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Applied Policy Project

# Telehealth Accessibility in Virginia



APPLIED POLICY PROJECT

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**Improving Telehealth Accessibility for Individuals with Limited English Proficiency in Virginia**

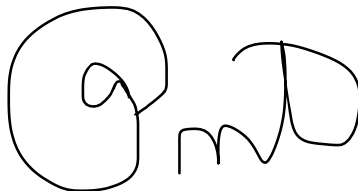
The following report was produced for the **Virginia Telehealth Network**, a small non-profit organization based out of Richmond that leverages its network of professionals to promote telehealth use across the Commonwealth by providing education, resources, and best practices to stakeholders in the field.

**DISCLAIMER**

The author conducted this study as part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgments and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other agency.

**HONOR PLEDGE**

On my honor, as a student, I have neither given nor received unauthorized aid on this assignment.



**UNIVERSITY of VIRGINIA**

FRANK BATTEN SCHOOL of  
LEADERSHIP and PUBLIC POLICY

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## VIRGINIA TELEHEALTH NETWORK

### MISSION STATEMENT

*"We devote our resources to advancing the adoption, implementation, and integration of telehealth and related technologies statewide and promote the coordination and delivery of care for all Virginians."*

### WHO IS THE VIRGINIA TELEHEALTH NETWORK?

The Virginia Telehealth Network is a non-profit organization located in Richmond, Virginia, dedicated to supporting and promoting the Commonwealth's telehealth expansion and delivery efforts. VTN seeks to provide education, resources, and best practices to telehealth stakeholders while advocating for safe, equitable, and effective delivery of telehealth services. It does so by developing and maintaining a strong network of telehealth providers that allow for the exploration and promotion of innovative programs that promote access to high-quality health care. They call on this network to expand the Commonwealth's telehealth delivery capabilities.

### WHAT IS THEIR IMPACT?

Throughout this process, I had the privilege of collaborating with and learning from **Mara Servaites**, *Executive Director*, & **Robin Cummings**, *Director of Special Projects*. With their guidance, I was able to explore equity-centered issues that impact the field of telehealth in Virginia. In the wake of the COVID-19 pandemic, telehealth usage exploded as it provided a safe and risk-free alternative to traditional, in-person healthcare services. This unique moment in time has opened the window of opportunity to construct and implement equity-centered policies to ensure that telehealth use is accessible and affordable as a healthcare delivery option. This is of particular importance for populations that are disproportionately underserved medically and are historically marginalized within the healthcare system at large.



## ACKNOWLEDGEMENTS & DEDICATION

### **TO MARA AND ROBIN (& THE VIRGINIA TELEHEALTH NETWORK),**

First and foremost, I would like to express my sincerest gratitude to Mara and Robin, as well as to the Virginia Telehealth Network (VTN). VTN is an inspiring organization whose equity-centered lens on telehealth service access for all in Virginia aligns directly with my professional interests as an MPP student yearning to bridge gaps in the healthcare sector. You both are two highly passionate and brilliant female leaders whose exemplary work has motivated me to create the change I hope to see in our world. Thank you.

### **TO DAD, MOM, ADAM, CATA, ZAY, AND VALE,**

I also want to express my deepest admiration and appreciation for you all, my family; you are my biggest supporters and also my biggest challengers. I dedicate this work to you all because you have allowed my curiosity in life to flourish. Your physical, mental, and emotional support has given me the foundation to be who I want to be and explore my passions in life. For that, I am eternally grateful. Wholeheartedly, thank you.

### **TO MY BATTEN PEERS, FACULTY, AND STAFF,**

Our two years of the program were not expected. We navigated a global health pandemic, online classes, then in-person classes, and everything in between. You've all impacted me academically, professionally, socially, and in our one-off conversations in the Great Hall. I leave the Frank Batten School of Leadership and Public Policy with the comfort that I know the future leaders of our country *and* the people that helped mold them. For that, I feel honored to have known you all. I would also like to thank my Batten faculty advisors, specifically Lucy Bassett for affirming my passion for equity-centered policy, and providing instrumental guidance to the deliverable presented today. Thank you.

### **PARA MI FAMILIA EN ARGENTINA,**

Tambien quiero dedicar este reportaje a mi familia en Argentina. Aunque la distancia nos separe, ustedes estan conmigo siempre. Yo soy quien soy por el apoyo y el amor que me dan. Gracias por todo.

## GLOSSARY

**INTERPRETATION SERVICES:** Interpretation services are real-time, contextualized interpretation of, usually, *spoken* content provided to patients.

**LANGUAGE CONCORDANCE:** In the healthcare context, this refers to when the patient and care provider speak the same native language.

**LIMITED ENGLISH PROFICIENCY (LEP):** Individuals are considered to have limited English proficiency if English is not their primary language and if they have difficulty communicating effectively in English. Census data reports LEP individuals as anyone who self-surveys as speaking English *less than* “very well”.

**TELEHEALTH:** Telehealth refers to health services provided via electronic information and telecommunication technologies. Contingent on state regulations, this health-care delivery method allows for remote patient and provider contact, care, monitoring, and intervention. Telemedicine is categorized under the umbrella of telehealth and is specific to clinical services while telehealth also includes non-clinical healthcare services.

**TRANSLATION SERVICES:** Translation services are direct, word-for-word translation of, usually, *written* content provided to patients.

## ACRONYMS

**CHC** – Community Health Centers

**CMS** – Centers for Medicare & Medicaid Services

**DMAS** – Department of Medical Assistance Services

**HHS** – Department of Health & Human Services

**HHP** – Hospital Preparedness Programs

**HRSA** – Health Resources and Services Administration

**LEP** – Limited English Proficiency

**VDH** – Virginia Department of Health

**VRI** – Video Remote Interpretation

**VTN** – Virginia Telehealth Network

## EXECUTIVE SUMMARY

Individuals with limited English proficiency (LEP) are a subset of the American population who self-identify as speaking English “less than well.” Language proficiency is an indicator for other social determinants of health like race, ethnicity, socioeconomic status, and education level. As a result, individuals with LEP are disproportionately affected in accessibility to quality healthcare in the United States. Communication and language barriers with healthcare providers hinder the ability to construct the most effective treatment plans, impact patient-provider relationships, and decrease overall patient satisfaction and quality of care that LEP patients receive.

These subpar health outcomes are not specific to in-person clinical healthcare settings; telehealth (in)accessibility for individuals with LEP, especially in the midst of the COVID-19 pandemic, has only exacerbated previous health care trends. This is a result of various factors like by provider-sided barriers (i.e. lack of cultural competency and interpretation/translation services); patient-sided obstacles to accessibility (i.e. digital literacy and access to technology); and lack of infrastructural support (i.e. regulations and broadband expansion). Therefore, this report explores telehealth accessibility issues for individuals with LEP in Virginia as ***too few insured individuals with limited English proficiency (LEP) use and can access telehealth services in Virginia.***

TO ADDRESS THIS ISSUE, I CONSIDERED THE FOLLOWING ALTERNATIVES:

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1. Advocate for Video-Remote Interpretation Availability and Use Among All Telehealth Providers
2. Develop and Provide Technology-Adapted Cultural Competency Training for Healthcare Providers
3. Advocate for Virginia Community Health Centers (CHC) to Implement Telehealth Kiosks Across All Sites
4. Develop and Disseminate Standardized Telehealth Guidelines for Patients and Providers

I evaluated the alternatives based on equity, implementation timeliness, administrative feasibility, and cost. ***Based on my analysis, I recommend alternative #1: Advocate for Video-Remote Interpretation Availability and Use Among All Telehealth Providers.*** This alternative directly impacts usage rates and accessibility concerns for LEP individuals by providing culturally competent language services at low costs to providers. Also, its short implementation process, as well as its moderate administrative feasibility among telehealth providers can provide effective and timely intervention in the midst of a global health pandemic and a growing technologically reliant society. This is especially relevant given growing healthcare inaccessibility for individuals with LEP in Virginia and across the nation. Implementation of this alternative requires the VTN to develop an advocacy strategy to encourage uptake of these services among their telehealth provider network.

## PROBLEM DEFINITION

*Currently, too **few** insured individuals with limited English proficiency (LEP) use and can access telehealth services in Virginia.*

## PROBLEM OVERVIEW

### TELEHEALTH IN VIRGINIA

Telehealth refers to health services provided via electronic information and telecommunication technologies. Contingent on state regulations, this health-care delivery method allows for remote patient and provider contact, care, monitoring, and intervention (Gajarawala & Pelkowski, 2021). Prior to the pandemic, only thirty-five states required insurers to cover telehealth visits. Of those, only fifteen states required insurers to reimburse providers for telehealth visits at the same rate as in-person visits (Volk et al., 2021). However, COVID-19 has created greater need for telehealth services. 95 percent of health centers reporting use of telehealth at the onset of the pandemic compared to 45 percent of health centers relying on telehealth in 2019 (Demeke et al., 2020).

To meet current demand, telehealth policy restrictions were lifted with the intention of easing the delivery of care while reducing risk of transmission and infection, as well as reducing the strain on the healthcare systems' capacity and resources. Despite the capabilities of telehealth, certain considerations were not taken into account in the implementation of its services thus exacerbating digital divides across certain subsets of the population. Moreover, the same regulations intended to increase accessibility are now being rolled back impacting the delivery of care that various populations have come to rely on (Resneck, 2020). As a result, telehealth has actually increased disparities in health care access across the following populations: individuals with limited digital access/literacy, rural residents, racial/ethnic minorities, low-income individuals, and individuals with LEP (Nouri et al., 2020). Their experiences should be centered as our healthcare system expands its telehealth capacity.

Ultimately, the problem defined above is compounded by various factors that exacerbate the accessibility of telehealth services for this population, in particular. Individuals with limited English proficiency (LEP) are impacted by provider-sided barriers, patient-sided obstacles to accessibility, and lack of infrastructural support. Below, I will outline the elements of the problem definition to capture these facets and their impact on individuals with LEP.





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## **PROVIDER-SIDED BARRIERS**

### **EFFECT OF LANGUAGE ON MEDICAL CARE: IN THE U.S. AND ABROAD**

English proficiency is a key determinant of the quality of health care and accessibility of services (Jacobs et al., 2004); individuals with LEP report less satisfaction with the care they receive and are at greater risk for misdiagnosis or medical error because of the language barrier (Jacobs et al., 2004). However, more than 200 different languages are spoken in the U.S. today, expanding the linguistic diversity of our country and exacerbating the strain on healthcare professionals to provide adequate, language-specific care (Chen et al., 2007). A language barrier results when providers and patients do not share a native language or other meaningful mechanisms of communication like culturally-competent providers or interpretation services. (Slade & Sergent, 2018). For LEP individuals, language in the healthcare setting is a relevant indicator of various factors that impact quality of care. It creates communication barriers with providers in constructing the most effective treatment plans, is illustrative of other social determinants of quality of life (e.g., lower socioeconomic status or lower educational attainment), and relates to cultural signals that influence health behaviors (Feinstein, 1993; Makuc et al., 1989). Additionally, patients with LEP receive larger medical charges because they are more likely to receive more lab workups, longer emergency department stays, and more hospital admissions as a result of miscommunication in the clinical setting (Slade & Sergent, 2018). Ultimately, this foments institutional distrust and dissatisfaction with the healthcare system, as well as creates emotional and mental distress for LEP patients (Slade & Sergent, 2018).

The issue of language barriers remains prominent in the U.S. and in Europe, especially as migrant patterns -- particularly in which asylum seekers and refugees are immigrating at higher levels -- signal growing immigration across both regions (Cano-Ibáñez et al., 2021). However, countries are failing to adapt to an increasing linguistic diversity within their countries. Similar to the U.S., countries like Australia, Switzerland, Germany, and the UK, prefer ad hoc interpretation services because of cost and convenience despite increasingly available professional interpreter services (Bischoff & Hudelson, 2010). Ultimately, language is instrumental in receiving and providing quality healthcare services, particularly for non-native speakers. However, systems here and abroad are limited in their capacity and knowledge to compensate for existing language barriers with their patients.

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## **PATIENT-SIDED OBSTACLES**

### **DIGITAL DIVIDE AND LITERACY**

Research shows that communities with higher rates of poverty and among patients with limited English proficiency had lower rates of telehealth use (Rodriguez et al., 2021). Eberly et al. found that non-English speaking patients were 50% less likely to use telehealth compared to English-speaking patients, although they did not find differences in video visit use (Eberly et al., 2020). This is concerning because there are over 25 million people in the U.S. with LEP who are more

likely to live in poverty and work a service job that increases risk of exposure to COVID-19 (Whatley and Batalova, 2013). In Virginia, specifically, about 40% of foreign-born individuals self-reported as having LEP (Migration Policy Institute, 2019). This signals that significant portions of our state and federal population require additional consideration in the implementation of accessible and equitable telehealth services.

These individuals would directly benefit from greater language competency within the telehealth infrastructure. Hispanic/Latino patients make up a significant proportion of the population of LEP individuals in Virginia (U.S. Census Bureau, 2020). They were most likely to cite potential barriers to telehealth service use despite being more interested in using these services compared to Black and White/non-Hispanic patients (AARP, 2020). Also, patients must have a video or audio-enabled device and the digital literacy to navigate telehealth platforms to receive care; underserved patients like LEP individuals often lack these fundamental components like technology and digital literacy (Rodriguez et al., 2021). This illustrates how patients with LEP face significant challenges in receiving proper care due to the inaccessibility of limited language options on commonly used telehealth platforms. Ultimately, few digital health tools and telehealth infrastructure at large consider English proficiency in their design. As a result, individuals with LEP are disproportionately affected, both in quality of care and subsequent health outcomes, by the inaccessibility of telehealth services (Anaya et al., 2021).

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## **LACK OF INFRASTRUCTURAL SUPPORT**

### **COVID-19 ON TELEHEALTH USAGE IN VIRGINIA**

Specifically in Virginia, Governor Northam used his emergency powers to modify Virginia's requirements and regulations for telehealth use in order for healthcare professionals to provide timely and quality healthcare at reduced risk of transmission of COVID-19. Executive Order 57 authorized out-of-state licensed professionals to practice in Virginia, removed the required practice agreement necessary for experienced nurses to work, and laxed telehealth regulations (E.O. 57, 2020). Other efforts included streamlining the licensing process for various medical professional groups, expanding where patients can be treated using telehealth (i.e., business, schools, homes, etc.), and mandated insurers to cover telehealth services (Federation of State Medical Boards, 2021). As of July 1, 2021, Virginia's State of Emergency declared in response to COVID-19 has expired; all Executive Orders like Executive order 57 have expired, as well. Therefore, action in the telehealth space does not have the same momentum as it did at the onset of the pandemic at the state level.

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## **COST TO SOCIETY**

In **APPENDIX A**, I have outlined the estimated cost to society if the problem identified is left unaddressed. These costs were estimated based on expected direct costs, externalities, and opportunity costs of not increasing accessibility and use of telehealth services for individuals

with LEP. Overall, the estimated cost to society of not addressing telehealth accessibility for Individuals with LEP is estimated to be **\$29,261,600 - \$109,308,580**.

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## GOVERNANCE & JURISDICTION

In **APPENDIX B**, I have outlined the legal and legislative framework at the state and federal level to understand the state of policy across the different levels of governance with regards to language services in healthcare and telehealth accessibility. This provides the legislative background to related policy interventions with regard to telehealth.

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## EXISTING EVIDENCE

Below, I have summarized the evidence and best practices to address telehealth accessibility for individuals with LEP based on the available literature. Because of the novelty of widespread telehealth use ushered by the pandemic, there is limited literature on the results and outcomes of practices. Evaluation of alternatives is bounded by that fact; therefore, data and literature should be reevaluated in response to the greater visibility of the telehealth sector and subsequent research conducted in the coming years. The existing evidence is divided into three separate sections:



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## BARRIERS TO QUALITY INTERPRETATION/TRANSLATION SERVICES

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### STATUS QUO

The literature under this section (i.e. **Status Quo**) outlines current practices used by healthcare professionals at large in regards to interpretation and translation services for individuals with LEP. This will provide a baseline for future policy alternative considerations given the outcomes illustrated in the literature of the current state of affairs.

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### INTERPRETER SERVICES

Federal law standardized interpreter services within delivery of care structures; failure to provide these services when necessary is considered discriminatory and illegal under Title VI of the Civil Rights Act (Juckett & Unger, 2014). Woloshin et al. found that the use of medical

interpreters in healthcare settings reduces health outcome inequalities for LEP individuals and directly impacts the quality of care they receive (Jacobs et al., 2001). However, states are provided no federal funding to supplement interpretation service costs impacting compliance (Juckett & Unger, 2014). Additionally, professional interpreters are often not available, particularly for smaller facilities with minimal resources. Therefore, healthcare professionals increasingly rely on ad hoc interpreters, families and friends, or bilingual staff to interpret and provide support to LEP patients during their visits (Juckett & Unger, 2014). In a study comparing errors of medical interpretation, the potential for interpreter error and subsequent adverse health consequences is significantly lower when a professional interpreter is used (Flores et al., 2012). The proportion of error was higher for ad hoc interpreters versus no interpreter use at all proving that current practices are more detrimental to health outcomes of LEP individuals (Flores et al., 2012). This illustrates how the reliance of the current practice of ad hoc interpretation impacts the quality of care individuals with LEP receive.

Clinicians also have limited experience with how to best incorporate professional interpreters into their standard of care (Fernandez & Schenker, 2010). In interviews conducted with clinicians and professional interpreters, it was found that there are conflicting opinions as to the role, expertise, and authority of professional interpreters in a clinical setting (Hsieh, 2010). Traditional clinician understanding is that interpreters should directly translate the information provided by the clinician (Leanza, 2005; Fatahi et al., 2008). However, interpreters generally provide culturally relevant information in addition to medical information to improve quality of care (Rosenberg et al., 2008). For instance, interpreters reported intentionally inter-changing words, omitting culturally-insensitive questions, and adding additional medical information as they saw relevant (Hsieh, 2010). This creates an incongruity of care between providers, interpreters, and the patient. Ultimately, the devaluation of the role of the interpreter by clinicians and the lack of training of professional interpreters contributes to ineffective delivery of care for LEP patients.

## LANGUAGE TRANSLATION TOOLS

The pandemic has ushered the development and implementation of mobile technology like digital translation tools within healthcare settings given greater usage of telehealth services (Panayiotou, 2019). This increased reliance on digital translation tools is compounded by the scarcity of professional interpreters willing and able to offer their services. Healthcare professionals report using the internet and other mobile apps to facilitate translation with non-English speaking patients (Chang et al., 2014). However, these technologies have not been curated and evaluated for health care settings (Panayiotou, 2019). Studies on web-based tools like Google Translate have outlined risks in accuracy for clinical setting usage (Nguyen-Lu et al., 2010; Patil & Davies, 2014). Of the total translations evaluated, Patil and Davies found that only 58% of the translations were accurately translated from English (Patil & Davies, 2014). Discrepancies in accuracy also vary by language; Western European languages have the highest accuracy rate while African languages score lowest in accuracy (Patil & Davies, 2014).

Furthermore, in high-risk clinical situations with complex medical terminology, these varying accuracy rates can have dire implications on a patient's health outcome. However, the

suitability of these digital translation tools has implications in everyday clinical conversations between patient and provider, as well. Patient-provider dialogue is instrumental to combat potential miscommunication to ensure appropriate and adequate care so patients' needs are satisfied (Panayiotou, 2019). Therefore, Panayiotou et al. found that the efficacy of these tools relied heavily on the features embedded in the app and should not serve as a substitute for professional interpreters despite being used as such (Panayiotou et al., 2019).

## **LIMITATIONS**

There have been few studies conducted that directly evaluate the use and efficacy of translation apps in medical and health care settings. Additionally, even fewer studies cross-compare multiple translation apps or examine the efficacy across contexts in which they are more suitable to use. Additionally, research is limited to traditional healthcare settings because of the novelty of telehealth as a result of the pandemic.

## **REMOTE INTERPRETING**

Professional interpreters are an established gold standard in healthcare settings; however, lack of accessibility to and training of qualified interpreters remains a pervasive issue (Brisset et al., 2013). Various clinical settings have turned to remote video-conferencing technology as an innovative solution to provide language-concordant care given the limitations of the pandemic. Remote interpretation technology has increased patient and clinician satisfaction more than ad hoc or no interpretation have (Cunningham et al., 2008; Lee et al., 2002). This is important as the latter two approaches are primarily used by healthcare professionals today. Furthermore, studies report technology works just as well as in-person interpreting for clinical situations in which straightforward information is exchanged (Price et al., 2012). Survey data collected from professional medical interpreters highlights the constraints of interpreting over telephone; video interpreting provides greater interpersonal communication with patients (Price et al., 2012). Face-to-face interpretation, even if conducted through a screen, is necessary to ensure a comprehensive and accurate health assessment of the patient, particularly within telehealth (Gilbert et al., 2021). Visual, remote communication with patients can combat miscommunication and cultural incompetence as language concordant interpreters can be accessed from anywhere. Video interpretation provides flexibility in the pool of interpreters available for use. From the service-provider side, video remote interpretation (VRI) allows interpreters to save on travel time and costs while providing them the financial and practical benefits of working wherever to meet the demand for services (Gilbert et al., 2021). However, VRI services are not required and are implemented haphazardly across providers based on clinical capacity, knowledge, and resource availability.

## **LIMITATIONS**

Most studies in this space have looked at satisfaction with interpreting services is concerned mostly with interpreter attitudes. Clinician experience is considered but not centered in the literature. Additionally, the attitudes highlighted in the survey illustrate pre-pandemic attitudes which might not reflect the attitudes of the current healthcare and clinical setting.

## **BARRIERS TO PROVIDING CULTURALLY COMPETENT HEALTH CARE**

The literature covered in this section focuses on the provider-sided barriers exacerbating the problems confronted by individuals with LEP in healthcare (i.e. language concordance and cultural competency in care provided to patients).

### **LANGUAGE CONCORDANCE BETWEEN PATIENT AND PROVIDER**

Language concordance refers to a patient meeting with a primary care physician who is highly proficient in a patient's preferred language (Kanter et al., 2009). It is associated with greater patient-physician trust and better medical adherence while reducing overall cost per patient (Fernandez et al., 2004; Ngo-Metzger et al., 2007; Morales et al., 2015). Additionally, physician language use and characteristics are positively correlated with patient use of preventative care services (Bach, 2005; Reschovsky & O'Malley; 2008). To illustrate its impact in healthcare, Kanter et al, found that Spanish-speaking patients reported mostly having English-speaking physicians and understood about half of what was communicated to them (Kanter et al., 2009). Comparatively, patients who had Spanish-speaking physicians self-reported greater satisfaction with their quality of care and course of treatments (Kanter et al., 2009).

Ultimately, studies found that professional medical interpreting is inferior in efficacy and patient satisfaction to language-concordant medical care (Kanter et al., 2009). Despite its impact, language learning for providers is not a systematic part of the medical curriculum; only one of thirty-two global health medical programs studied explicitly included language proficiency in its curriculum objectives (Molina & Kasper, 2019). Nonetheless, there has been a push to integrate language requirements in medical school to develop a competent workforce in language-concordant care. Language-concordant curriculums include teaching strategies like didactic instruction, role play, and immersion activities in clinical settings (Morales et al., 2015). Also, because of the growing demographic of Spanish-speaking patients, specifically, medical schools in the U.S. have expanded their availability of medical Spanish curricula (Morales et al., 2015). However, many schools lack the incentives to encourage students to take these courses and do not require evidence of language proficiency before working with LEP patients (Morales et al., 2015).

### **CULTURAL COMPETENCY TRAINING; CAMPINHA-BACOTE'S MODEL**

Culturally competent care is when healthcare professionals provide care that considers and respects cultural factors that impact the care patients receive. Factors that impact culturally competent care are: language, communication styles, cultural values, beliefs, and behaviors (AHRQ, 2012). This approach to healthcare delivery is a strategy that has been implemented to address health disparities among racial and ethnic populations (McCalman et al., 2017). The Office of Minority Health, housed under the jurisdiction of the Department of Health and Human Services, is tasked with outlining the national standards for culturally competent care in healthcare (McCalman et al., 2017). These standards are called the National Culturally and Linguistically Appropriate Services Standards. Despite these standards, culturally competent interventions are costly. Additionally, the perceived benefits are not as explicit for healthcare



organizations to warrant meaningful investment in the space to yield the outcomes expected of those interventions. (Weech-Maldonado et al., 2012). Additionally, even when implemented, cultural competency models in healthcare focus on providing facts specific to different cultures. This can create a reliance on ill-informed stereotypes that can be harmful in clinical settings (Beach et al., 2004).

Nonetheless, new models have been adopted to address the shortcomings of traditional cultural competency models. The Campinha-Bacote cultural competency healthcare delivery model frames cultural awareness and learning as an active process that accounts for the dynamic and nuanced nature of cultural understanding (Campinha-Bacote, 2002). It requires individuals to reflect upon and scrutinize one's own cultural features and practices (Campinha-Bacote, 2002). This allows for critical engagement about where misunderstandings or cultural differences may arise when engaging with individuals across different cultures. This model includes the following elements and literature: different cultural dimensions and how that manifests on a micro-level (Trompenaars & Hampden-Turner; 2011), how pain is interpreted and internalized across culture along with considerations about individual behavior about personal space and religious/spiritual practices (Campbell & Edwards, 2012), and evidence and interviews with key cultural actors (i.e. priests, teachers, healthcare professionals) to embed interpersonal relationship dynamics in reflection and training (Balasubramaniam, et al., 2018). Such a training model leverages a provider's personal experiences to better recognize and understand cultural differences, as well as how to construct meaning from them in delivery of care (Jones & Brader-Araje, 2002). Various studies have concluded that this type of cultural competence training expanded healthcare professionals' cultural awareness and provided them new communication tools to use in clinical settings (Jones & Brader-Araje, 2002). However, no standard cultural competency practices are taught across medical school curriculums (Morales et al., 2015).

## **LIMITATIONS**

The literature highlights the importance of language concordance for patient satisfaction and medical outcomes. However, the effects of language concordance from the perspective of the provider are less-explored in the context of job satisfaction and job productivity. Additionally, there is some concern about the transferability of results of Campinha-Bacote's model across different sectors of the healthcare system like telehealth.

## **BARRIERS TO EXPANDING TELEHEALTH SERVICES**

In this section, I will summarize the literature with regard to the irregularities of telehealth-specific regulations across states and regions in conjunction with the lack of standardization of practices used by telehealth professionals. Additionally, I will discuss technology and broadband accessibility as key barriers in the expansion of equitable telehealth services. These barriers are relevant to the conversation of telehealth service expansion as they attest to the variability in health outcomes and services available to certain subpopulations across the country.

## **TELEHEALTH REGULATIONS & STANDARDIZATION OF PRACTICES**

At the commencement of the pandemic, various state governors removed barriers to practicing healthcare and invoked more lenient telehealth regulation guidelines to ensure delivery of care and reduce the risk of transmission. Telehealth professionals were able to prescribe medication through telehealth platforms, states recognized out-of-state medical licenses, and insurers were required reimburse telehealth visits at the same amount as in-person visits (Picher et al., 2021). However, many of these regulations are being rolled back as we transition out of the pandemic. This is expanding barriers to access. For instance, 10% of unique telehealth visits conducted throughout the pandemic by Johns Hopkins were from states where it does not have operating facilities (Appleby, 2021). Under changing regulations and inter-state licensing agreements, people are losing access to telehealth services. Virginia, specifically, is among the states where emergency orders (see **APPENDIX B** for more information about these emergency orders in Virginia) are expiring or being limited in scope instituting restrictive telehealth regulations once again (Appleby, 2021). Ultimately, changing and inconsistent telehealth regulations creates enforcement issues due to variable policing and practicing authority across states (Resneck, 2020).

When delivering telehealth services, providers are required to adhere to the same standards of in-person clinical practice (VirginiaPremier, n.d.). The American Telemedicine Association is a broad body that develops standards and guidelines for telehealth and disseminate them onto their website for widespread use (Krupinski et al, 2010). Telehealth guidelines used by telehealth professionals capture various standards and guidelines, yet they are most reliable when they are adjusted to the specific localities or states (Krupinski and Bernard, 2014). However, the haste of the transition to widespread telehealth use created a haphazard assortment of practices that providers relied on in the delivery of care (Resneck, 2020). Practices were developed without consistent strategy or structure across providers.

## **LIMITATIONS**

There is little data to signal the impact and expected outcomes of the variations in regulation with regards to telehealth-related health outcomes. Given the continued variability in telehealth regulations, there will likely not be any consensus as to these outcomes until more time passes and data is collected. Also, the literature is not up to date to capture the impact of standardized guidelines on health outcomes.

## **INTERNET BROADBAND & TELEHEALTH TECHNOLOGY**

Internet access has become a determinant of productivity and success in our society, especially in healthcare as technology has expanded its capabilities; the pandemic has sped up this translation to a more technologically-reliant society. A FAIR Health analysis found that insurance claims for remote services at the onset of the pandemic rose more than 8,000 percent from 2019 (Fairhealth, 2020). However, home broadband adoption still varies across racial minorities, socioeconomic status, and education-level (Pew Research Center, 2021). To address this increasing necessity, many governors have developed various strategies to expand its broadband coverage. The state of Colorado awarded over \$2 million in grants to deploy telehealth equipment and other training programs (Office of eHealth Intervention, 2021).



Additionally, states like Missouri and Iowa used federal funding to expand public wi-fi, deploy hotspots, and upgrade digital infrastructure (Picher et al., 2021). These efforts are relevant to expanding accessibility and development of telehealth services and infrastructure at the state-level (Picher et al., 2021).

Additionally, telehealth has grown under the COVID-19 pandemic with its technology becoming increasingly important in the delivery of healthcare. However, populations that lack technology access (i.e. patients with LEP, rural residents, low income, etc.) generally come from the same underserved populations with worst health outcomes and lack of access to care (National Academies of Sciences, Engineering and Medicine, 2017). As a result of this technology gap, populations racial and ethnic minorities, like Hispanic and Black communities, are more reliant on smartphones for internet access and to receive telehealth care (Nouri et al., 2020). These trends are not specific to the United States, as digital technology divides are present across other countries particularly in lower- to middle-income countries in Africa and Latin America (United Nations, 2019).

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## CRITERIA

Based on the literature, I will outline four proposed alternatives to address the issue of telehealth accessibility for individuals with LEP. To evaluate these alternatives in regard to the expected outcomes they yield, I will use the following criteria as defined below: equity, implementation timeliness, administrative feasibility, and cost. In the last year, the VTN made a commitment to equity in telehealth by centering various initiatives and conversations on disproportionately-affected communities in need of or with less than quality access to telehealth. These guiding principles (i.e., safe, effective, and equitable care) will serve as the evaluative foundation in the alternatives I consider. Similarly, other values to keep in mind are implementation timeliness and feasibility of enactment given the pressing nature of the problem, variability in provider experience constraint in people power and resources within their organization.

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**EQUITY:** *Does this policy directly impact individuals with LEP?*

This criterion analyzes how ***directly each policy option improves telehealth accessibility and use for people with LEP***, specifically. It will be measured qualitatively based on research evidence and the extent of its direct or indirect impact on telehealth accessibility and usage rates for LEP population. Direct impact is defined as a targeted policy intervention whose implementation would increase usage and accessibility for LEP individuals immediately. Indirect impact is defined as a targeted policy intervention whose implementation would increase usage and accessibility as a result of the policy at a later time or removed from the implementation of the policy itself. A successful policy should prioritize the improved telehealth accessibility and use of LEP individuals directly.

It will be ranked on a scale of ***low, medium, and high***. A ***low*** ranking in equity means that the policy does not address telehealth accessibility and usage rates for LEP

individuals. A **medium** ranking means the policy addresses telehealth usage rates for individuals with LEP indirectly. A **high** ranking means the policy has direct impact on telehealth usage for individuals with LEP have a change in telehealth usage.

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**Implementation Timeliness:** *How long will it take to fully implement this alternative?*

This criterion measures the speed at which the alternative can be implemented. It will be measured **in months** based on how long it takes for policy to be reflected in the practices of telehealth providers and how long does the policy have to be in place to yield benefits. A successful policy is one that is implemented the **quickest, in months**.

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**ADMINISTRATIVE FEASIBILITY:** *What is this policy's potential for enactment?*

This criterion captures the **likelihood for enactment**. It will be measured based on VTN's qualitative survey data capturing provider sentiments and experiences with telehealth from their extended network of telehealth professionals. A successful policy is one that has extensive support across all stakeholders with few administrative obstacles that can hinder enactment.

Extensive support will be measured based on the percentage of telehealth professionals who identified a relevant area of improvement of patient services in regard to the proposed alternative. It will be ranked on a scale from **low, medium, and**. A **low** ranking policy means that the average percentage of telehealth professionals who identified areas of improvement in their telehealth patient services relevant to the policy is less than or equal to 33 percent (i.e. less than one-third support of telehealth providers). A **medium** ranking policy is if the average percentage is between 34-66 percent (i.e. greater than one-third but less than two-thirds support of telehealth providers). A **high** ranking policy is if the average percentage is greater than 66 percent (i.e. greater than two-thirds support of telehealth providers). Areas of improvement outlined in the survey indicated by telehealth professionals are: 1) internet connectivity, 2) technical assistance, 3) access to devices, 4) digital literacy, 5) interpreter services, and 6) trust in telehealth capabilities. I focus on this aspect of the survey because potential for enactment is dependent on the provider's likelihood to adopt the proposed policy. I am operating under the assumption that if a proposed alternative coincides with an identified area of improvement, there will be greater probability the policy will be enacted.

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**COST:** *How much will each policy cost to be enacted?*

This criterion measures the cost of the policy to be enacted. It will be measured in expected **monetary cost in U.S. dollars rounded up to the thousand** to implement the policy for both the VTN and telehealth professionals and providers. A successful policy alternative is one that can be enacted at the lowest cost.

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## POLICY ALTERNATIVES

Based on the existing literature, I will consider the following alternatives listed below for the Virginia Telehealth Network (VTN) to address telehealth inaccessibility for fully-insured individuals with limited English proficiency (LEP) in the Commonwealth. I will evaluate each alternative based on expected outcomes in addressing the problem outlined using the criteria defined in the previous section. Please refer to **APPENDIX C** to review the outcomes matrix in which the subsequent finding results are organized.

1. **Advocate for Video-Remote Interpretation Availability and Use Among All Telehealth Providers**
2. **Develop and Provide Technology-Adapted Cultural Competency Training for Healthcare Providers**
3. **Advocate for Virginia Community Health Centers (CHC) to Implement Telehealth Kiosks Across All Sites**
4. **Develop and Disseminate Standardized Telehealth Guidelines for Patients and Providers**

### **ALTERNATIVE 1: ADVOCATE FOR VIDEO-REMOTE INTERPRETATION (VRI) AVAILABILITY AND USE AMONG ALL TELEHEALTH PROVIDERS**

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This alternative would require the VTN to advocate for all providers who offer telehealth services to have video remote interpretation (VRI) services available to all telehealth patients who request it. As a first step, a specified question needs to be added to the patient intake form (i.e. “Please check here if you require interpretation services in various languages.”). If checked, services will be provided 5-10 minutes before the visit with the physician, so the patient can explain their purpose for the visit to the interpreter and explain any confusion they may have. Additionally, interpreters will be provided through video at any point during the visit if the patient requests it or if the provider deems it necessary. This would require that providers contract off-site VRI services to be available “on demand” or 24 hours a day, seven days per week. LanguageLine, an organization that provides on-demand access to more than 14,000 professional interpreters in 240-plus languages, offers this “on-demand” service as their main service to clients (LanguageLine Solutions, n.d.). When a request for interpretation services comes in, medical providers must acquire information (e.g. where are they from, what is their native language) from the patient to ensure a culturally competent language-speaker is appropriately matched with the patient. Interpretation providers can provide additional information about the interpreters they hire, train, and make available to clients. This information can be used to pair these matches should prioritize language concordance and should be requested to the VRI company.

## EVALUATION

### EQUITY

In the survey conducted by the VTN in December 2021 to over 9,000 telehealth professionals in the Commonwealth, 29% of telehealth providers expressed confidence in their abilities to communicate health outcomes and treatments to patients with LEP when using telehealth (Virginia Telehealth Network, 2021). With providers' low level of confidence about communicating with patients, it is likely that non-English speakers would be less likely to use telehealth services. This is illustrated in a study conducted with over 3,000 adult cardiology patients who were scheduled for a telemedicine visit in which non-English speakers were 50% less likely to use telehealth than English speakers (Marin, 2020). Additionally, non-English speaking patients reported less satisfaction with their quality of care when they could not understand the provider and what was being communicated to them (Kanter et al., 2009).

This alternative would lessen this equity gap as studies demonstrate that LEP patients' utilization rates generally approached or equaled those of English-speaking patients when interpreters were used (Karliner et al., 2007). Interpreters increased patient satisfaction, improved adherence to treatment, and reduced adverse health events and outcomes by bridging communication barriers between providers and patients (Juckett & Unger, 2014). Ultimately, health outcomes for LEP patients improve when professional interpreters mediate medical conversation (Karliner et al., 2007). Therefore, the direct impact of providing more reliable and consistent interpretation services on LEP telehealth usage and accessibility means ***I rank this alternative high in equity.***

#### **IMPLEMENTATION TIMELINESS**

Implementation of this policy is almost immediate from the moment that providers decide to set up these services. To outline the implementation timeline, I will use the example of Mount Sinai's partnership with LanguageLine. LanguageLine requires no additional purchasing of equipment and is compatible with most major teleconferencing and telemedicine platforms for both audio and video usage (LanguageLine Solutions, n.d.). Implementation only requires signing-up and installing systems onto provider technology. ***Therefore, the implementation of this policy is less than one month.***

#### **ADMINISTRATIVE FEASIBILITY**

In a study conducted by the VTN, one out of every five providers indicated feeling ill-equipped in providing necessary language services for LEP individuals (Virginia Telehealth Network, 2021). This alternative addresses this gap by mandating on demand interpretation services that streamlines the process of providing language services for patients that request interpreters. Despite its demonstrated contribution in improving telehealth service uptake and availability, only 34% of telehealth providers identified providing interpreter services as an area of improvement for the delivery of care telehealth patients receive (Virginia Telehealth Network, 2021). Because more than one-third but less than two-thirds of providers identified improving interpreter services as an area of improvement, ***I rank this alternative medium in administrative feasibility.***

#### **COST**

Costs of VRI vary widely depending on the quality of technology of providers, number of patients seen in practice or hospital, and the VRI network provider used. Because contract costs are dependent on those various factors, the cost per minute and subsequent total costs will be portrayed in a range. According to the American Psychological Association, average VRI interpreter costs per minute range from \$0.99-\$3.49/per minute (American Psychological Association, 2020). During 2013-2014, the VDH cited 216,393 total minutes of interpretation calls across all healthcare services, telehealth included (VDH, 2016). This is the most recent data available; however, given the increase in telehealth use as a result of the pandemic, this is a low-bound estimate. Using this data as a baseline for the total number of minutes used for interpretation, ***the cost of this policy per year ranges from \$214,229.07-\$755,211.57***. However, more concrete cost estimates can be provided when telehealth providers request a cost quote from language service providers based on their practice's patient intake.

## **ALTERNATIVE 2: DEVELOP AND PROVIDE TECHNOLOGY-ADAPTED CULTURAL COMPETENCY TRAINING FOR HEALTHCARE PROVIDERS**

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Campinha-Bacote's model for cultural competency will serve as the foundation for this alternative. It would require healthcare providers to undergo cultural competency training to reflect upon and scrutinize their own cultural features and practices. This allows for critical engagement about situations in which misunderstandings or cultural differences may arise when engaging with individuals across different cultures. Also, it eliminates the use of prescriptive, cultural stereotypes that can be harmful in clinical settings. The expectation is that providers would participate in this training when hired, and then again once a year as part of ongoing education for providers. The training would include the following elements: discussions on cultural dimensions and how they manifest in interpersonal relationships; how pain presents itself across culture, religion, and spiritual practice; and collaboration with key cultural actors (religious actors, teachers, healthcare professionals) to gauge best practices in the telehealth space. Additionally, this training would embed conversations about technological barriers for patients and how to navigate them as providers with specific consideration given to how cultural nuances may present themselves in a technology space (audio, visual, background setting, etc.). These technological barriers include: how to use technology, how to navigate the online health system, how to complete necessary medical forms, how to request additional language services, and how to complete follow-up care.

## **EVALUATION**

### **EQUITY**

Healthcare provider training was identified as one of the most important tools to overcome disparities in service quality patients receive (Smedley et al., 2003). Studies concluded that cultural competence training had a positive impact on the cultural competence of healthcare providers. Of those that received training, there was increased awareness in needs of patients with LEP, interest in patient background knowledge, and cultural sensitivity (Govere & Govere, 2016). While cultural competency training does not directly address usage and accessibility

concerns for LEP individuals, it addresses health disparities of LEP individuals because it improves patient satisfaction by mediating trust and quality of care concerns (Brach & Fraser, 2016). In establishing stronger relationships among patients and providers, cultural competency training for providers contributes to greater trust and better communication which indirectly improves adherence and utilization of health for individuals with LEP (Andrulis & Brach, 2007). The impact of this policy will not immediately improve telehealth usage and accessibility of LEP individuals but will instead indirectly address the quality of care these individuals receive through provider training and competency. This will contribute to a greater sentiment of trust in the care they receive that will subsequently increase utilization (Andrulis & Brach, 2007). Therefore, ***I rank this alternative as medium in equity.***

### **IMPLEMENTATION TIMELINESS**

I will use the development of the Institute of Medicine's cultural competency training as a baseline to develop the implementation timeline. The Institute of Medicine developed a 90-minute live interactive session facilitated by training staff with an additional 25-minute web-based module (Parker et al., 2020). Chapman Alliance conducted research into the time taken to develop different types of training. However, a limitation of this analysis is that there are few other sources that outline general training development timelines.

Per Chapman Alliance, instructor-led training of a complex subject matter with customizable content and deliverables takes eighty-two hours of development for every hour of training (Chapman Alliance, 2010). Based on the proposed format and using the length of training outlined by the Institute of Medicine (i.e. ~two-hour training), it would require 164 hours of development time. Assuming a traditional 8-hour workday, this corresponds to twenty-one days of training development, or, less than a month of training development. However, implementation for this policy also considers how long it will take for providers to undergo training. Therefore, I allow providers one year (twelve months) to establish these programs. ***Therefore, the implementation of this policy is thirteen months.***

### **ADMINISTRATIVE FEASIBILITY**

The sociocultural differences among patients and healthcare providers influence the quality of care providers can provide and patients can receive. However, less than half (47%) of health care providers surveyed feel confident in their ability to establish meaningful relationships with patients with limited English proficiency (Virginia Telehealth Network, 2021). Barriers to establish meaningful relationship with LEP individuals stem from variation in patients' ability to recognize clinical symptoms of disease and illness, thresholds for seeking care (including the impact of racism and mistrust), expectations of care (including preferences for or against diagnostic and therapeutic procedures), and the ability to understand the prescribed treatment (Einbinder & Schulman, 2000; Flores, 2000; Denoba et al, 1998). Systems lacking culturally and linguistically appropriate health education materials lead to greater patient dissatisfaction and lower-quality care when there is language discordance between patient and provider (Seijo, 1991). High levels of patient dissatisfaction with care can be exacerbated by the lack of trust among patients and providers (Shan et al., 2016). Therefore, I am operating under the



assumption that in providing cultural competency training, providers would improve trust in telehealth services for individuals with LEP, thus providing more appropriate care. Despite this impact, only twenty-nine percent of providers identified improving trust in telehealth capabilities as an area of improvement in patient services (Virginia Telehealth Network, 2021). With less than one-third of providers identifying reporting trust in services as an area of improvement, ***I rank this alternative low in administrative feasibility***. This signals that providers have not identified this issue of trust in uptake of services from patients as a widespread issue of concern. Therefore, I make the assumption that it would translate into less support across providers in the enactment of the policy.

## **COST**

Evidence to determine the costs for cultural competency training programs is limited. However, the Institute of Medicine's report about the costs of a culturally-tailored communication training program to increase cultural competence among multidisciplinary care management teams can serve as a financial framework for organizations considering the implementation of similar programs. Program costs are calculated based on two separate categories: program development and program delivery. Program development costs include equipment, personnel, and curriculum development costs (Danzer et al., 2011; Isaranuwachai, 2013; Wynn et al., 2013). Embedded in these costs are research for curriculum, professional development training for support staff, technological equipment to provide training, and establishing partnerships with key cultural actors who will inform curriculum development. Program delivery captures the administrative and operating costs associated with providing the training (von Strauss et al., 2012). These costs include paying support staff that provide training, compensating providers for time during training, and general administrative and regulation capacities to monitor compliance and progress. Because of the variability in potential program development and delivery, the costs of this alternative are reflected in a range. They found the average cost of developing and delivering programs per participant was \$138.51 (Parker et al., 2020). This cost is limited in that the number of participants may impact overall cost. However, I use the average cost from the Institute of Medicine's report to provide a baseline estimate per participant given the limited data available. The VTN has 9,257 active licensed health care providers in their network. Therefore, ***the estimated total cost is \$1,283,000<sup>1</sup>***.

Because providers will have to undergo training each year, providers will only have to pay the program delivery costs every year after that. Program delivery costs comprise about 82% of total costs (Parker et al., 2020). Therefore, after the first year, providers will have to pay the program delivery cost of participants which is about \$113.58/participant. If we use this cost as a baseline estimate per participant, and the VTN has 9,257 active licensed health care providers in their network, ***the estimated total cost is \$1,052,000<sup>2</sup> every year*** that the training is

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<sup>1</sup> [ \$138.51/participant \* 9, 257 participants = \$1,282,187.07 ]

<sup>2</sup> [ \$113.58/participant \* 9,257 providers = \$1,051,410.06 ]

delivered after it is developed. These total costs can be diffused across each practice or hospital based on their own number of providers.

### **ALTERNATIVE 3: ADVOCATE FOR VIRGINIA COMMUNITY HEALTH CENTERS TO IMPLEMENT TELEHEALTH KIOSKS ACROSS ALL SITES**

Modeled after The University of North Carolina (UNC) Health Southeastern's Community Health Services initiative, this alternative would require that the VTN advocate for the placement of telehealth kiosks across the 150 Community Health Centers (CHC) sites in the Commonwealth. Kiosks can be purchased using Hospital Preparedness Program (HPP) cooperative agreement funds which are federal funding

grants specifically used for healthcare delivery system readiness. These kiosks are enclosed, soundproofed areas equipped with telehealth equipment and technology where the patient can sit in front of a screen to talk to a doctor. Booths are equipped with a range of easy-to-use diagnostic instruments (e.g., temperature sensors, blood pressure monitors, printers to send prescriptions) that allow the doctor to guide examinations on their patients remotely. Additionally, each booth location will have trained, on-site individuals ready to assist with any operational issues that patients may encounter. These on-site individuals should be proficient in high-demand languages of that area or be trained in connecting patients with interpreters. New and established patients who wish to use the booth may set up appointments any of the following ways: call their local health center organization, coordinate with their primary care providers who can refer them to the closest kiosk, or sign-up for appointments in-person with assistance from the on-site individual.



Figure 1: Kiosk Industry, 2016

## **EVALUATION**

### **EQUITY**

Digital divide barriers persist and influence adoption and use of telehealth services among particularly vulnerable groups like individuals with LEP. These barriers range from individual elements like low digital literacy to systemic and infrastructural elements like geographic location, broadband internet access, and device affordability (Hilbert, 2011; Ramsetty & Adams, 2020). Other barriers to healthcare access like availability and quality of language services also impacts usage for patients with LEP (Anaya et al., 2021). Telehealth kiosks address these barriers by making provision of services and supply cheaper, faster, user-friendly, and tailored to the individual patient's time, background, and needs (Williams et al., 2003).

Furthermore, nearly two-thirds of Virginia's counties are designated as full or partially medically underserved areas which include high populations of vulnerable populations, including individuals with LEP (Virginia Community Healthcare Association, n.d.; Health & Human



Services; n.d.). All Virginia CHCs are located in these areas (Community Health Centers, 2018). By centralizing these kiosks in these medically underserved areas, we are directly providing resources and services, through these kiosks, to areas with more individuals with LEP. Evidence also shows kiosks placed in communities increase accessibility and improve patient safety, self-management techniques, and monitoring for diseases (Letafat-nejad, et al., 2020). Since these kiosks will be concentrated in high-density LEP individuals and they directly increase accessibility to key healthcare services, ***I rank this alternative as high in equity.***

## IMPLEMENTATION TIMELINESS

This policy alternative requires federal grant funding to subsidize the costs of telehealth kiosk implementation. It usually takes up to six to twelve months for a federal grant to be approved, issued, and delivered (U.S. Grants, 2022). After grants are delivered, CHCs can begin purchasing telehealth kiosk equipment and installing them at each site. I will use Ohio's roll-out of twenty-five telehealth kiosks into RiteAid pharmacies as an example of a roll-out timeline. In July of 2015, the Cashman's company announced the roll-out of its first twenty-five telehealth kiosks in Rite Aid (Pledger, 2015) By August 2015, all telehealth kiosks were installed and in operating use (Poor, 2015). Based on this timeline, I assume that once grants are delivered, the process of purchasing and installing telehealth kiosks is about one month. In total, ***the implementation timeline for this policy alternative is about 7-13 months.***

## ADMINISTRATIVE FEASIBILITY

Telehealth kiosks are intended to address infrastructure barriers that patients may encounter that hinders their ability to use telehealth services. These barriers include lack of broadband access, digital literacy concerns related to equipment use, and actual access to technology (i.e. computer, camera, microphones, etc.) to use the services (Rodriguez et al., 2021). These barriers hinder a provider's ability to provide remote monitoring of patients. Furthermore, survey data illustrates that 78% of providers cited internet connectivity as an area needing improvement (Virginia Telehealth Network, 2021). 59% cited technical assistance as an area of improvement for patient services, and 58% cited access to devices as an area of improvement for patient services (Virginia Telehealth Network, 2021). Available technology to provide remote monitoring for patients is associated with early and real-time detection of illnesses, ability to continuously monitor patients, and prevention of other worsening illness and death among other improved health outcomes (Malasinghe et al., 2019). This is of specific concern for providers with one telehealth provider citing:

*"Some of the equipment needed for remote monitoring for some of our patients is expensive and difficult to obtain. Many of our patients with pre-existing conditions like hypertension and diabetes need blood pressure cuffs and other tools to help monitor blood oxygen levels, etc."*  
(Virginia Telehealth Network, 2021).

Telehealth kiosks are situated to address these main barriers for telehealth usage. Because more than two-thirds of providers survey data ranked internet connectivity as an issue of

concern for patient services but only between one- and two-thirds cited technical assistance and access to devices as an area of concern, ***I rank this alternative as medium-high based on this criterion's measurement metrics.***

## COST

Telehealth kiosks cost anywhere between \$15,000-\$60,000 depending on the functions chosen per the needs of the community at that site (Galewitz, 2016). The cost for all 150 Virginia CHC sites to have a telehealth kiosk is estimated to be between \$2,250,000-\$9,000,000. Each site is accompanied with a telehealth assistant. The average salary for a telehealth assistant is about \$52,871 per year (ZipRecruiter, 2021). If each site includes a telehealth assistant, the total cost to fund this position would be \$7,930,650. Therefore, ***the estimated total cost for the first year is between \$8,155,000-\$16,931,000<sup>3</sup>***. After the first year, the sunk costs of purchasing the telehealth kiosk will not be included in the cost estimates of this alternative.

## ALTERNATIVE 4: DEVELOP AND DISSEMINATE STANDARDIZED TELEHEALTH GUIDELINES FOR PATIENTS AND PROVIDERS

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This alternative would standardize telehealth guidelines across Virginia. It would require the VTN to develop and disseminate standardized telehealth guidelines for patients and providers across the Commonwealth. Per the evidence review, current telehealth practices across the state are implemented haphazardly with no universal procedures that norms the standard of care patients receive. Modeled after the efforts of Michigan Medicine in Ann Arbor, this telehealth technology plan would provide common instructions in a set of high-demand languages on how to use telehealth system, how to prepare for visits, and how to request additional information and resources prior to the visit. Additionally, it provides anticipatory guidance for providers on how they should prepare for visits with patients who have requested additional language services or are non-native speakers. Lastly, it creates a protocol for troubleshooting issues with an opportunity to conduct dry run video-conference calls to allow patients to familiarize themselves with the technology and the process. This information is provided to patients through email or over the phone prior to their visit but can also be provided during the intake process.

## EVALUATION

### EQUITY

Providers, clinicians, and researchers alike believe that healthcare systems must develop specific protocols for telemedicine visits with patients speaking non-English languages (Feiring & Westdahl, 2020; Anaya et al., 2021). This is because telehealth patients, including LEP individuals, are often unable to readily understand instructions for setting up telemedicine technology, especially when instructions are unavailable in other languages. Also, patients with LEP do not receive training to use digital health tools (Nouri et al., 2020). Language barriers

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<sup>3</sup> [2,250,000 + 7,930,000 = 8,155,650] | [9,000,000 + 7,930,650 = 16,930,650] → ***8,155,650-\$16,930,650***

persist in the hindrance of uptake of services for this population. They can be overcome through the translation of materials into non-English languages. However, LEP patients are still at risk of limited literacy in their native language and may not be able to read translated materials that have not been simplified (J Fam Pract, 1998). Therefore, clinicians and staff will also be trained to use appropriate protocols and resources to ensure that patients who communicate in non-English languages are able to access telehealth services (Shin et al., 2021). This policy requires more coordination of standardized practices for telehealth to create cohesion in practices, quality of care, and type of care provided at large. Therefore, the patient guidelines only serve to mediate some information gaps that patients, like individuals with LEP may have, but it does not directly or indirectly increase telehealth usage. Therefore, ***I rank this alternative low in equity.***

### IMPLEMENTATION TIMELINESS

Standardized policies and procedures for providers should address the following components of telehealth use and services: licensure; establishment of the physician-patient relationship; evaluation and treatment; informed consent; continuity of care; referrals for emergency services; medical records; privacy and security of the patient records and exchange of information; disclosures and functionality of online services; and prescribing (King, 2016). The Federation of State Medical Boards (FSMB) has published relevant guidelines which can be found on their [website](#)<sup>4</sup>. The implementation of standardizing these practices for providers is immediate.

Similarly, telehealth guidelines for patients have been created, as well in a variety of different languages. The University of Washington disseminated [Telehealth: Guía para el paciente](#)<sup>5</sup> (translation: Telehealth: Guide for the Patient). Similarly, the Department of Health and Human Services has developed a [website](#)<sup>6</sup> with available information for patients on how to prepare for a telehealth visit. Translated guidelines in Spanish are coming soon. Based on the availability of the information, the implementation only requires collecting and compiling this information that can then be translated. The FSMB's guidelines for providers are about 3,000 words. E-translation services cite that document between 3,000-5,000 words take about two to three days to be translated (Racoma, 2020). Using the FSMB guidelines as a baseline for the patient guidelines and length, it would only take about two to three days to translate the compiled information. Multi-language translation projects are generally translated at the same time, so the overall times are similar to single language translation projects (Pactranz, n.d.) Therefore, ***implementation for this policy is less than one month.***

### ADMINISTRATIVE FEASIBILITY

In an AARP study conducted to gauge attitudes regarding telehealth usage, nearly half of adults who are interested in using telehealth cite lack of knowledge and concerns about confidentiality and medical errors as barriers to use (AARP, 2020). Hispanic/Latino individuals

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<sup>4</sup> [https://www.fsmb.org/siteassets/advocacy/policies/fsmb\\_telemedicine\\_policy.pdf](https://www.fsmb.org/siteassets/advocacy/policies/fsmb_telemedicine_policy.pdf)

<sup>5</sup> [http://www.uwyo.edu/wind/\\_files/docs/wytn-doc/patient-guide-spanish.pdf](http://www.uwyo.edu/wind/_files/docs/wytn-doc/patient-guide-spanish.pdf)

<sup>6</sup> <https://telehealth.hhs.gov/>

were about twenty percentage points more likely to cite lack of knowledge on telehealth usage as a main barrier of use compared to white, non-Hispanic and Black individuals (AARP, 2020). Despite Hispanic/Latino individuals not comprising the entire LEP population in Virginia, they make up about half of Virginia’s LEP population. Therefore, I am assuming these sentiments to be representative of the greater LEP population, as well (CLAS, 2014). Language-concordant guidelines for telehealth patients are intended to address usage concerns and improve digital literacy for patients with LEP. Additionally, one provider noted:

*“We need education and best practices around telehealth usage in this field of work...as we are still cracking the code here.” (Virginia Telehealth Network, 2021)*

Survey results found that 64% of providers cited digital literacy as an area of improvement of patient services (Virginia Telehealth Network, 2021). Therefore, ***I rank this alternative medium in administrative feasibility.***

## **COST**

The translation of documents for the patient guidelines are the only associated costs with this policy. The average translation rate per word in the U.S. is around \$0.15 for a standard certified translation (Southeast Spanish Inc., 2022). These guidelines would be translated in the top-five most commonly spoken languages in Virginian households among individuals who self-identified as speaking English “less than very well” (i.e. LEP) on the Census. These languages include: Spanish, Korean, Chinese, Vietnamese, and Arabic (U.S. Census Bureau, 2020). To outline costs, I assume that the patient guidelines will be about 3,000 words, and we translate these documents in the top five languages spoken in Virginia. At \$0.15/word, ***the estimated cost of this policy is \$2,250.*** This is a low estimate because there is no relevant information on development of these guidelines, as they are specific to the needs of the patient communities that providers work with.

## **RECOMMENDATION**

**BASED ON MY ANALYSIS, I RECOMMEND *ALTERNATIVE #1: REMOTE INTERPRETATION AVAILABILITY AND USE AMONG ALL TELEHEALTH PROVIDERS.***

The alternative directly impacts usage rates and accessibility concerns for LEP individuals by providing language concordant care to a population whose quality of care is disproportionately hindered by language and communication barriers. Additionally, the technology and equipment necessary for the alternative to yield its expected outcomes require minimal implementation time as providers only have to connect with VRI companies to use their services. Providers in the VTN have identified relevant areas of improvement for patient services. Despite being ranked medium on administrative feasibility, a little more than one out of every three providers are not confident in their ability to provide interpretation and translation services for LEP individuals, something required by federal law. Therefore, we can expect providers within the

network to support the implementation of this policy. As outlined in the outcomes matrix (**APPENDIX C**), alternatives three and four (i.e., telehealth kiosk & standardizing telehealth guidelines) also ranked high on two out of the four alternatives. However, given resources and capacity constraints, as well as the magnitude of the direct impact on LEP patients, these alternatives did not rank as high as alternative #1.

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## IMPLEMENTATION

The implementation of this policy requires the VTN to develop an advocacy strategy to communicate its recommendation of VRI use to the providers. It will also require the VTN to outline key considerations for providers to purchase language-service technology, choose interpretation service provider, install service, and begin use.

### VTN ADVOCACY STRATEGY

Because this alternative requires the compliance of providers to best address issues of telehealth accessibility and use for LEP individuals, I recommend a backward mapping approach in constructing the VTN's advocacy strategy. Backward mapping reassigns the implementation role from policymakers (i.e. VTN) to actors closest to the problem (i.e. telehealth providers) by focusing on the last possible stage that intersects administrative actions with the private choices of providers (POAD8014, n.d.). It empowers these actors to outline the practical implementation of the policy because policymakers do not understand the complexity of the decision-making process for individual providers working in their practices.

The advocacy strategy would, therefore, begin with a statement of behavior, not intent, at the lowest level of the implementation process that generates the need for policy (POAD8014, n.d.). In this case, advocacy messaging, developed by the VTN, would outline the impacts of ad hoc interpretation use or other lackluster interpretation methods on the quality of care and patient satisfaction for LEP individuals. These advocacy messages could leverage the information outlined below to establish the messaging sent to the telehealth providers within the VTN Network:

**The use of medical interpreters in healthcare settings reduces health outcome inequalities for LEP individuals and directly impacts the quality of care they receive.**

**The potential for interpreter error and subsequent adverse health consequences is significantly lower when a professional interpreter is used.**

**Remote technology has increased patient and clinician satisfaction more than ad hoc or no interpretation.**

Additionally, the strategy would outline how this behavior is perpetuated by a lack of technological capacity, availability of interpretation services, and provider comfort in acquiring these services (Feiring & Westdahl, 2020). The advocacy messaging should be based on the power that providers have in addressing those factors that impact their behavior to improve the lack of use and accessibility of telehealth for LEP individuals.

## CONSIDERATIONS FOR TELEHEALTH PROVIDERS

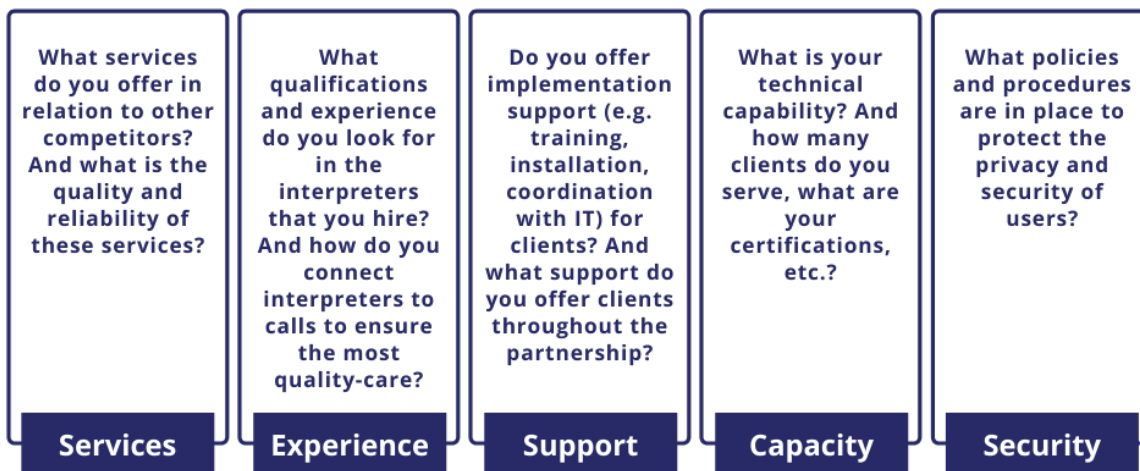
The considerations outlined below are based on information outlined by various VRI service providers like LanguageLine Solutions and Telelanguage, global leaders in video-remote interpretation for telehealth providers. Their guidelines provide information as they specify the relevant factors for telehealth providers to consider when determining the most appropriate partner.

Before selecting your video-remote interpretation partner, you must first consider:

### → *Is Your Telehealth System Compatible with VRI Language Services?*

Telehealth systems should be able to incorporate an external language program into its delivery of care to provide and abide by federal mandates requiring access to quality translation and interpretation services in healthcare. If it is not, consider additional additions or updates necessary to make your system more compliant for external language support programs.

Once compatibility is established, providers may consider the following questions when determining the appropriate interpretation partner to provide your language services. These questions are intended to highlight important elements of an effective language partner that meets the needs of individual providers. They are developed after reviewing the guides outlined in the *RELEVANT RESOURCES* section. These questions are not comprehensive, and I encourage providers to consider their own capabilities and priorities to determine relevant follow-up questions based on those priorities:





## POTENTIAL PITFALLS:

The following elements are commonly cited **healthcare provider** concerns in limitations to VRI use in clinical settings. These can be addressed by highlighting how telehealth providers can mediate these concerns in their considerations when selecting an interpretation service provider.

### → Lack of knowledge about how and when to use interpreter services

As with the introduction of any new programming, educational learning costs and overall knowledge of services is also of concern (Feiring & Westdahl, 2020). This requires understanding technology compatibility with existing infrastructure and ease of use for both patients and telehealth providers, as well as what services are provided by these interpretation service providers. Healthcare providers cite that ordering interpretation services was sometimes time-consuming and created extra work (Feiring & Westdahl, 2020). Therefore, finding an interpretation service that facilitates the process of connecting clients to relevant interpreter and language services eliminates the administrative burden for providers because the use of video interpretation was considered to lessen the practical work of ordering a personal interpreter (Feiring & Westdahl, 2020).

### → Lack of skills to navigate meaningful healthcare provider-interpreter relationships

Health providers need to be aware of their degree of comfort with the involvement of interpreters in a clinical setting and how to mediate these new relationships for the sake of the patient (Feiring & Westdahl, 2020). This is because providers are not equipped to handle a variety of different experiences with interpreters that impact quality of care. The experiences outlined in the research that providers may find hard to navigate related to the use of interpreters include:

- When interpreters act unprofessionally in a clinical setting;
- If the use of interpreters encourages a loss of intimacy and connection building between patient and provider; or
- If the interpreter now becomes the emotional support and cultural brokering intermediary, circumventing the role of the provider in the clinical setting (Brisset et al, 2013; Kale & Syed, 2010; Habziabdic et al., 2010).

These concerns have proven to foster hesitancy of systematic interpreter use in clinical settings. Therefore, addressing this potential pitfall requires choosing a language interpreter service that prioritizes strong relationships with interpreters and clients to set boundaries and explain the role of the interpreter in the clinical setting.

## RELEVANT RESOURCES:

### *Commonly Used Video Remote Interpreting Companies in the U.S.*

1. [Language Line](#)

2. [CyraCom](#)
3. [Language Services Associates](#)
4. [AMN/Stratus Language Services](#)
5. [Certified Languages International](#)

**Guides for Providers to Use in Considering Interpretation Providers:**

1. [The Vital Role of Language Access in Telehealth](#)
2. [5 Critical Criteria for Selecting Your On-Demand Interpreting Partner](#)
3. [Language Access in Healthcare](#)

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**CONCLUSION**

Our current healthcare system infrastructure is exacerbating health disparities among racial and ethnic minorities. Specifically, language proficiency has become a determining factor in the quality of care individuals receive and their overall satisfaction with care. As a result, individuals with LEP receive less than quality care and have worse health outcomes than English-speaking patients. These effects are compounded within the telehealth space; few digital health tools and telehealth infrastructure at large consider English proficiency in their design and delivery. Therefore, too few individuals with LEP have access to and use telehealth services in Virginia.

To address this issue, I recommend that the VTN advocate for video-remote interpretation (VRI) availability and use among all telehealth providers. This recommendation is made given the importance of language concordance and interpreter availability for non-English speaking patients in healthcare. VRI positively impacts telehealth usage rates and accessibility concerns for LEP individuals by providing culturally competent language services at low costs to providers. This is especially relevant given growing healthcare inaccessibility for individuals with LEP in Virginia and across the nation. Additionally, VRI allows for effective and timely healthcare intervention in the midst of a global health pandemic in which telehealth has become a necessity to receive care.



## APPENDIX

### APPENDIX A. COSTS TO SOCIETY

I have outlined the estimated cost to society if the problem identified is left unaddressed. These costs were estimated based on expected direct costs, externalities, and opportunity costs of not increasing accessibility and use of telehealth services for individuals with LEP. I compare costs of telehealth versus costs of in-person visits to illustrate these costs to capture this estimate. Overall, the estimated cost to society of not addressing telehealth accessibility for Individuals with LEP is estimated to be **\$29,261,600 - \$109,308,580**.

#### DIRECT COSTS

##### ***Costs of telehealth primary care visits (patient)***

I have estimated the cost of a telehealth primary care visit for the patient using the average cost of online telehealth visit and internet service per year. The average cost of a telehealth visit is estimated to be between \$40-50 (Ashwood et al., 2017). Additionally, internet service per month ranges from \$20-40 a month (Allconnect, 2020). Expanding telehealth capacity requires primary care service equipment, a telehealth communication platform, and professional training for staff. Respectively, these costs are estimated to be \$5,000-\$10,000, \$10,000 per patient site, and \$200-\$2,000 per site (AMD Global Telemedicine, 2015). Therefore, the estimated cost to providers for telehealth primary care visits per telehealth site is between \$15,020-\$22,000. Lastly, medical translation services include in-person interpreters, telephone interpreters, and video-remote interpreters. In-person interpreters make about \$0.75-\$2.50/minute. Telephone interpreters make \$1.25-\$3.00/minute, and video-remote interpreters make \$1.95-\$3.49/minute. On average, individuals spend about 123 minutes obtaining medical care, 86 of which are actual clinic time where an individual meets with a physician (Ray et al., 2015). Therefore, translation services can vary between \$64.50-\$215 for in-person interpreters, \$107.50-\$258 for telephone interpreters, and \$167.7-\$300.14 for video-remote interpreters per visit of foreign-born individual with LEP. For all foreign-born individuals with LEP, it's about \$14,835,000-\$49,450,000 for in-person interpreters, \$24,725,000-\$59,340,000 for telephone interpreters, or \$38,571,000-\$69,032,200 for video-remote interpreters. Depending on the insurance status of the patient, these costs can fall either on the patient or the provider. If we assume that all insured, foreign-born individuals with LEP use telehealth services, I estimate the cost of telehealth primary care visits for the patient to be about \$28,650,020-\$89,754,200.

##### ***Cost of In-person primary care visit (patient)***

Virginia health information estimates an office visit with a physician to be about \$86 per visit (Virginia Health Information, 2020). Therefore, the cost of insured foreign-born individuals with limited English proficiency for in-person primary care visits is about \$19,780,000. In addition,

we must consider the direct transportation costs. The average individual travels approximately 37 minutes which translates into \$13 (Ashwood et al., 2017). Therefore, for about 230,000 insured foreign-born individuals, the cost of transportation to in-person primary care visits are around \$2,990,000. We must also take into account interpretation and translation services; the costs are about \$14,835,000-\$49,450,000 for in-person interpreters, \$24,725,000-\$59,340,000 for telephone interpreters, or \$38,571,000-\$69,032,200 for video-remote interpreters. The total costs of in-person primary care visits for insured foreign-born individuals is between \$37,605,000-\$91,802,200.

Total direct costs for telehealth visits, equipment, and translation services are between \$28,650,020-\$89,754,200. However, this estimate does include one-time investments in telehealth equipment that are not consistent direct costs associated with the problem defined. This is compared to total direct costs for in-person health services, cost of transportation, and translation services is about \$37,605,000-\$91,802,200. ***The resulting difference in these costs is between \$2,048,000-\$8,954,980.***

## EXTERNALITIES

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### ***Cost of transportation emissions***

On average, the number of miles being driven to the hospital for emergency care is about 10 miles (Lam et al., 2018). According to the EPA, a vehicle emits about 404 grams of CO<sub>2</sub> per mile. On average 4040 grams (0.0044 tons) of CO<sub>2</sub> emitted per in-person hospital visit. At a cost on the health and lifestyle of \$50 per ton of carbon, it costs about \$.22 to offset each trip to the hospital. For all insured foreign-born individuals with LEP, it would create \$50,600 to offset the cost of transportation emissions. ***Total externalities cost amount to \$50,600.***

## OPPORTUNITY COSTS

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### ***Value of lost time at work due to hospital visits***

On average, individuals spend about 123 minutes (2.05 hours) obtaining medical care (Ray et al., 2015). In 2020, median usual weekly earnings of foreign-born full-time wage and salary workers was about \$885. This amounts to about an average wage of \$22/hour. Therefore, there is an estimated loss of wages of \$45.1 for each individual. Across all insured foreign-born individuals with limited English proficiency, that is about \$10,373,000 in lost wages. Additionally, this can also be viewed as another opportunity cost as this money cannot be not reinvested into the state economy for greater economic growth and success.

### ***Value of money spent on transportation***

The average individual travels approximately 37 minutes which translates to approximately \$13 in gas (Ashwood et al., 2017). Therefore, for about 230,000 insured foreign-born individuals, the cost of transportation to in-person primary care visits are around \$2,990,000. This can be used as the value of money spent on transportation that cannot be used on other costs these individuals might face.

***Value of individuals that do not receive care due to lack of telehealth access***

If all 230,000 insured foreign-born individuals do not have access to telehealth services -- and subsequently the primary delivery form of healthcare services during a pandemic -- then they cannot be productive members of their communities and fully participate in the workplace. Unemployment benefits in Virginia range between \$60-\$378 per week (Virginia Employment Commission, 2016). If this subset population is not healthy enough to be employed, this can cost about \$13,800,000-\$89,940,000 for about 230,000 insured foreign-born individuals if they all do not have access to the healthcare they need.

***Total potential opportunity costs are about \$27,163,000-\$100,303,000.***

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OVERALL, TOTAL COSTS TO SOCIETY ARE BETWEEN ***\$29,261,600 - \$109,308,580.***

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## APPENDIX B. GOVERNANCE & JURISDICTION

### LEGAL FRAMEWORK FOR LANGUAGE ACCESS IN HEALTHCARE

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#### FEDERAL-LEVEL

Under Title VI of the Civil Rights Act, all federally-funded programs like Medicaid, Medicare, and CHIP must provide interpretation services for individuals (Slade & Sergeant, 2018). Specifically, section 1557 of the Affordable Care Act requires all healthcare providers to provide LEP patients with a qualified interpreter. Healthcare systems and professionals, specifically, are legally required to provide equal and comprehensive treatment to all individuals regardless of language proficiency (Chen et al., 2007). Lastly, Executive Order 13166, signed by President Bill Clinton, requires all federal agencies to examine the services they provide and develop systems to ensure individuals with LEP can meaningfully access these services (E.O. 13166, 2000). These are the federal frameworks in place to protect and enable individuals with LEP to access all services provided by the federal government. The ambiguity arises in the extent of their legal obligations to provide comprehensive and culturally-competent language services in conjunction with their delivery of care. Because language services are not considered mandatory services under federal law, states must assume the financial and administrative burden to provide these services.

#### *Jurisdiction*

The Department of Health and Human Services (HHS) dictates the standards of practice for LEP patients that healthcare professionals must abide by; all providers who receive federal funds from HHS are obligated to provide language services for LEP patients. Compliance is enforced through federal funding. The Center for Medicare and Medicaid Services (CMS) sets reimbursement rates for state-provided healthcare services. Currently, it reimburses interpretation and translation activities at a 50 percent federal matching rate covered under administrative expenses (Medicaid, n.d.). Together, the HHS and the CMS establish the regulations and guidelines states must abide by to adequately provide healthcare services for non-native English speakers.

#### STATE-LEVEL

The majority of states have enacted their own laws addressing language barriers in clinical settings (Perkins, 2003). However, states are not required to reimburse providers for interpretation or language services. This has created a haphazard patchwork of state-led legislation where LEP individuals' experiences can vary drastically across state lines. Fortunately, Virginia has enacted various provisions to protect LEP individuals and regulate language practices in healthcare; as of 2018, Virginia had over twenty-one provisions compared to other neighboring states like WV, TN, KY, and NC who have fewer (Youdelman, 2019). The outlined provisions implemented in Virginia include variations of the following:

- All public health information and relevant documents must be translated to ensure full knowledge and consent of patient;

- Interpreter services must be provided across various medical and legal contexts; and
- Health treatment plans, discharge status, and relevant health policies and procedures must be communicated in culturally and linguistically appropriate manners (Youdelman, 2019).

In 2019, Governor Northam signed Executive Director 5: Access to Affordable, Quality Health Care Coverage. In collaboration with the Secretaries of Finance and Public Safety and Homeland Security, the Secretary of Health and Human Resources was directed to review current policies and devise a plan to promote greater access to individuals with LEP to access and enroll in health insurance coverage (Executive Directive 5, 2019). These initiatives were implemented to ensure meaningful access to healthcare for non-native English speakers.

### ***Jurisdiction***

The Virginia Department of Health sets the protocols and regulations with regards to delivery of care for patients with LEP. They conduct an annual Language Needs Assessment Report to identify and report LEP populations to local health districts. This data informs the practices and guidelines they recommend to local health districts. Additionally, the governor's Office of Diversity, Equity, and Inclusion conducts investigations to construct reports on the quality of services that state government agencies and groups provide individuals with LEP. Lastly, the Department of Medical Assistance Services (DMAS) create Language and Disability Access Plans to identify measures and implement quality and accessible healthcare services. Additionally, they are the single state agency that administers Virginia's Medicaid and CHIP programs. Ultimately, the burden of providing interpretation and translation services in clinical settings falls generally on healthcare providers. Because they assume most of the costs of interpretation and translation services, they rely on ad hoc services (i.e. friends, family members, other co-workers) that can impact the quality of care LEP individuals receive.

## **LEGAL FRAMEWORK FOR TELEHEALTH ACCESSIBILITY**

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### **FEDERAL-LEVEL**

Historically, federal laws have regulated telehealth initiatives within the Medicare program (Lee et al., 2020). Previously, telehealth laws created parity in coverage services and payments of telehealth services. Additionally, they imposed strict limitations on what services can be covered and provided based on geographic location and licensing requirements. Federal regulators temporarily laxed telehealth regulations on a temporary basis for all Medicare-paid visits at the onset of the pandemic. This includes more expansive payment and platform options to offset the financial and regulatory barriers that may impede delivery of care as a result of COVID-19. As the public health emergency declaration is expected to end in 2022, these provisions that expanded telehealth accessibility are at risk of ending. Current reimbursement rates for telehealth services will be reverted to original rates, patients using telehealth services will be required to have in-person visits six months after telehealth visit, and Congress's payment cuts will significantly affect telehealth providers (American Psychological Association, 2021).

### ***Jurisdiction***

CMS sets the federal standard reimbursement rates for telehealth services. Additionally, the Health Resources and Services Administration (HRSA) creates programs that provide healthcare to vulnerable populations. This agency is housed under HHS; it supports the training of health professionals and develops guidelines for equitable health care delivery models.

### **STATE-LEVEL**

In conjunction with expanding telehealth capabilities outlined in the problem overview section, Governor Northam allocated \$30 million provided by the Coronavirus Aid, Recovery, and Economic Security (CARES) Act to various broadband initiatives. These initiatives include: improving current infrastructure, mandating minimums for broadband speed, expediting the permitting process for broadband providers, and expanding broadband infrastructure to underserved areas (Wit & Read, 2021). The Infrastructure Investment and Jobs Act that passed in November 2021 has allocated over \$65 billion for improving internet access (Willcox, 2021). This funding will be necessary for states to spearhead broadband expansion efforts without assuming astronomical costs.

### ***Jurisdiction***

Again, the Virginia Department of Health (VDH) is responsible for regulating and implementing telehealth initiatives in Virginia. It develops the state health plan intended promote strategies to expand telehealth services in the Commonwealth. In conjunction with the VDH, the Virginia Department of Education, Virginia Department of Behavioral Health and Development Services, and Virginia Regional Emergency Medical Service Councils collaborate to create informed and collaborative strategies to expand telehealth services across the Commonwealth. Furthermore, the Virginia General Assembly and local governments facilitate broadband infrastructure expansion. Federal grants are allocated to the state which are then disseminated across local governments to improve accessibility and broadband capacity of different regions across the Commonwealth.

## APPENDIX C. OUTCOMES MATRIX

Below is the outcomes matrix based on the analysis conducted under the alternative section. I have outlined four alternatives; any alternative color coded green ranked **high** on that criterion, any alternative color-coded red ranked **low** on that criterion, and any alternative color-coded yellow ranked **medium** on that criterion. For the cost criterion, alternatives whose expected costs were not the highest or lowest estimated cost were ranked medium.

		<u>Criteria</u>			
		<b>Equity</b> <i>(Low; medium; high)</i>	<b>Implementation Timeliness</b> <i>(# of months)</i>	<b>Administrative Feasibility</b> <i>(Low; medium; high)</i>	<b>Cost</b> <i>(U\$D rounded up to the thousand)</i>
<u>Alternatives</u>	<b><u>Alternative 1:</u></b> <b>Advocate for VRI Use</b>	High	< 1 Month	Medium	\$215,000 - \$756,000
	<b><u>Alternative 2:</u></b> <b>Develop Cultural Competency Training</b>	Medium	13 Months	Low	\$1,283,000
	<b><u>Alternative 3:</u></b> <b>Advocate for Telehealth Kiosks Use in CHC</b>	High	7-13 Months	Medium-High	\$8,156,000 - \$17,000, 000
	<b><u>Alternative 4:</u></b> <b>Develop Standardized Guidelines for Telehealth Patients and Providers</b>	Low	< 1 Month	Medium	\$2,300

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