessibility to Charlottesville Area Transit (CAT) bus stops. Using ArcGIS Pro network analysis tools, CAT bus stops within 5 and 10 minute walks of participant neighborhoods were identified
<i>Amenities Proximity Analysis</i>	assessment of participant proximity to five types of public amenities in Charlottesville (grocery stores, healthcare facilities, public schools, public libraries, and public parks)
<i>Walkability Comparisons</i>	evaluation of pedestrian network infrastructure and walkability in Charlottesville based on standards from the United States Environmental Protection Agency (EPA) Smart Location Database (SLD)

Our key takeaway from our quantitative analyses is that: of the areas in Charlottesville that Cville Tulips participant residences are placed in, many lack access to pedestrian infrastructure, public transit infrastructure, and public amenities. In particular, residences located in the northern part of Charlottesville (The Meadows) and southern part (Fifeville) are among the most isolated.

Recommendations

Although our report details our qualitative and quantitative approaches separately, marking an apparent divide between both the methods and their respective topics of healthcare and transportation, we do not treat their overall analysis separately. The two approaches and topics are interrelated and inform one another, each contributing layers to our understanding of the barriers to agency experienced by Cville Tulips participants.

The recommendations we offer in this report aim to improve the agency of Cville Tulips participants at two levels: individual and structural. To improve agency at the individual level, we recommend connecting local educators and healthcare practitioners to appropriate resources and educational materials so that they can improve communication between themselves and Cville Tulips participants, better imparting an understanding of healthcare and transportation systems and services. To improve agency at the structural level, we recommend that those in charge of the built environment of Charlottesville are made aware of the deficiencies of amenities, services, and infrastructures experienced by various regions in the city, and take appropriate actions to remedy these large gaps.

We believe that together, these actions will maximize the agency of Afghan refugee women and children here in Charlottesville. We hope that their increased agency will not only empower them within their own lives, but strengthen the collective communities they are a part of, resulting in a better world for all.



Healthcare

When approaching our questions about healthcare access, we decided to design and host a focus group made up of local professionals involved in the care of Afghan refugees, particularly women and children. The goal of this focus group was to facilitate discussion between individuals who work across various organizations and departments. We believe these discussions helped to build new connections and share crucial information. We also carried out individual interviews with anyone who could not make it to the focus group but still wanted to provide their input.

Methodology

The first crucial step in our focus group preparation was to identify key stakeholders in the local healthcare and education fields who regularly work with Afghan refugees. In this endeavor, we relied heavily on the expertise and guidance of Dr. Bonnie Gordon, a founding faculty member of the Equity Center, a Professor in the Music Department, and co-director of the Sound Justice Lab. One of the Lab's current community projects is Cville Tulips.

By speaking with Dr. Gordon, we learned more about the network of care providers that Cville Tulips partners within Charlottesville. While the city has an extensive healthcare network, the UVA International Family Medicine Clinic (IFMC), established in 2022 through the UVA Department of Family Medicine, stood out as the primary healthcare provider for refugees. This clinic works towards being a trusted pillar of support for the local refugee and immigrant populations, aiming to offer comprehensive and culturally sensitive medical services. Educational professionals from the Albemarle County Public School system are another crucial stakeholder we sought to include in our focus group. Outside family clinics, schools are a primary point of contact for refugee families attempting to find their place in the Albemarle/Charlottesville community. Once we understood the importance of these two stakeholder groups, together with Dr. Gordon, we compiled a list of people to invite to participate in our focus group, reached out to these individuals for interest and availability, and coordinated a meeting time.

The second step in our preparation process was to ensure a convenient setting for our potential participants by finding a time and place that suited them best. Recognizing that the majority of people on our list were full-time professionals, we offered a range of options after 4 pm through a Doodle poll. After careful consideration, we identified an evening time that was suitable for a little over half of our potential participants. Once we agreed on this optimal meeting time, we strategically chose to hold the focus group at UVA's Equity Center on the downtown mall. This location was selected due to the existing rapport between the Equity Center and the Cville Tulips, as well as its central location in the city, making it easily accessible for all.

The third and final step of our preparation process was to formulate our questions. Once we started brainstorming, we had a few initial considerations to address. To be mindful of our participants' time, we planned to keep the focus group to around an hour in total length. This time frame encouraged us to craft a short list of questions designed to spur conversation among the participants and cover as much ground as possible within an hour's time. Since we knew our group would be comprised of both healthcare and education professionals, we made sure that most of our questions were general enough that both sides would have an easy time responding. Lastly, Cville Tulips recently received a grant to make educational materials for Afghan refugees, so we added a question that focused on seeking input on what materials are needed and would make the most useful impact. We came up with the following questions:

1. What brought you to work with C-Ville Tulips, and why do you stay?
2. Currently, what are the biggest obstacles to healthcare access and communication for the Afghan refugee population in Charlottesville as you see it?
3. What issues related to women's health highlight cultural differences and language barriers? How do you navigate these?
4. What would you want patients to understand before a visit?
5. What communication strategies and care methods have been working well?
6. What kinds of images and texts would you like to see in a coloring book geared towards women and children?
7. Is there anything we have not discussed that should be covered today?

Focus Group Proceedings

Our focus group was attended by eleven individuals:

- Three members of our research team **(3)**
- Our professor, Dr. Barbara Brown Wilson, who teaches PLAN 6020 Methods of Community Research **(1)**
- Two co-directors of the Cville Tulips organization **(2)**
- An educator from Albemarle County Public Schools who specializes in working with students in the English-as-a-second language (ESL) program, many of whom are Afghan children **(1)**
- Four healthcare professionals who work at the UVA IFMC, two of whom are doctors, and two of whom are medical residents. **(4)**

The focus group provided a space for healthcare and educational professionals to have a concentrated conversation about their experiences working with the Cville Tulips. While almost everyone in the focus group volunteered and worked regularly with Cville Tulips participants, they rarely had an opportunity to share their experiences, successes, lessons, hopes, and visions for the future of refugee healthcare. This focus group provided a space to do so and share important resources that we have compiled in the results section.



When moderating a focus group, it's important to be aware of existing power dynamics. There is a clear hierarchy in the medical field between doctors and nurses. It can be a vulnerable experience sharing your experience, mistakes, and perspectives in front of coworkers, bosses, or strangers from different fields. Fortunately, this group was very comfortable with each other, and every participant contributed to the conversation. Everyone was willing to share, so much so, that the conversation had to be guided to stay on track for time management. The conversation flowed naturally with participants answering the last few questions without prompting.

Participants expressed how helpful it was to hear each other's firsthand experiences and learn from each other's stories. This interdisciplinary team shared their perspectives on the barriers they face when working with refugee patients as well as what they saw as refugees' most challenging obstacles to accessing healthcare. Their insightful reflections, recommendations, and resources are compiled in the results section and **Appendices A** and **B**.

Results

Following the focus group, we created a transcript of the conversation and revisited it to identify main themes and keywords. Once the main themes and keywords were identified, we used the software Dedoose to identify every instance in which these themes and keywords appeared in the transcript. This helped determine which issues were discussed most often, which ones were discussed together frequently, and which issues were talked about least often. The definitions of these words within the context of our conversation can be found in **Appendix C**. When barriers or themes were discussed in the same context or quote, they were "co-coded" or "co-occurred" in the transcript, meaning the same part of text were highlighted for more than one theme or key word. The co-occurrence chart (**Figure 1 - page 09**) visualizes the frequency of co-occurrence in the transcript. Warm colors such as red represent phrases with high co-occurrence and cool tones such as blue show low co-occurrence (or low overlap with other themes).

The two themes that saw the highest overlap were Example of a System Flaw and Accessibility. These broad definitions overlap frequently in this context because when an example of a system flaw is discussed, it often affects a patient's access to healthcare, education, or transportation as well. The second highest co-occurrence is an Example of a System Flaw and Cultural Barrier. This indicates that cultural barriers to healthcare came up frequently in the focus group with an example of a system flaw. Cultural barriers also overlapped with Accessibility, Advocacy, Healthcare Barrier, Education Barrier, Language Barrier, Transportation Barrier, and Women's Healthcare. These barriers reflect a multitude of cultural nuances impacting various aspects of life, including healthcare administration, family dynamics, gender roles, transportation needs, and communication gaps between patients and healthcare providers. These challenges highlight the

Codes	Codes	Accessibility	Advocacy	Agency	Cultural Barrier	Education Barrier	Example of System Flow	Example of System Success	Healthcare Barrier	Housing Barrier	Isolation	Language Barrier	Local	National	Pediatric Healthcare	State	Transportation Barrier	Women's Healthcare	Totals
Accessibility		9	16	14	11	22	4	14	1		4	3	1	14	1	8	6		128
Advocacy	9		6	8	4	6	4	3			1	2		2		1	3		49
Agency	16	6		14	3	11	1	4	1	1	4	1		1		4	6		73
Cultural Barrier	14	8	14		6	20	2	4	2	4	2	3		2		6	7		94
Education Barrier	11	4	3	6		9		5			3	1		5		4			51
Example of System Flow	22	6	11	20	9			11	2	4	2	2		9		5	6		109
Example of System Success	4	4	1	2							2			1	1		1		1
Healthcare Barrier	14	3	4	4	5	11				1	4			9			3		58
Housing Barrier	1		1	2		2					1	1						1	9
Isolation			1	4		4		1	1								1	3	15
Language Barrier	4	1	4	2	3	2	2	4	1									2	25
Local	3	2	1	3	1	2											1		13
National	1																		1
Pediatric Healthcare	14	2	1	2	5	9	1	9							1				44
State	1						1							1					3
Transportation Barrier	8	1	4	6	4	5				1		1						1	31
Women's Healthcare	6	3	6	7		6	1	3	1	3	2						1		39
Totals	128	49	73	94	51	109	16	58	9	15	25	13	1	44	3	31	39		

Figure 1: Dedoose Co-occurrence Chart of the coded transcript from our focus group

obstacles individuals encounter before seeking medical assistance and during their appointments.

The focus group conversation and the co-occurrence analysis not only illuminated the interconnectedness of various barriers, but also underscored the complex layers of challenges faced by the Cville Tulips. Emulating what the focus group participants discussed, this analysis emphasizes the imperative for holistic and culturally sensitive approaches when addressing healthcare disparities and reveals the barriers most frequently faced by refugees and their healthcare providers.



Limitations

Exploring the barriers faced by Afghan refugees in Charlottesville's healthcare system through a focus group has several limitations. Primarily, the small sample size of eight highly invested health and school employees may not represent all perspectives and experiences of care providers. While the focus group volunteers provided invaluable insights and years of real-life experiences, speaking to more healthcare and school system employees from different practices over multiple rounds of interviews would add additional insights to our findings. Consequently, the insights gained in this focus group may not fully capture the scope of challenges experienced by Afghan refugees in the community. The findings may also be constrained by the participants only coming from professional roles and the experiences are not from the refugees themselves. This decision was made to protect the privacy of the refugees and prevent extractionist practices or survey fatigue.

Furthermore, the dynamics within the focus group setting may have been influenced by social and power dynamics. Medical and school settings have clear hierarchical boundaries and participants, particularly nurses in the presence of doctors, might have felt compelled to conform to authority opinions, suppress dissenting opinions or alternative perspectives, or share experiences that may be seen as mistakes or unprofessional. This limitation can be exacerbated by the lack of anonymity in focus groups, as participants are all familiar with each other. Additionally, the absence of anonymity can hinder the authenticity of responses, as individuals may hesitate to disclose personal experiences or express dissenting viewpoints openly. While a focus group offers valuable insights, they are inherently constrained by their structure and dynamics, necessitating a mindful interpretation of their findings.

Key Findings and Recommendations

The following section contains more detailed information about topics that were consistently brought up in conversation during the focus group.

Mental Health

Isolation is one of the leading precursors to poor mental health and the focus group participants indicated that isolation is one of the most pervasive struggles among their Afghan refugee patients. Refugees' lives and social circles in Charlottesville can differ significantly from life in their home country. In Charlottesville, refugees are geographically separated from other families due to relocation services and housing availability. They can find themselves taking care of large families in cramped living conditions without the support of their sisters, aunts, mothers, mother-in-laws, cousins, and neighbors. Beginning a new life in a foreign country while learning a new language with little familiar support can lead to these common feelings of isolation.

Mental health conditions can manifest as physical symptoms, known in the medical field as somatization. Navigating care for individuals experiencing somatization due to underlying mental health conditions, such as anxiety, depression, or PTSD, becomes particularly challenging as the symptoms often mask the root cause, leading to misdiagnoses and ineffective treatments. This is made more difficult by the fact that mental health is extremely stigmatized in Afghan culture. This is obviously a complex problem to navigate with no clear solutions, but as discussed in the focus group, healthcare providers can start by taking the time to understand these issues and build trust with patients over time so that one day, conversations about such sensitive topics may be had.

Cultural Barriers

The most prevalent cultural barriers to healthcare faced by refugees that were identified by the focus group revolve around differences in medical service administration and provision as well as differences in gender-related expectations, between the United States and Afghanistan. For example, the Cville Tulips participants expect the gender of their drivers, healthcare providers, and/or translators to match their own in order to access and receive medical services. This can be a significant barrier to healthcare when providers of the same gender are unavailable.

Another example of a cultural barrier is appropriate use of the emergency room (ER), urgent care, and primary care. Participants of the focus group discussed the similarities and differences between the medical systems of Afghanistan and the US. The medical system in Afghanistan, especially in rural areas, tend to operate more similarly to our ER system. There, your entire family might go to the doctor when one member has a medical issue needing immediate attention. When this member of the family is seen by the doctor, the entire rest of the family might also expect to receive a check-up and necessary vaccinations at the same visit. In this type of system, preventative care, regular checkups, and monitoring of chronic issues are addressed simultaneously with immediate symptoms, for the entire family unit, rather than just one individual. These cultural differences and expectations of the doctor's office can lead to a higher burden on ER and urgent care systems and misunderstandings about the role of primary care. Addressing these cultural barriers necessitates not only cultural competence among healthcare providers but also the incorporation of culturally sensitive approaches in healthcare delivery, recognizing and respecting refugees' diverse cultural backgrounds and healthcare beliefs.

Language Barriers

Another major barrier that was discussed throughout the focus group was the inability of healthcare professionals and refugees to communicate with each other effectively. The ineffectiveness of this communication was due to limited understanding of English by refugees, and healthcare workers' limited understanding of languages Afghan refugees speak fluently, primarily Dari and Pashto. This language barrier was referenced in a number of different healthcare appointments that were discussed in the focus group. Members of the focus group discussed how the language barriers that occur in these healthcare appointments result in worse quality of healthcare visits.

An example of a language barrier impacting healthcare is therapy. Many refugees suffer from depression and anxiety, but very few therapists can speak Dari and Pashto. Therefore, many mental healthcare professionals are unable to help the refugees seeking psychological services to the fullest extent.

The focus group also discussed existing solutions in place that overcome some hurdles presented by language barriers. One solution was healthcare clinics hiring interpreters, who can speak with the refugees and handle logistics over the phone. Another solution that was discussed in the focus group involved the clinic hiring a case care worker who knows Dari and Pashto, and she has been able to bridge gaps in communication between the clinic community and the refugee families.

Based on the focus group discussion, we concluded a useful intervention that could be undertaken by Cville Tulips is pairing images or videos with audio. This intervention could help refugee families better understand logistics of healthcare in the U.S. Discussed in the focus group was manifesting this in terms of educational materials for refugees, with existing precedence in the form of videos made by the University of Minnesota. It is important to note, however, that cultural barriers are important to consider for overcoming language barriers. For example, the focus group conversation revealed the female refugees to strongly prefer to have female interpreters.

Transportation Barriers

Finally, we noted that the focus group discussion included many remarks about specific instances in which transportation deficiencies worsened refugees' experience of physically accessing health care clinics and other important destinations. A prominent transportation barrier to healthcare that was discussed was the inability for Afghan refugee teenagers to obtain driver's licenses. In Virginia schools, students typically take the driver's education course as a part of 10th grade health class. However, it is not required to pass health in order to graduate. Additionally, many educators mistakenly believe Afghan families will not allow their teenage daughters to drive, and thus enroll Afghan girls in health class over the summer, freeing up a space for an elective course during the main school year. Importantly, in the summer session of 10th grade health, driver's education is not included as part of the curriculum. This deprives Afghan families of an opportunity to add a licensed driver in the family. Afghan refugee families often struggle to have enough available drivers, which presents itself as a barrier to healthcare access when there are no available drivers to take family members to scheduled healthcare appointments. Therefore, confusion over driver's education for Afghan girls is a major concern for Cville Tulips. We find it to be worthwhile for Cville Tulips to ensure refugee families have access to the drivers education handbook, which helps teenagers prepare for the DMV drivers test.

What was also prevalent in discussions regarding transportation was cultural practices. In many instances, cultural norms have proved to inhibit refugees from using services like public transportation, ridesharing (Uber, Lyft), school buses, and the Medicaid taxi. These issues require very nuanced and individualized solutions, but generally refugees need drivers of the same gender.

Overall lack of mobility compounds these transportation barriers to healthcare. In the following section, we will analyze spatialized quantitative data describing Cville Tulip participant access to pedestrian networks, public transportation networks, and proximity to public amenities here in Charlottesville to gain a more complete picture of transportation barriers and opportunities.



Transportation

We had previously heard from Dr. Gordon that Cville Tulips participants had a difficult time navigating to their daily destinations from their homes. In order to gain a fuller picture of how transportation networks in Charlottesville help to facilitate or acts as a barrier to Cville Tulip participant agency, we conducted three spatial and quantitative analyses, each focused on a different possible element of these daily journeys.

Methodology Overview

In this section, we describe the three methods of quantitative analysis used. Each method of analysis is focused on identifying barriers and opportunities for increased participant agency in navigating to destinations using Charlottesville's multimodal transportation networks. The three methods used are: Amenities Proximity Analysis, Transit Accessibility Analysis, and Walkability Comparisons. The first two methods of analysis are spatial analyses of locations selected by us, with evaluation criteria based on our judgment. The third method of spatial analysis uses data and their corresponding standards from the US EPA Smart Location Database. This helps us to verify and validate the conclusions we draw from the first two analyses using a standard developed by a federal agency. Their data and standards are based on national data, which not only lends us some additional credibility, but can also serve as a connection between our area of study and the national context.

In each section of analysis, we detail the analysis methodology, results, and limitations. We begin with Amenities Proximity Analysis to gain a better understanding of where the residential neighborhoods of Cville Tulips participants are located in relation to public amenities which are likely to be desired destinations. We then describe the results of our Transit Accessibility Analysis to impart a better understanding of how accessible the local bus network run by Charlottesville Area Transit (CAT) is to the residential neighborhoods of Cville Tulips participants, which helps to provide access to amenities not in the immediate vicinity of these neighborhoods. Finally, we look at two metrics from the US EPA SLD to evaluate the walkability of the areas Cville Tulip residences are located in, as well as to validate our results from the first two analyses.

Amenities Proximity Analysis

We start our quantitative analysis by illustrating the distances between the residential neighborhoods of Cville Tulips participants to various public amenities in and around Charlottesville. The public amenities we examine fall into five categories: grocery stores, healthcare facilities, public schools, public libraries, and public parks. Notably, we did not aim for a comprehensive categorization of public amenities: we did not include community centers, religious institutions, transportation hubs, or

commercial shopping centers, among other categories. The categories of amenities we selected are ones we believe that Cville Tulips participants might have reason to visit on a regular basis, rather than just upon rare occasion. In selecting the specific locations included in these categories, we decided to focus on public institutions. As a result, our maps and analysis are not meant to be interpreted as comprehensive inventories of grocery stores, healthcare facilities, schools, libraries, and parks or green spaces. To reiterate: for each of the amenity categories included as part of our proximity analysis, we want to acknowledge that this is not a comprehensive list of such amenities in Charlottesville. Our proximity analysis might be best understood as a cursory overview with opportunities for future updates. We believe this is reasonable, as new amenity locations are periodically opened or closed, requiring the list and analysis to be updated. Further discussion of amenity selection in each of the categories is described in their respective sections.

The following maps were created using ArcGIS Pro, with destination locations obtained from Google Earth and Cville Tulips. In order to place each of the destinations on a map, we needed to obtain its address or latitude-longitude coordinates. The locations of the Cville Tulip participant's residential neighborhoods are general rather than exact, in order to protect the residents' privacy.

Grocery Stores

AMENITY SELECTION

For our list, we included major grocery stores that generally provide for a spread of grocery needs. There are notable exclusions from this list, which might be considered limitations: convenience stores (7-Eleven, Quik Mart, etc.), international and specialty grocery stores (Afghan Grocery & Convenience Store, Charlottesville Oriental, etc.), and membership stores (Costco, Sam's Club, etc.) are excluded. Other exclusions include Reid's Super Save Market and Grand Market, both located near North Downtown; as well as a Food Lion located at 585 Branchlands Blvd near the Commonwealth area. As we'll see, the exclusions of these grocery stores in particular do not change the major results of our analysis.

RESULTS

From **Figure 2**, we can see that the majority of major grocery stores in Charlottesville tend to be located on the edges of the city. Several areas that completely lack a grocery store in close proximity to Cville Tulips participant neighborhoods include Fifeville, or the area between the University of Virginia campus and downtown; as well as neighborhoods in the north of Charlottesville that extend of Route 29. There is also a participant neighborhood in Locust Grove, north of Pantops, that appears to be isolated from grocery stores.



Amenities Proximity Analysis: Grocery Stores

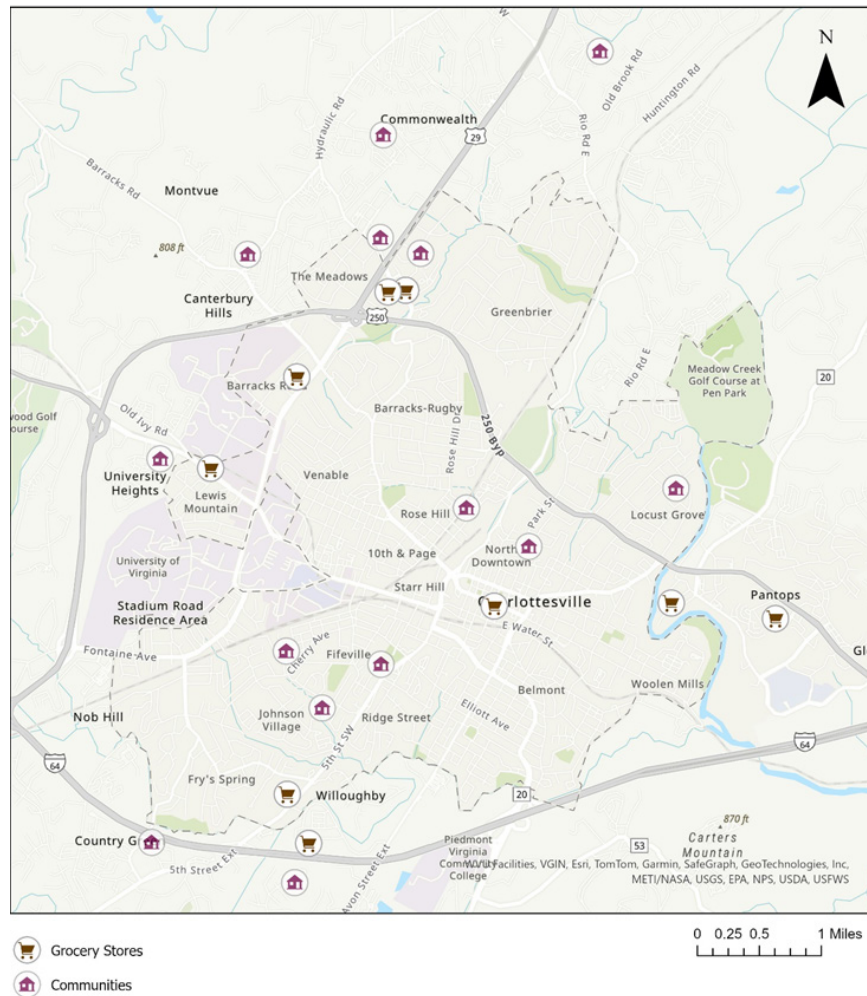


Figure 2: Map of Cville Tulip Communities and Grocery Stores in the Charlottesville area

Grocery Stores	Address	Zip Code
Food Lion	570 Riverbend Rd.	22911
Wegmans	100 Wegmans Way	22902
Trader Joe's	2025 Bond St.	22901
Whole Foods Market	1797 Hydraulic Rd.	22901
Kroger	1159 Emmet St. N	22903
Market Street Market	400 Market St.	22902
Harris Teeter	975 Emmet St. N	22903
Foods Of All Nations	2121 Ivy Rd.	22903
Kroger	1904 Emmet St.	22903
Food Lion	1131 5th St. SW	22902
Giant	1900 Abbey Rd.	22911

Table 2: Table of grocery store addresses found in Figure 2

Healthcare Facilities

AMENITY SELECTION

For our list, we included major health centers and hospitals in the area. Notably, we did not include individual private clinics for general practitioners, nor did we include the clinics of medical specialists, such as dentists or optometrists. We wanted to focus on the clinics that are most likely to be attended by Cville Tulip participants, which tend to be urgent care centers, emergency rooms, or those affiliated with the UVA International Family Medicine Center, which is located in the UVA Primary Care Center, which we've included as part of the UVA Hospital.

RESULTS

From **Figure 3**, we can see that the majority of participant's residential neighborhoods are not located very close to the healthcare facilities they may need to frequent. Healthcare facilities are concentrated in three areas: the northern fringe of Charlottesville, to the west of Route 29; central Charlottesville, at the eastern edge of the University of Virginia campus where the UVA Hospital is located, and at the eastern edge of Charlottesville, out by and past the Pantops area. This likely means that Cville Tulips will depend heavily on non-pedestrian modes of transportation to attend healthcare appointments, presenting logistical difficulties in navigating rideshare services (Medicaid taxi, Jaunt, Uber/Lyft), public transportation, or having an available personal automobile and driver.

Healthcare Facilities	Address	Zip Code
UVA Hospital	1215 Lee St.	22903
MedExpress Urgent Care	260 Pantops Center	22911
Charlottesville Free Clinic	901 Preston Ave. Ste. 300	22903
Pantops Family Center	1490 Pantops Mountain Pl. Ste. 200	22911
Martha Jefferson Hospital	500 Martha Jefferson Dr.	22911
Family Medicine of Albemarle	1450 Sachem Pl.	22901

Table 3: Table of healthcare facility addresses found in Figure 3

Amenities Proximity Analysis: Healthcare Facilities

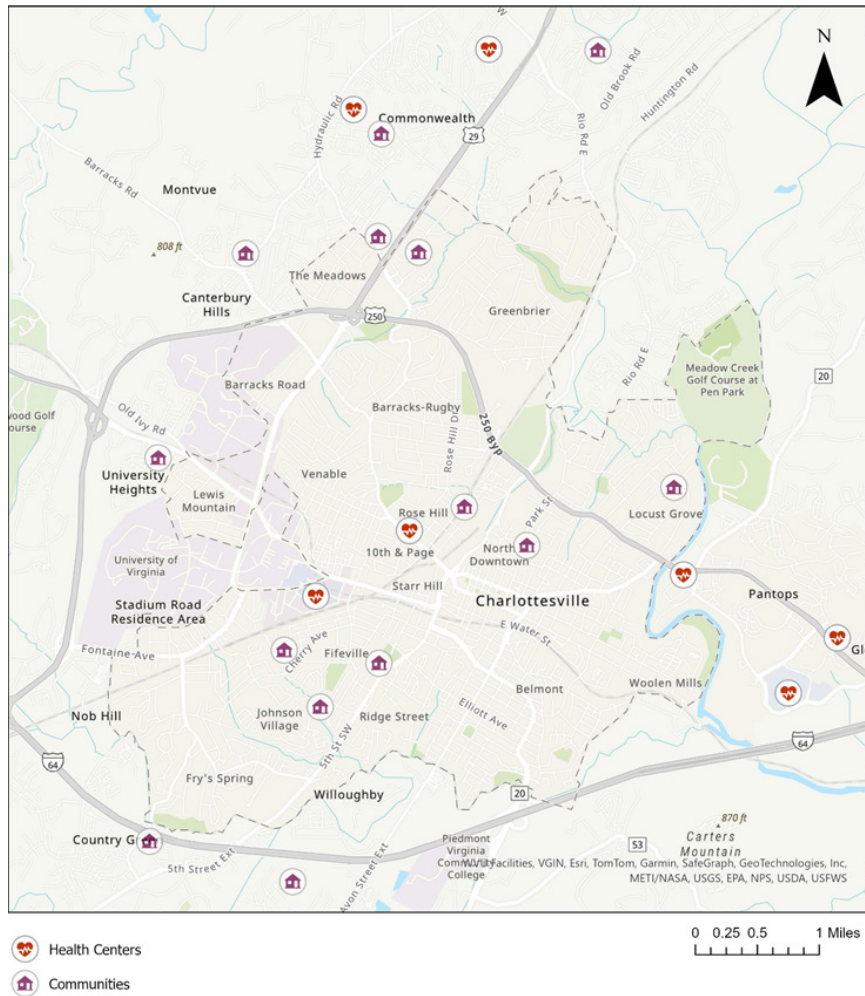


Figure 3: Map of Cville Tulip Communities and Healthcare Facilities in the Charlottesville area

Public Schools

AMENITY SELECTION

For our list, we included all public schools in Charlottesville at the elementary, middle, and high school levels. We did not include private education institutions, including preschools, after-school educational facilities, tutoring centers, or private schools at any of the three levels. This is because these institutions require a tuition, which is an additional barrier of entry that likely prevents many Afghan refugee children from enrolling.

RESULTS

From **Figure 4**, we can see that spatial distribution of public schools is fairly uniform across Charlottesville. However, we do again see that participant residential communities in the north of Charlottesville along Route 29 appear to be quite distant from any public schools, certainly none within walking distance.

One major limitation in this map is that not all children can attend any public school at any time. Their public schools they can attend depend heavily on the age of the child and what grade they are in. In Charlottesville, the majority of public schools are at the elementary level (11 out of 15), as is typical for a public school system. There are two middle schools and two high schools. Thus, middle schoolers and high schoolers are likely to face a more burdensome daily commute to school. Although Charlottesville Public Schools have school bus services, space on the buses is limited, potentially acting as a barrier of access to transportation, placing additional burden on families to send their children to school or to coordinate alternatives. Further, we heard from the focus group that among recent Afghan refugees, there is a general distrust and fear of riding buses.

Public Schools	Address	Zip Code
Clark Elementary School	1000 Belmont Ave.	22902
Venable Elementary School	406 14th St. NW	22902
Johnson Elementary School	1645 Cherry Ave.	22903
Jackson-Via Elementary School	508 Harris Dr.	22903
Walker-Upper Elementary School	1564 Dairy Rd.	22903
Burnley-Moran Elementary School	1300 Long St.	22901
Woodbrook Elementary School	100 Woodbrook Dr.	22901
Agnor-Hurt Elementary School	3201 Berkmar Dr.	22901
Mountain View Elementary School	1757 Avon St. Ext.	22902
Greenbrier Elementary School	2228 Greenbrier Dr.	22901
Marry Carr Greer Elementary School	190 Lambs Ln.	22901

Table 4a: Table of public elementary school addresses found in Figure 4

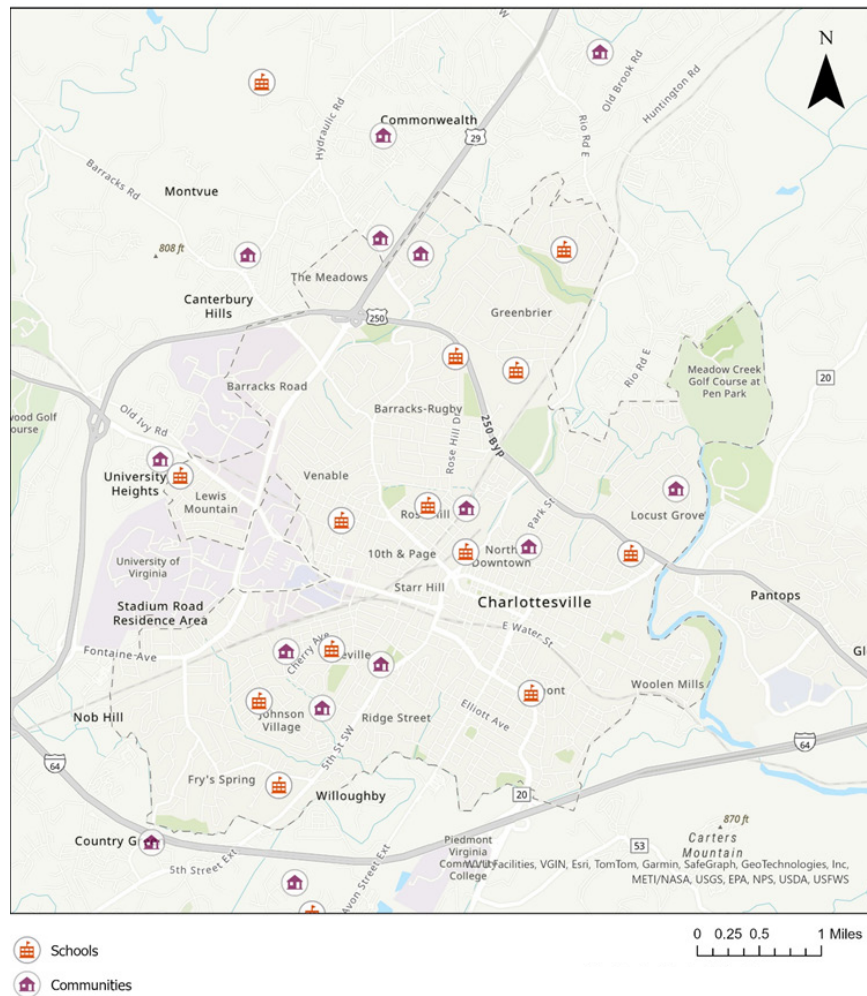


Figure 4: Map of Cville Tulip Communities and Public Schools in the Charlottesville area

Public Schools	Address	Zip Code
Buford Middle School	1000 Cherry Ave.	22903
Jackson P Burley Middle School	901 Rose Hill Dr.	22903
Charlottesville High School	1400 Melbourne Rd.	22901
Monticello High School	1400 Independence Way	22902

Table 4b: Table of public middle and high school addresses found in Figure 4

Public Libraries

AMENITY SELECTION

For our list, we included the public libraries in Charlottesville. We did not include school libraries or the libraries run by the University of Virginia, as these are generally not open to use by the public.

RESULTS

From **Figure 5**, we can see that of the four libraries in the Charlottesville area, none are particularly close to participant residential neighborhoods. Only four of these neighborhoods appear to be within a 1-mile radius of a public library. Based on proximities alone, it is therefore unlikely that these libraries serve as a convenient or usable public amenity to most Afghan refugees, as they would have to go out of their way to visit a library.

Public Libraries	Address	Zip Code
Gordon Avenue Library	1500 Gordon Ave.	22903
Jefferson-Madison Regional Library	201 E Market St.	22902
Northside Library	705 Rio Rd. W	22901
McIntire Library	200 2nd St. NE	22902

Table 5: Table of public libraries addresses found in Figure 5



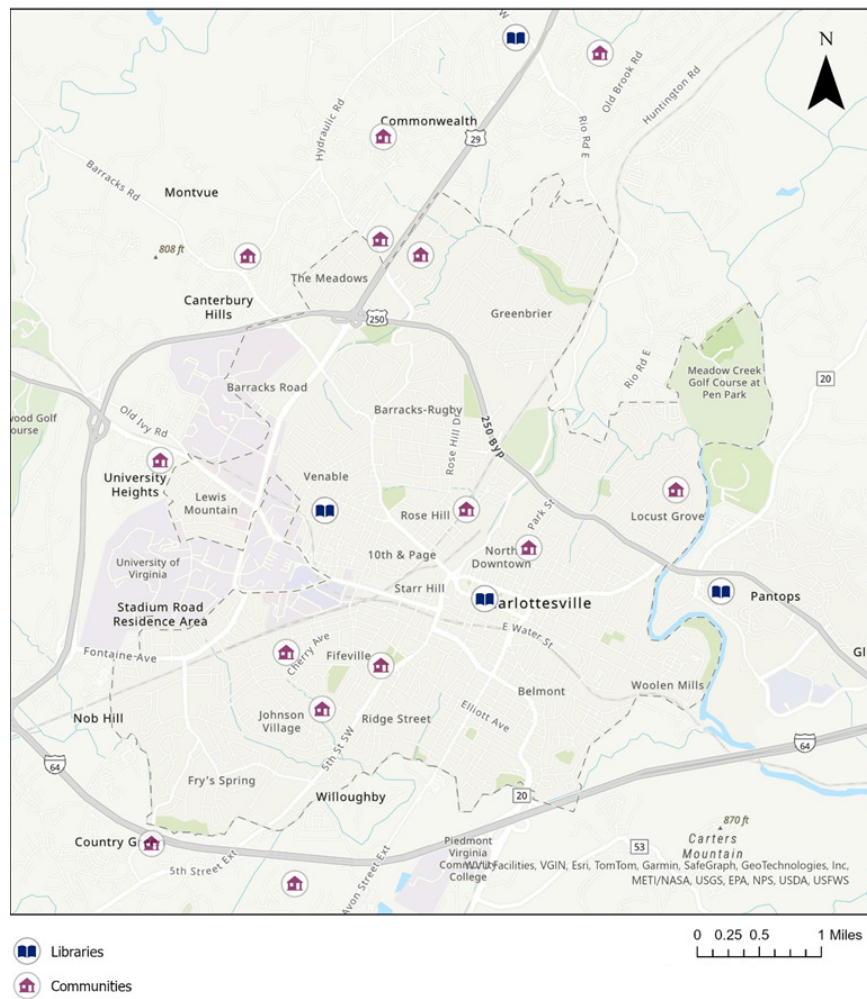


Figure 5: Map of Cville Tulip Communities and Public Libraries in the Charlottesville area

Public Parks

AMENITY SELECTION

For our list, we included general public parks in Charlottesville. Our list does not include privately-held, access-restricted, or specialty green spaces, such as the Meadowcreek Golf Course or Disc Golf Course. Nor does it include the parks and athletic facilities on the campus of the University of Virginia, for example the Park at North Grounds. We limited our selection of parks to those whose intended use is free to a general public.

RESULTS

From **Figure 6**, we can see that the majority of public parks are on the eastern side of Charlottesville. This is perhaps because the University of Virginia sprawls on the western half. Participant residential neighborhoods on this western half, especially those at the north and south ends of the western half, are very distant from any public parks, contributing to their isolation.

Public Parks	Address	Zip Code
Greenbrier Park	1900 Greenbrier Dr.	22901-22915
Greenleaf Park	1400 Greenleaf ark	22903
Washington Park	1001 Preston Ave.	22903
Forest Hills Park	1022 Forest Hills Ave.	22903
Tonsler Park	500 Cherry Ave.	22903
Belmont Park	725 Stonehenge Ave.	22902
Quarry Park	420 Quarry Rd.	22902
Rives Park	925 Rives St.	22902
Riverview Park	1909 Chesapeake St.	22902
Meade Park	300 Meade Ave.	22902
Northeast Park	1001 Sheridan Ave.	22901-24023
Pen Park	1300 Pen Park Rd.	22901
McIntire Park	375 US-250 Byp.	22901

Table 6: Table of public park addresses found in Figure 6

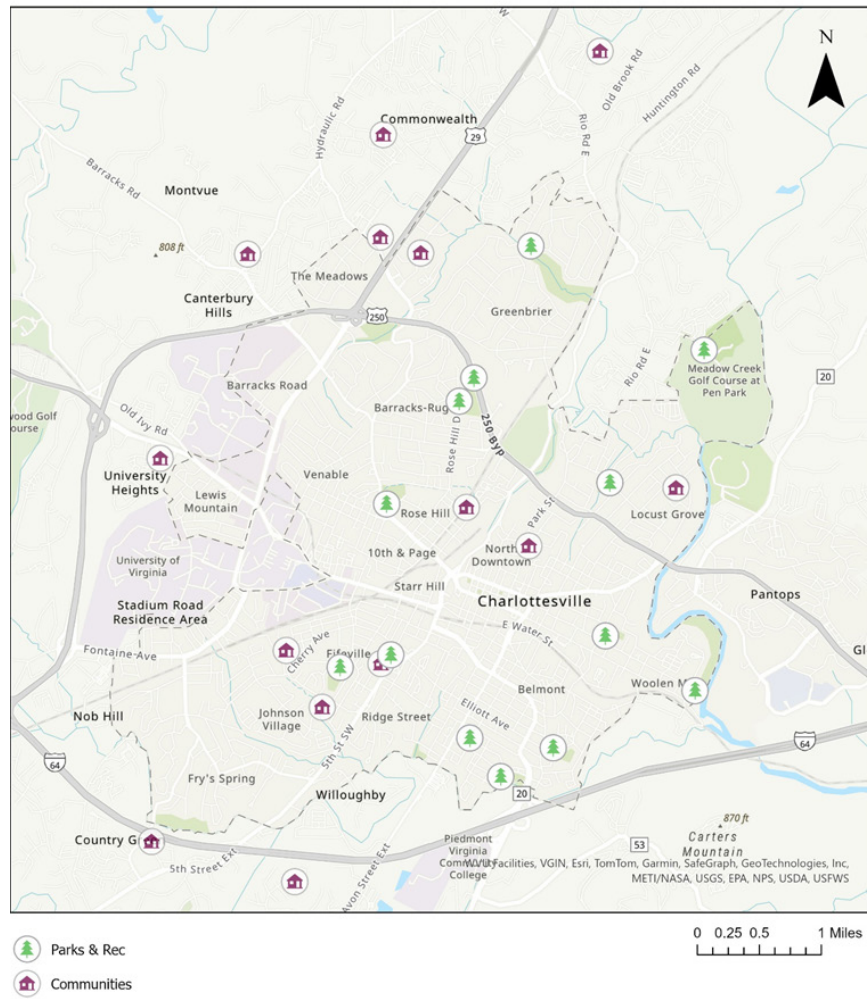


Figure 6: Map of Cville Tulip Communities and Public Parks in the Charlottesville area

Findings and Limitations

Across our five amenities categories, we saw that few of the participant residential neighborhoods are within a convenient walking distance of any of these public amenities. While residents near the Starr Hill and Downtown areas enjoy closer proximities to amenities in various categories, neighborhoods such as Fifeville in central Charlottesville lack convenient access to many categories of amenities; those in northern Charlottesville are isolated from amenities in all five of our selected categories. These maps highlight the diffuse development of vital public and everyday spaces across Charlottesville and the inconvenient placement of refugee families in residential neighborhoods, some of which are distant from places that provide for everyday needs. This diffusion exacerbates the need for comprehensive pedestrian walkability and public transit service in Charlottesville. Though many neighborhoods are within driving distance of amenities, the high barriers of entry to owning and operating a personal automobile at convenience (financial barriers, license barriers, and availability barriers presented by shared use of a vehicle) as well as the inconveniences and barriers to use of public transit (insufficient pedestrian infrastructure, long wait times, multiple transfers, navigating bus routes) emphasize the need for an overhaul in both transportation network and land use throughout Charlottesville, so that those without automobile access can still regularly get to the places they want and need to go. Alternatively, Afghan refugees could be placed in neighborhoods that are much closer to public amenities. Rather than being pushed towards the outskirts of the western portion of the city, perhaps refugee families could be placed more centrally in the downtown area of Charlottesville. This would bring them closer to many of these public amenities.

Some limitations of this part of our analysis result from the amenity selections we made for each of the categories. As these are not necessarily comprehensive inventories, Cville Tulip participants may actually have local options that we were not aware of, or assumptions leading to our exclusion of certain amenities may have resulted in a blind spot for us.

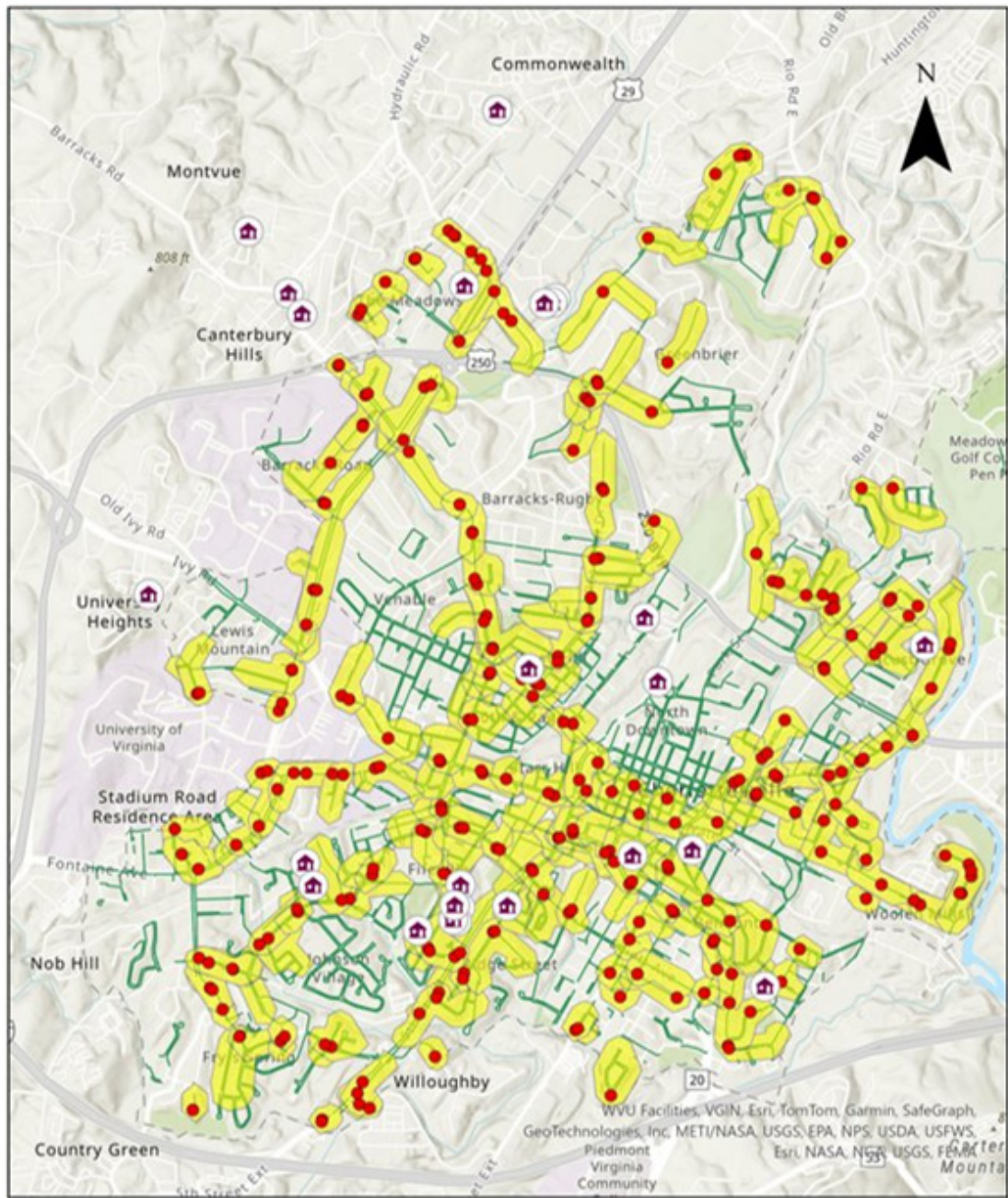
Other limitations are related to the nature of proximity analysis. Because it is based purely on eye-test distances and lacks insights from network analysis to see which destinations are well-connected to participant residential neighborhoods through pedestrian infrastructure or bus routes, we cannot make strong judgments about overall access at this point; only that certain neighborhoods are likely to experience significant travel times. We will address this limitation in the following section's network analysis.





Figure 7: Charlottesville Area Transit (CAT) Bus Routes System Map

Transit Accessibility Analysis: 5-Minute Walks to Bus Stops

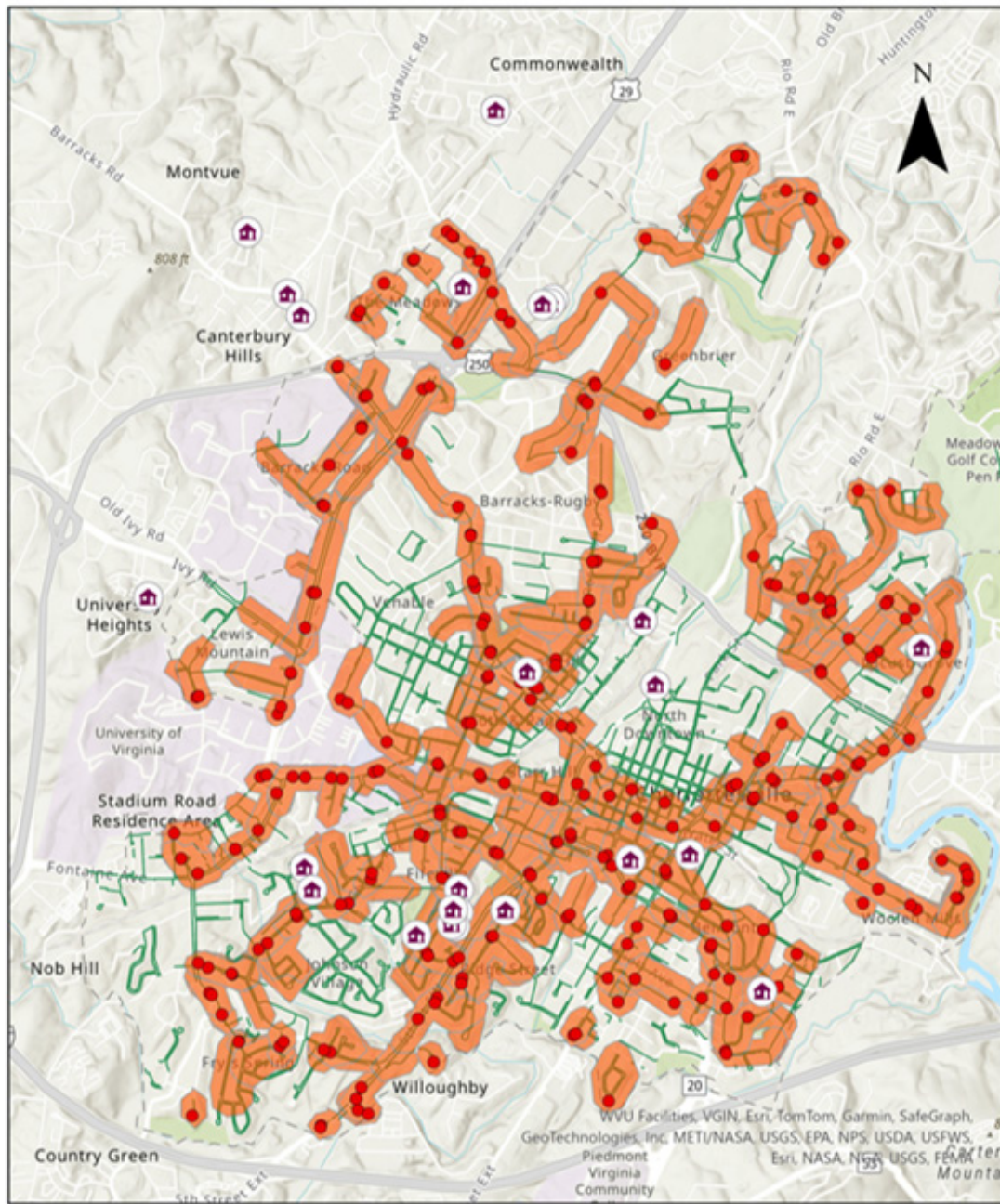


- Legend**
- Bus Stop
 - 🏠 Address
 - Sidewalk
 - 5mins Walk Buffer

0 0.25 0.5 1 Miles

Data provided by City of Charlottesville & Cville Tulips

Figure 8: Charlottesville Area Transit (CAT) Bus Routes System Map



- Legend**
- Bus Stop
 - 🏠 Address
 - Sidewalk
 - 10mins Walk Buffer

Data provided by City of Charlottesville & Cville Tulips

Figure 9: Charlottesville Area Transit (CAT) Bus Routes System Map

Bus Network Analysis

To assess the accessibility of public transportation for the refugee community in Charlottesville, we conducted a network analysis in ArcGIS, estimating the areas which are within a 5 and 10-minute walk time of bus stops. To do this, we needed spatialized data locating residential neighborhoods of Cville Tulip participants, bus stops, and sidewalk networks. Cville Tulips provided us with the locations of residential neighborhoods of refugees requiring transportation, which we imported into ArcGIS. Sidewalk networks were imported into ArcGIS from the City of Charlottesville Open Data Portal. The bus stops used in this analysis are those which are a part of Charlottesville Area Transit (CAT) bus service, which we also imported from the City of Charlottesville Open Data Portal.

We did not include bus stops on routes run by other transit service providers. In particular, we did not consider routes and bus stops run by the UVA University Transit Service (UTS) as part of our analysis. UVA UTS route service changes depending on the day of the week and whether school is in session. It may also change for events, and weekend, holiday, and summer service differs significantly, or is nonexistent. In comparison, CAT service is much more consistent and predictable. CAT provides routes through most of the commercial centers in Charlottesville. Shared stops facilitating opportunities for route transfers are concentrated in the downtown area of central Charlottesville, though there are a few shared stops in other areas as well. Coverage to areas that are mostly residential—for example, in the northeastern portion of the city—is significantly more limited, with fewer routes, stops, and opportunities for transfer. Detailed bus routes are illustrated in **Figure 7 (page 26)**.

To provide a more accurate representation of how people experience and interact with space, we calculate walking times based on an average speed of 3 miles per hour (mph). The formula we used to convert sidewalk lengths to walking times in minutes is

$$\text{Walking Time} = (D / 3) * 60$$

where D is the distance from a bus stop (miles), 3 is the walking speed in miles per hour, and 60 is the number of minutes in an hour.

Using this method, two maps were produced. **Figures 8 and 9 (pages 27-28)** depict areas within 5-minute and 10-minute walking distances to bus stops respectively.

The network analysis shows that neighborhoods in central and southeastern Charlottesville—including those near 10th & Page, Downtown, and Belmont—enjoy good accessibility to bus stops. In contrast, the western and northern sectors, including North Downtown and residential areas north of US 250—like Knollwood and Commonwealth, exhibit significant transit deficiencies.

Upon further inspection of the maps, only 44% of the Cville Tulips participant addresses are within a 10-minute walk from a bus stop (Figure 10), with even fewer living within a 5-minute walk from a bus stop. This perhaps is not immediately apparent from the map, but home icons are large (in part to hide the exact locations of residences). Many lie just outside of the 10-minute walking distance radius. Additionally, a notable spatial overlap was observed between areas lacking bus stop accessibility and neighborhoods with high concentrations of refugees, particularly in Commonwealth and Blue Ridge Commons Neighborhood. This correlation highlights significant opportunities and underscores the urgency to expand the service area and introduce more diverse transportation modes to enhance mobility for refugees.

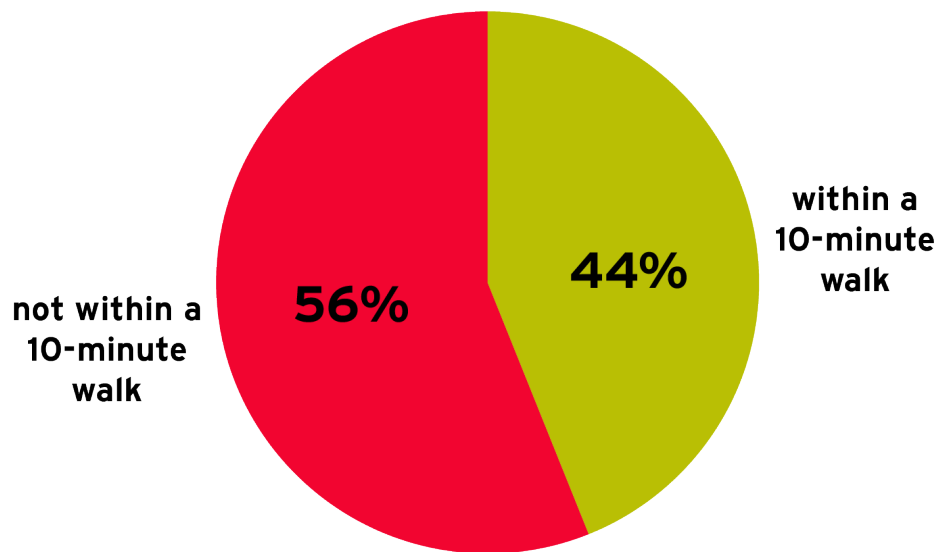


Figure 10: Proportion of Cville Tulips residences within a 10-minute walking distance of CAT bus stops

One notable limitation of this analysis pertains to the dataset used, specifically the sidewalk shapefile provided by the City of Charlottesville. Post-analysis, it was discovered that this dataset did not include more recent updates on some existing sidewalks within the city limits. We believe that this does not have significant impact on the conclusions drawn from this analysis: in the Transit Deficiencies Map made by the Charlottesville/Albemarle Metropolitan Planning Organization for the 2040 Long Range Transportation Plan, they also identified Commonwealth and Blue Ridge Commons Neighborhood as public transit-deficient areas. These two areas are some of the main residential clusters of Cville Tulips participants. Still, collaborations with local government bodies to ensure access to real-time infrastructure updates would enhance the reliability of similar studies moving forward.

From our network analysis, we believe the accessibility of bus stops for Cville Tulips participants is generally insufficient. However, this is again a cursory overview, meant primarily to identify transit-deficient areas, and not meant to be an exact estimation of travel times. After all, it is dependent on the assumption that sidewalk networks exist as depicted and that a pedestrian walks at an average speed of 3 mph. Future analysis could focus on a more detailed examination of the transit

routes from refugee residences to essential destinations in Charlottesville, such as grocery stores, schools, and healthcare facilities, tying our first two analyses together. This will specifically assess whether these routes allow for direct travel or if they necessitate transfers, providing a clearer picture of total travel times needed and thus how convenient public transit actually is for refugees. By mapping out the specific transit connections and their efficiency, this study aims to provide a granular understanding of the mobility challenges faced by refugees, which can inform targeted improvements in public transportation accessibility.

We want to acknowledge that despite having a lower barrier of entry than owning and operating a personal automobile, bus transit use does have barriers of access and entry built into it. Although CAT bus routes provide a transportation option for those who either choose not to drive or do not own a car, riders must be comfortable navigating the logistics of bus travel. Bus travel requires the ability to rely on bus timetables or interpret the live map on the CAT smartphone app; the ability to navigate bus line transfers; and have the time to wait for the bus (or multiple buses, depending on the number of bus transfers required). For many, living in a car-dependent city poses unnecessary challenges, including a lack of pedestrian infrastructure to get to bus stops. Ideally, cities should offer walkability and convenient access to public transportation. For Afghan residents partnered with Cville Tulips, the lack of accessible transportation hinders their ability to find work, buy food for their families, and visit health centers regularly. This furthers separation within the community and isolates populations in the city. In our next section, we will assess the pedestrian network and walkability in Charlottesville, situated in the context of the surrounding Albemarle County.



Walkability Comparisons

In the previous section, we took a look at a network analysis of Cville Tulip resident neighborhoods examining walkable access to bus stop access. In this section, we will use two indicators from the US EPA's Smart Location Database (SLD) to examine which areas in the city of Charlottesville and its surrounding areas in Albemarle County contain pathways marked for access to pedestrians; and which areas are pedestrian-friendly by examining their scoring in the National Walkability Index (NWI).

Walking, like public bus transit, is a mode of transportation with a low barrier of entry for individuals. Unlike bus transit, it does not require the ability to navigate timetables, routes, and maps. Unlike car travel, it does not require access and ability to operate a personal vehicle. From a structural perspective, it is also less expensive for governments to implement pedestrian-oriented networks. They can take up less space than roads meant for cars and buses, requiring less area to be cleared and graded and they do not require the costs of operating a fleet of buses. For recently-arrived Afghan refugee women and children, many of whom are arriving into the United States without the money necessary to buy a car, the ability to drive, or with the language necessary to navigate a bus network comfortably, it is vitally important that they have the option to walk where they need to go.

Pedestrian Network Density

First, we'll take a look at where pedestrian infrastructures exist in Charlottesville and surrounding Albemarle County. The Pedestrian Network Density metric in the EPA SLD helps us to get an idea of which areas (at the census block group level) we can expect to have good coverage by pedestrian infrastructure.

The EPA SLD defines pedestrian-oriented network links as:

- Any link having a speed category of 6 (between 21 and 30 mph) where car travel is permitted in both directions
- Any link having a speed category of 7 or higher (less than 21 mph).
- Any link having a speed category of 6 (between 21 and 30 mph)
- Any pathway or trail on which automobile travel is not permitted (speed category 8).
- For all of the above, pedestrians must be permitted on the link
- For all of the above, controlled access highways, tollways, highway ramps, ferries, parking lot roads, tunnels, and facilities having four or more lanes of travel in a single direction (implied eight lanes bi-directional) are excluded

From this classification, we can see that pedestrian-oriented network links are not purely limited to sidewalks and trails. In particular, roads that have speed limits of 30mph and below are considered 'pedestrian-oriented', so long as they do not explicitly restrict access to pedestrians. The pedestrian network density is then calculated by summing the length in miles of all links classified as 'pedestrian-

oriented' within the spatial boundaries of a census block group, then dividing by the area of the census block group in square miles. This metric gives us some sense of how well-connected a census-block group is by pedestrian-oriented network links. The reason the greater Albemarle County area has been included in these maps is to better situate the relative pedestrian context surrounding Charlottesville. Because pedestrian road network densities are so low in the surrounding Albemarle County, it's easy to imagine the region as one that is best connected by personal automobiles and thus expect Charlottesville to primarily cater to car travel. Were residential clusters more dense in rural contexts, we would likely not see such low-density large census block groups. Then, we might expect bus systems to exist, helping to connect Albemarle County to Charlottesville, leading to a priority for pedestrian infrastructure to connect people from transit stations to their final destinations.

In **Figure 11**, we can see that census block groups in and around the City of Charlottesville have higher pedestrian network densities than the greater Albemarle County area. The University of Virginia is represented in the census block group in bright yellow and the two block groups immediately to the left of it that lie outside of the City of Charlottesville boundary. Those block groups have some of the highest pedestrian-oriented network densities in the entire region; in the accompanying histogram (**Figure 11**), we can see that those block groups represent maximum outliers within this set of census block groups. The mean pedestrian-network density across Albemarle County and the City of Charlottesville is 10.56, meaning that for every square mile of area in a census block group, it has about 10 and a half miles of pedestrian-oriented network links.

This analysis also supports findings from the previous two analyses. Many Cville Tulip participant residential neighborhoods are located in census block groups with lower pedestrian-network densities. Particularly egregious is the residential cluster located in the Fifeville area, between the University of Virginia and Downtown area block groups. Those areas are bright yellow and orange respectively, indicating a higher density of pedestrian infrastructure; the Fifeville area is colored purple, despite being directly adjacent to these relatively well-connected block groups. We also see again that participant's residential areas in the north of Charlottesville have lower pedestrian network densities than the central areas of Charlottesville, contributing to their isolation. Thus, not only are these areas isolated by a lack of access to amenities and bus stops, they are also isolated by relative inability to walk around in their immediate vicinity, connecting them to other areas of the city.

These observations are synthesized in the EPA SLD's National Walkability Index, a metric that we will further explore in the following section.



Walkability Comparison: Pedestrian Network Density - Facility Miles per Square Mile

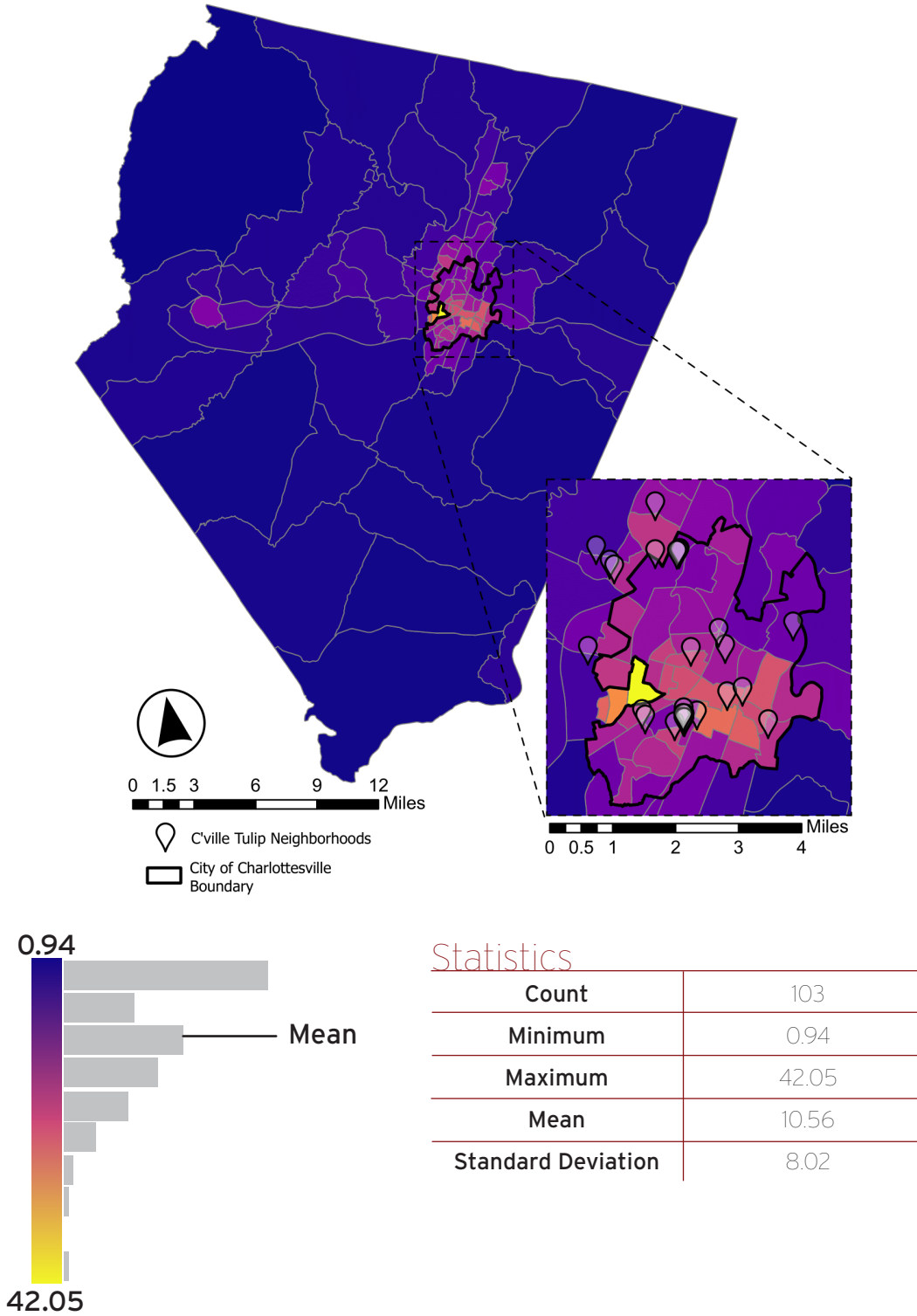


Figure 11: Thematic map (above) and histogram (below) of census block groups in Albemarle County and City of Charlottesville - Network density in terms of facility miles of pedestrian-oriented links per square mile from EPA SLD

Walkability Comparison: National Walkability Index (NWI)

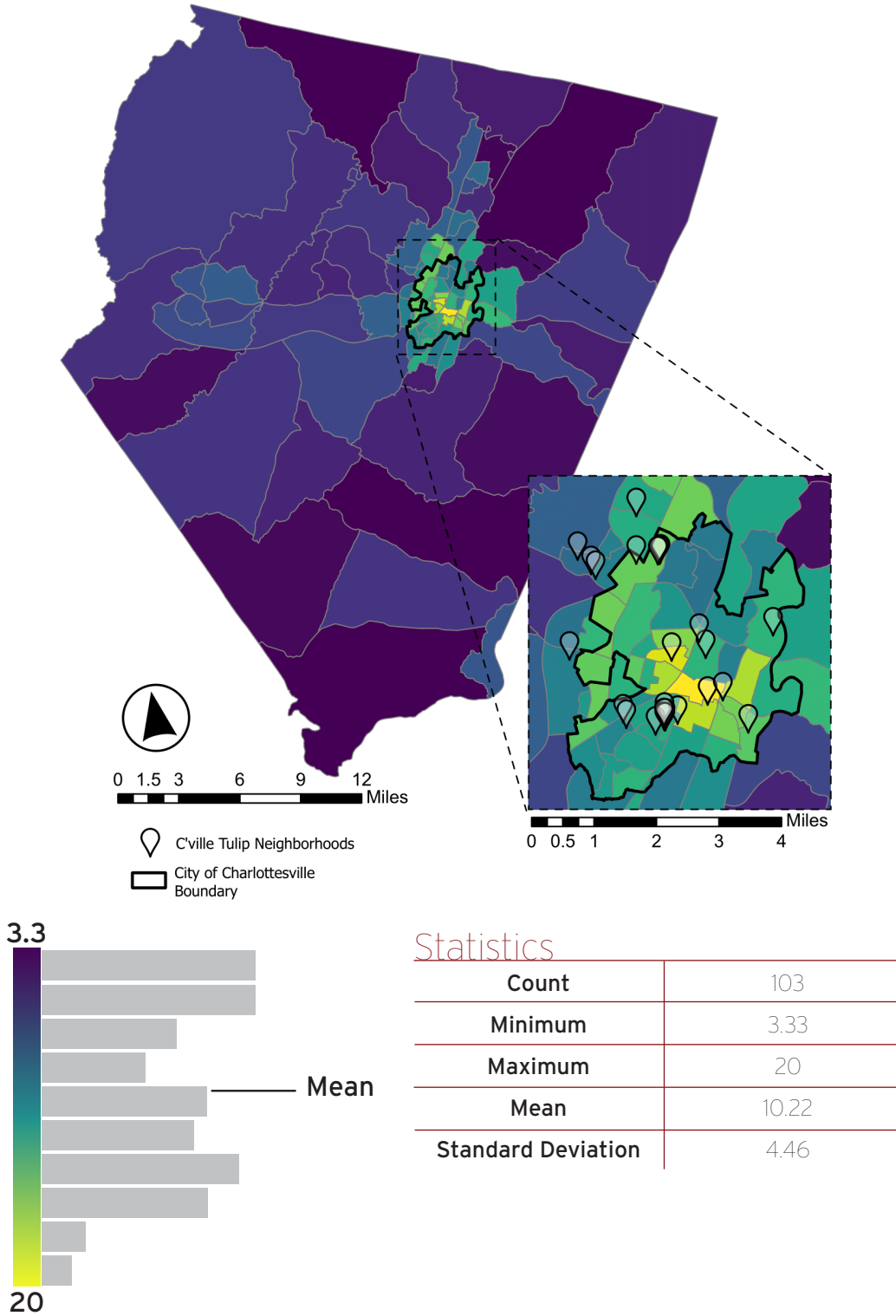


Figure 12: Thematic map (above) and histogram (below) of census block groups in Albemarle County and City of Charlottesville - National Walkability Index (NWI)

National Walkability Index (NWI)

The National Walkability Index (NWI) was created by the EPA SLD with the intention “to help address a growing demand for data products that enable users to consistently compare multiple places based on their suitability for walking as a means of travel”. From this metric we can see how walkability scores compare between census block groups within the region, as well as in comparison to other regions in the country.

The NWI is calculated by combining four measures from the SLD:

1. employment and household entropy
2. static eight-tier employment entropy
3. street intersection density (weighted, auto-oriented intersections eliminated)
4. distance to the nearest transit stop.

These four measures were chosen because they “represent different characteristics of the built environment that are known to be supportive of walking, including a range of diversity in land uses, street connectivity and access to public transit. In this case, employment and household entropy and the static eight-tier employment entropy were both used as proxies for land use mix.”

We’ll clarify some of the language used by the EPA SLD. Another way to interpret “employment and household entropy” is as the mix of residential and commercial areas with an area boundary. This is a proxy for proximity and associated convenience: can destinations be expected within a short distance of homes?

“Static eight-tier employment entropy” refers to the classification of employment types into eight categories: retail, office, service, industrial, entertainment, education, healthcare, and public administration. This is a proxy for land use types: how many different types of destinations can be expected within an area? Together, these first two criteria reflect some of the considerations we tried to capture with our amenities proximity analysis.

Street intersection density is a proxy for how well-connected road networks are. Distance to the nearest transit stop is another metric related to connectivity, tying pedestrian networks to transit networks, such as bus routes. Together, these latter two criteria reflect some of the considerations we tried to capture with our transit accessibility network analysis.

A ranked score for each of the components is calculated by placing block groups into 4 quantiles, where each group has 25% of CBGs. Based on these component scores, they were then assigned a rank between 1 and 20 based on their value within the quantiles. Scores are categorized into the following basic levels:

- Least walkable: scores between 1 and 5.75
- Below-average walkable: scores between 5.76 and 10.5
- Above-average walkable: scores between 10.51 and 15.25
- Most walkable: scores between 15.26 and 20

We can see in its constituent criteria that the NWI uses the idea of walkability to synthesize considerations of our earlier analyses. The spatialized NWI data for Charlottesville and Albemarle County can be seen in [Figure 12](#). Taking a closer look at the histogram ([Figure 12](#)), we can see that the mean walkability score for Charlottesville and Albemarle County is 10.22. This falls into the range of “Below-average Walkable”. However, from [Figure 12](#), we see that the census block groups concentrated in Charlottesville tend to be on the more walkable end of the scale. Few CBGs are least walkable. On the other hand, we see that the block groups in surrounding Albemarle County are all less walkable, bringing down the regional average.

The overall visualization gives a similar impression to that of the pedestrian network density map ([Figure 11](#)), with one major discrepancy. We previously saw that the census block groups representing the University of Virginia had some of the densest coverage by pedestrian networks; however, when we look at the overall walkability, it scores lower than the Downtown area. This is likely due to the lack of mixed-land use on campus: the employment and residential mix is low. According to this map, Downtown Charlottesville is the most walkable area in the entire Charlottesville and greater Albemarle County area.

A limitation of the NWI is that it is made up of a bunch of proxy criteria: we don't actually know how well-connected these areas might be from this metric alone. However, in conjunction with the other analyses we performed, we feel that the results of looking at this index support our earlier findings.

The NWI corroborates the results from our prior quantitative analyses. Cville Tulips participant residential neighborhoods are located in census block groups with low walkability scores. The neighborhoods in Fifeville and northern Charlottesville all have walkability scores on the below-average end of the spectrum. We saw in both the proximity analysis and accessibility analysis that these same areas lack amenities and access to bus stops. Very few participant residences are in the most walkable areas, the ones that are best connected to and by transit, and the ones closest to a variety of public amenities. Our analyses reinforce one another, along with the idea that residential placement contributes to physical isolation, resultant social isolation, and a lack of agency for Cville Tulips participants.



Overall Takeaways

We'll return to our research question:

“What actions would maximize participants’ agency in terms of access to healthcare and overall mobility in Charlottesville?”

The results of our qualitative and quantitative analyses demonstrated that there are two levels of factors affecting Cville Tulips participant agency: factors of agency at an individual level and factors of agency at a structural level. By factors at an individual level, we are referring to those related to an individual’s ability to navigate within their environment. By factors at a structural level, we are referring to the ways in which an environment facilitates ease of navigation through it by individuals.

Our qualitative analysis of the focus group discussion revealed that agency in terms of access to healthcare is mostly related to Cville Tulips participants on an individual level. Our focus group identified four major thematic barriers related to Cville Tulips participant agency and healthcare: Mental Health, Cultural Barriers, Language Barriers, and Transportation Barriers. All of these are related to gaps in understanding and communication experienced by Cville Tulips participants, lowering their agency and individual ability to comfortably and confidently navigate within the American healthcare system. We recommend addressing these barriers of communication and understanding through the creation and distribution of appropriate educational materials and resources. These resources should be distributed to relevant stakeholders, such as healthcare practitioners and educators, who are at the forefront of interfacing with Cville Tulips participants.

Some of the gaps identified in the focus group are also related to factors of agency on a structural level. The isolation experienced by Cville Tulips participants often contributes to their poor mental health. It is not only related to barriers of communication and understanding, but, as our quantitative analyses showed again and again, is also related to the spatial placement of their residences in some of the least-connected areas in or around Charlottesville. This revealed a structural dimension to how physical isolation takes away from Cville Tulip participant agency, caused by a lack of public transit service, pedestrian infrastructure, and poor spatial distribution of public amenities to these residential areas. We hope that through our maps, we can raise awareness about these existing accessibility barriers to relevant stakeholders—including local policymakers, planners, IRC agents who help place refugees, university officials, transit agencies, and land developers—so that local land use and transportation infrastructure better support the needs of Cville Tulips participants.

Our final takeaway is that individual agency and structural agency go hand-in-hand. Addressing the way our built environment supports people in getting where they want to go not only improves the well-being of Afghan refugee women and children, but will help make Charlottesville and the surrounding communities stronger and better connected for everyone. Still, with barriers of communication or understanding, even the most well-built environment will inhibit a person from thriving together in their environment and community. Forming connections with others wherever possible, both socially and in the built environment, gives everyone that is part of these connections more agency to live life to the fullest. Let the tulips bloom!



Appendix A: Focus Group Resource Compilation List

Category	Resource	Details	Citation / Link
Local Level	Women's Initiative	The Women's Initiative is a local non-profit that offers mental health counseling, education, and social support for women, regardless of ability to pay.	"The Women's Initiative." The Women's Initiative, https://thewomensinitiative.org/ . Accessed 20 Apr. 2024.
	ACPS Map of Afghan students by home language	These maps show the distribution of students in Albemarle County who speak either Dari or Pashto. This resource is helpful for determining where interpreters are needed when conducting community engagement.	See end of table (page 42). Maps provided by Lauren MacLean.
	<i>Essentials of Family Medicine curriculum and workshops</i>	This training program is offered to UVA Family Medicine residents and contains sections focused on refugee healthcare approaches. The IFMC will be publishing some of this curriculum soon, so keep a look out.	UVA School of Medicine. (2022, December 6). Curriculum Highlights. Family Medicine. Retrieved from https://med.virginia.edu/family-medicine/education/family-medicine-residency-program/meet-our-residents/residency-curriculum/curriculum-highlights/
	Community Dental Center	The Community Dental Center is a non-profit, full-service pediatric dental center serving patients aged 1-20 years old with Medicaid or who are uninsured. Appointment availability is known to be limited.	Community Dental Center. (2022, March 5). Retrieved from https://cdcva.org/

<i>Local Level</i>	MicroCAT shuttle service	This is an on demand free shuttle service offered throughout Albemarle County. While it does not service Charlottesville, Afghan families living outside of city limits may benefit from this resource.	Charlottesville Free Clinic. (n.d.). Home. Retrieved from https://www.cvillefreeclinic.org/
<i>State / National Level</i>	CDC Refugee and Immigrant Health Page	Provides step by step screening guidance for a variety of health concerns.	MicroCAT On-Demand Rideshare in Albemarle County. (n.d.). Get around Albemarle County Fare Free with Microcat. Retrieved from https://city.ridewithvia.com/microcat
	Medicaid Taxi service	This service is offered to qualifying individuals with Medicaid and provides free transportation to medical appointments. The main issue that has arisen with this service regarding refugees is the language barrier. While it is an important resource, we need more translators to help schedule these rides.	Centers for Disease Control and Prevention. (2022, June 16). Immigrant and Refugee Health. Retrieved from https://www.cdc.gov/immigrantrefugeehealth/index.html
	Match & Grant Programs	The Office of Refugee Resettlement assists refugees as they integrate into American society and attain self-sufficiency. Through a variety of programs, ORR provides new arrivals with short-term cash and medical assistance, case management services, English language classes, and job readiness and employment services. One such program is the Voluntary Agencies Matching Grant (MG) Program. Through this program, ORR awards grants to resettlement agencies to help eligible families develop life skills and find employment.	U.S. Department of Health & Human Services, Administration for Children and Families. (n.d.). Voluntary Agencies Matching Grant Program. Retrieved from https://www.acf.hhs.gov/orr/programs/refugees/matching-grants



State /
National
Level

Cornerstone Counseling

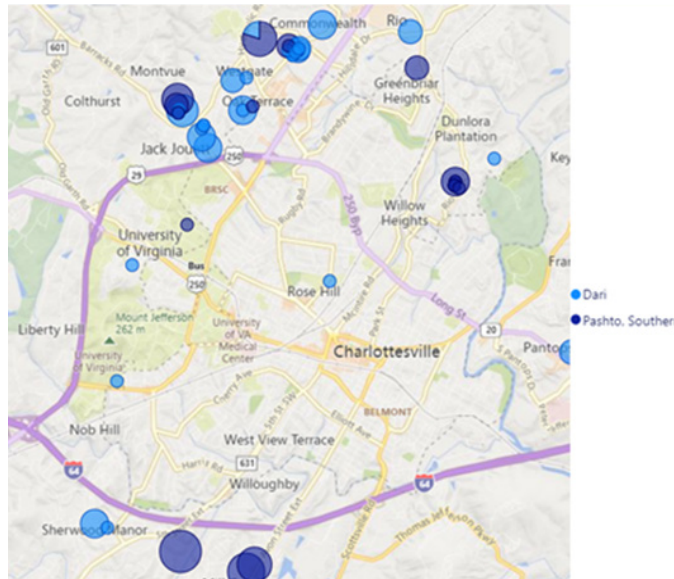
Partnered with the IRC to provide mental health intervention services in multiple languages across the US.

Cornerstone Counseling. (n.d.). Refugee Services. Retrieved from <https://www.cornercounseling.com/refugee-services.html>

NRC-RIM—National Resource Center for Refugees, Immigrants, and Migrants

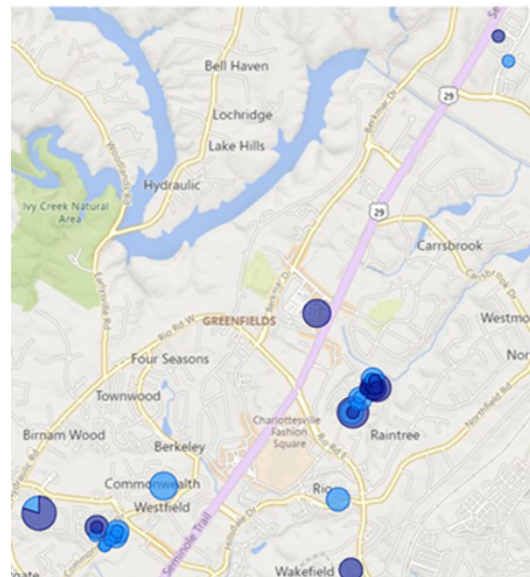
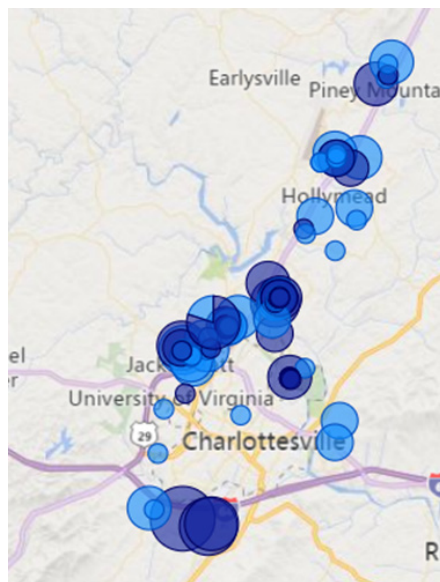
Group that focuses on the public health needs of refugees. Their website has numerous guidebooks and toolkits specifically tailored to working with the Afghan refugee population.

National Resource Center for Refugees, Immigrants, and Migrants (NRC-RIM). (n.d.). Afghan Health Toolkits. Retrieved from <https://nrcrim.org/afghans/afghan-health-toolkits>



ACPS Map of Afghan students by home language

Provided by Lauren MacLean



Appendix B: Visual Educational Material Recommendations

Category	Educational Material	Recommendation Details
Road Safety & Driver Information	DMV Handbook	A comprehensive guide to the DMV curriculum tailored to assist refugee students pass their first drivers' exam. Students in refugee households have reported taking the exam multiple times before passing. This guide would help students overcome common challenges with the driver's education curriculum.
	U.S. Street Safety	One-page fact sheet explaining common US street safety for pedestrians that may differ from refugees' home country. Include audio version.
	Charlottesville / Albemarle Bus Guide	Info-graphic map of public bus systems with landmarks, common destinations, and navigation without relying solely on written instructions.
	Jaunt Guide	Info-graphic map of public bus systems with landmarks, common destinations, and navigation without relying solely on written instructions.
	Lyft Gender Preference Settings	One-page app guide to explain how to set a gender preference for Lyft drivers as alternative mode of transportation. Include audio version. https://help.lyft.com/hc/en-us/rider/articles/9030680293
	Appropriate use of Emergency Room vs Urgent Care vs Primary Care	One to two-page fact sheet explaining cases when each type of medical care is appropriate or not appropriate. Misuse of care such as the ER can overwhelm emergency resources or result in missed school or work. Clear information and examples could help patients reach the most beneficial healthcare. Include audio version.



Category Educational Material Recommendation Details

Healthcare Information	When should my child miss school due to illness?	<p>A one-page fact sheet explaining when a child and/or their siblings need to miss school due to illness. This information could clarify post-COVID procedures, when other household members may be contagious, notifying the school, and helpful procedures for at home care.</p> <p>Include audio version.</p>
	Why doesn't my doctor give me medicine after each visit?	<p>One-page fact sheet explaining differences between US and Afghan medical system and why patients might not leave all sick appointments with a medication.</p> <p>Include audio version.</p>
	Working with Afghan Refugees in Healthcare Guide Sheet	<p>One to two-page fact sheet containing recommendations for healthcare professionals from focus group, common barriers to be aware of, and additional resources</p>
	What to expect at your first appointment	<p>Have a one-page fact sheet walking new patients through their initial appointments for vaccinations/ immunization, gynecology, yearly primary care, pediatric care, dental care, eye exams... etc.</p> <p>Include audio version.</p>

Appendix C: Focus Group Code Dictionary - Definitions Related to Refugee Healthcare

Accessibility

Merriam-Webster

- 1: capable of being reached, also: being within reach, easy to speak to or deal with
- 2: capable of being used or seen: available¹

U.S. Department of Education

““Accessible” means a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use. The person with a disability must be able to obtain the information as fully, equally and independently as a person without a disability. Although this might not result in identical ease of use compared to that of persons without disabilities, it still must ensure equal opportunity to the educational benefits and opportunities afforded by the technology and equal treatment in the use of such technology.”²

Our definition, in this context

The degree to which healthcare systems, services, and infrastructure are available and usable by individuals, regardless of physical ability, socioeconomic status, age, or other factors. It includes both the removal of barriers that may prevent people from accessing healthcare options. It may refer to physical, financial, geographical, informational, cultural, linguistic, and/or safety hurdles to healthcare and transportation to access care.

Advocacy

Merriam Webster

- 1: the act or process of supporting a cause or proposal: the act or process of advocating something³

Tulane University School of Public Health and Tropical Medicine

“Healthcare advocates give patients and their families direct, customized assistance in navigating the healthcare system. A healthcare advocate’s role entails: Helping patients access health care, educating patients so they can make well-informed healthcare decisions, guiding patients through their medical care, insurance questions, and administrative and legal tasks.”⁴

Our definition, in this context

In the focus group, many of the participants work as advocates for the Cville Tulips to receive better care and express wanting their patients to receive quality care across different practices of healthcare.

Agency

Merriam-Webster

2: the capacity, condition, or state of acting or of exerting power: operation
3: a person or thing through which power is exerted or an end is achieved: instrumentality⁵

Stanford Dictionary of Philosophy

"In very general terms, an agent is a being with the capacity to act, and 'agency' denotes the exercise or manifestation of this capacity."⁶

What Is the Sense of Agency and Why Does it Matter?

"Sense of agency refers to the feeling of control over actions and their consequences."⁷

Our definition, in this context

An individual's ability to be informed and make choices about their own health. It encompasses the freedom to decide how, when, and where to access care based on personal preferences, needs, and circumstances. This includes the ability to actively participate in their care plans.

Cultural Barrier

Study Smarter

"Cultural barriers prevent people from different cultures from effectively communicating and working with each other. Cultural barriers can be caused by differences in languages, beliefs, or values."⁸

Our definition, in this context

A cultural barrier in healthcare refers to challenges or obstacles arising from differences in cultural beliefs, values, practices, and communication styles between healthcare providers and patients. In this care, a cultural barrier may hinder effective healthcare delivery, access to quality care, or result in confusion, misunderstandings, and miscommunications between the healthcare providers and patients.

Education Barrier

Our definition, in this context

A student's access to school may be interrupted due to lack of access to transportation, preventing them from physically reaching the school premises, or being frequently pulled out for medical appointments, which can disrupt their regular attendance.

Example of System Flaw

Our definition, in this context

An instance, policy, or action with an unfavorable outcome within the healthcare system. This can occur when patients encounter obstacles within the healthcare system that prevent them from accessing or receiving the most appropriate medical care. These obstacles can be systemic, structural, or related to communication breakdowns between healthcare providers and patients.

Example of System Success

Our definition, in this context

An instance, policy, or action with a favorable outcome within the healthcare system. This can include healthcare that adapted to provide preventative, patient-oriented, accurate, and sensitive care despite the barriers faced by patients and healthcare workers.

Healthcare Barrier

LA Department of Healthcare

"Barriers to Health are factors that prevent an individual, population, and/or community from acquiring access to health services and/or achieving best health. Barriers to health are also recognized as systems (i.e. structural determinants) that offer health care and services, which are shaped by a wider set of forces (i.e. economics, social policies/social norms, politics, etc.)."⁹

Our definition, in this context

A healthcare barrier refers to any obstacle or challenge that prevents individuals or communities from accessing or receiving adequate healthcare services. These barriers can be structural, financial, cultural, geographical, or related to individual circumstances, and they can significantly impede people's ability to seek and receive necessary medical care.

Housing Barrier

Our definition, in this context

Housing as a barrier refers to any instance that housing location, quality, and neighborhood impact refugees' mental and physical health or access to transportation, healthcare, school, and other needs. Access to healthcare facilities is often determined by proximity. Housing may have limited access to healthcare

facilities due to distance, lack of transportation, or inadequate infrastructure. These issues overlap with agency as refugees do not have much control over their initial placements or housing options. Additionally, the issue of housing location contributes to refugees' feelings of isolation, significantly impacting mental and physical health.

Isolation

Merriam-Webster

1: the state of being in a place or situation that is separate from others: the condition of being isolated¹⁰

Frontiers in Global Women's Health

"Key factors that may contribute to, or exacerbate social isolation and loneliness, include family separation, language barriers, past traumas, having a precarious immigration status, and unfamiliarity with the host country's culture. Compounded with multiple vulnerability factors and challenges, the effects of social isolation and loneliness may be even more detrimental for asylum seekers and refugees. Existing studies show that social isolation and a lack of support among migrant women are associated with stress, depression and postpartum depression. An absence of or a small social network has also been shown to contribute to low self-esteem and self-confidence, and a reduced sense of parental competence."¹¹

Our definition, in this context

Isolation amplifies the existing vulnerabilities and challenges faced by refugees, making it more difficult for them to access healthcare and impacts mental and physical health.

Language Barrier

Merriam-Webster

1: a barrier to communication between people who are unable to speak a common language.¹²

Our definition, in this context

A language barrier in a healthcare setting refers to the situation where a patient and a healthcare provider cannot effectively communicate with each other due to differences in language. This barrier prevents the accurate exchange of information essential for delivering high-quality healthcare services. As a result, patients may struggle to explain their symptoms, medical history, or concerns, while healthcare providers may find it challenging to convey diagnoses, treatment options, or instructions.

Pediatric Healthcare

American Academy of Pediatrics

“Pediatrics is the specialty of medical science concerned with the physical, mental, and social health of children from birth to young adulthood. Pediatric care encompasses a broad spectrum of health services ranging from preventive health care to the diagnosis and treatment of acute and chronic diseases. Pediatrics is a discipline that deals with biological, social, and environmental influences on the developing child and with the impact of disease and dysfunction on development.”¹³

Our definition, in this context

Health services, treatment, appointments, and experiences pertaining to children’s mental and physical health as well as the barriers to healthcare specific to children. This may include language and cultural barriers, limited health knowledge, age, and limited access to care.

Transportation Barrier

Merriam-Webster

TRANSPORTATION

- 1: an act, process, or instance of transporting or being transported
- 2: means of conveyance or travel from one place to another
- 3: public conveyance of passengers or goods especially as a commercial enterprise¹⁴

BARRIER

- 1: something material that blocks or is intended to block passage highway barriers a barrier contraceptive
- 2: natural formation or structure that prevents or hinders movement or action geographic barriers to species dissemination barrier beaches drugs that cross the placental barrier
- 3: something immaterial that impedes or separates: OBSTACLE¹⁵

American Hospital Association

“Transportation issues include lack of vehicle access, inadequate infrastructure, long distances and lengthy times to reach needed services, transportation costs and adverse policies that affect travel. Transportation challenges affect rural and urban communities.”¹⁶

Our definition, in this context

An individual’s difficulty or inability to access healthcare services due to limitations in transportation. Lack of reliable transportation can prevent patients from attending medical appointments, obtaining necessary medications, or accessing emergency care in a timely manner.

Women's Healthcare

National Library of Medicine

"Women's health refers to the branch of medicine that focuses on the treatment and diagnosis of diseases and conditions that affect a woman's physical and emotional well-being."¹⁷

Our definition, in this context

Health services, treatment, appointments, and experiences pertaining to women's mental and physical health as well as the barriers to healthcare specific to women.

HIERARCHY OF SYSTEM THAT EFFECTS AFGHAN REFUGEES

National Level

Our definition, in this context

This category indicates a barrier that occurs at the national or federal level of government. This could be mention of a policy, regulation, decision, or effect that happens on the national level and effects the lives of refugees living in Charlottesville and Albemarle. An example of this could be decisions made by the International Rescue Committee.

State Level

Our definition, in this context

This category indicates a barrier that occurs at the Virginia state government level. This could be mention of a policy, regulation, decision, or effect that happens on the state level and effects the lives of refugees living in Charlottesville and Albemarle.

Local Level

Our definition, in this context

This category indicates a barrier that occurs at the local county and city government level. This could be mention of a policy, regulation, decision, or effect that happens on the Albemarle County or Charlottesville city level and effects the lives of refugees living in Charlottesville and Albemarle.

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