

# **Improving Community-Wide Utilization of Primary Care Services in the Thomas Jefferson Health District**

**Spring 2019 Applied Policy Project  
Prepared for the Charlottesville Free Clinic**



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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, the University, or any other agency.

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## Honor Statement

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



Care Shoaibi

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## I. Executive Summary

In May 2018, the state of Virginia passed a budget to authorize the expansion of Medicaid, which took place in January 2019. Medicaid expansion has broadened eligibility to include adults ages 19-64 whose incomes fall within 138 percent of the federal poverty line. With Virginia's expansion of Medicaid, health coverage has broadened to include an additional 400,000 people across the state. But, even with Medicaid expansion, there is still a coverage gap—in the Charlottesville-Albemarle region 7,000 people remain uninsured.

With the expansion of Medicaid, the Charlottesville Free Clinic (CFC) fundamentally changed too. A large portion of a clinic's patient base is now eligible for Medicaid—and as such, this large portion of their patient base is stripped away, leaving them with a much greater capacity to serve their surrounding community that they did not previously have.

**Problem Statement:** With Virginia's Medicaid expansion, roughly 40 percent (400) patients who formerly relied on the Charlottesville Free Clinic for primary medical care will transition to Medicaid. Given this transition, the CFC has the capacity to improve their community penetration, increasing the take-up rate of their services to alleviate the burden on emergency departments and to better address health needs of the community.

This report details four possible approaches in response to this policy problem. The first option is to let present trends continue, while distributing a survey to clinic patients to get more information about why and how people access the clinic. The second option is patient navigation, which would entail hiring a set of patient navigators to work directly with patients to overcome a variety of access barriers. The third option is hospital emergency department (ED) education, including the creation and distribution of CFC pamphlets at the University of Virginia (UVA) ED and a facilitated conversation between an ED nurse and patient about the CFC. The fourth option is volunteer representatives, which would require recruiting and training a set of CFC volunteers to directly reach underserved neighborhoods via community meetings and forums.

The policy alternatives are evaluated with a set of five criteria: increase in take-up rate, administrative feasibility, equity, cost-effectiveness, and relevance to the Charlottesville-Albemarle community.

The CFC should pursue Option 3, Hospital Emergency Department Education. This option directly targets a population of people in Charlottesville-Albemarle that could benefit from using the CFC. It promotes collaboration among major institutions in the Charlottesville health care landscape to address the main barriers that prevent clinic utilization. The administrative feasibility of this option, with its relative certainty in take-up rate and cost-effectiveness as compared to the other options, makes it the most viable choice.

The CFC could begin implementation of this option by first hosting a planning meeting with the UVA hospital to get approval for pamphlet distribution and nurse involvement. The CFC could then determine the main messages that should be communicated in each meeting between nurse and patient, and structure a basic training based off of these messages. Approval, design, and training can be completed in the span of three to five months.

## II. Introduction and Problem Definition

### Background

*"I came to the conclusion that 'no' just wasn't the answer anymore, that doing nothing about the medical conditions, the state of health care in my district, just wasn't the answer any longer."*

This is a quote from Virginia Senator Ben Chafin, one of the four Republican senators who ultimately voted for Medicaid expansion in a highly contested legislative battle (Hohmann, 2018). The Patient Protection and Affordable Care Act (ACA) allowed states the option to expand Medicaid services to include (1) adults under the age of 65 who earn below 138% of the federal poverty line and (2) working families who earn between 100% and 400% of the federal poverty line (Birs et al., 2016). When Governor Terry McAuliffe took office in January 2014, one of his top priorities was to expand Medicaid in the Commonwealth of Virginia. Four years later in May 2018, the state of Virginia passed a budget to authorize the expansion of Medicaid, joining 32 other states and the District of Columbia.

Virginia Medicaid expansion took place in January 2019, contingent on the implementation of a work requirement that would take effect sometime in the following months, though the date of implementation has not been determined (Norris, 2018). Medicaid expansion will broaden eligibility to include adults ages 19-64 whose incomes fall within 138% of the federal poverty line (e.g. \$16,754 for a single adult or \$28,677 for a family of three) (VA Free Clinics, n.d.). With Virginia's expansion of Medicaid, health coverage has broadened to include an additional 400,000 people across the state.

Figure 1: Results of Virginia Medicaid Expansion

<b>Virginia</b>		<b>has</b>	<b>accepted federal Medicaid expansion</b>
	<b>1,032,764</b>	Number of people covered by Medicaid/CHIP as of July 2018	
	<b>423,000</b>	Number of additional people expected to be covered	
	<b>138,000</b>	Number of people who would otherwise have had NO access to coverage	
<b>health insurance .org</b>	<b>\$22.8 billion</b>	Because Virginia is expanding Medicaid, the state will receive \$22.8 billion in additional federal funding over the next decade	

Source: <https://www.healthinsurance.org/virginia-medicaid/>

However, plenty of places in Virginia (especially rural areas) continue to face an access challenge (Burke, 2018). Even with the expansion, an estimated 300,000 Virginians will remain uninsured, caught in the remaining insurance gap. These Virginians are forced to either live without primary care, rely on expensive and inefficient emergency department services, or utilize the traditional health care safety net. The latter option, utilizing free clinic services, is the ideal

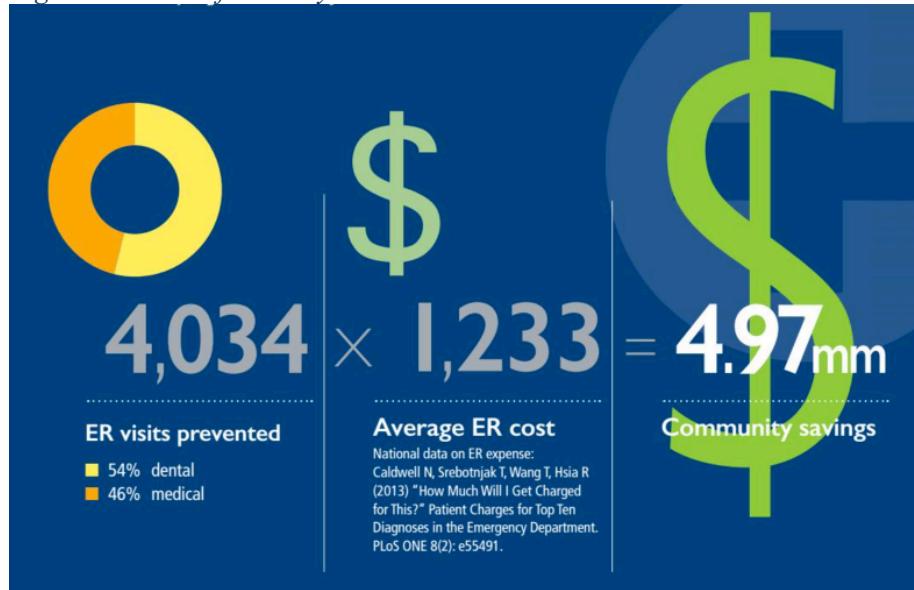
policy outcome in order to promote community health while containing costs. Essentially, where Medicaid stops, free clinics begin (Garner, 2016).

Free clinics are facilities that serve as health care safety nets, increasing access to medical care for underserved communities (VanderWielen et al., 2015). According to the National Association of Free and Charitable Clinics (NAFCC), there are approximately 1,200 free and charitable clinics nationwide. The Virginia Association of Free and Charitable Clinics (VAFCC) operates in the state to provide support and advocacy for Virginia charitable clinics ("About Us," n.d.). Virginia currently has 60 free health clinics that serve 60,000 uninsured people (Galuszka, 2018).

#### *Local Context: The Charlottesville Free Clinic*

The Charlottesville Free Clinic is a 501 (c)(3) organization with the mission to 1) provide a volunteer community health-support system that offers high-quality health care to the working underserved population, which would otherwise have no access to care, 2) provide practical experience for current and future health care professionals, and 3) hasten, through education and advocacy, the creation of a comprehensive policy for access to health care ("About Us," 2015). Because of the work of the Charlottesville Free Clinic, the community experiences significant savings from prevented emergency department visits by promoting public health and serving as a critical part of the community's health care safety net.

*Figure 2: Value of Primary Care at the Charlottesville Free Clinic*



Source: Charlottesville Free Clinic 2018 Annual Report

The CFC is funded by private contributions (57%), funding from the state (16%), locality funding (14%), revenue from special events (10%), and other income sources (3%) ("Who, What, and How," 2018).

Although a majority of CFC patients are from the Charlottesville-Albemarle area, the CFC serves the entire Thomas Jefferson Health District. This includes Louisa County, Greene County, Fluvanna County, and Nelson County. In 2018, 75 percent of CFC patients came from the

Charlottesville-Albemarle area, while the remaining 25 percent came from local counties in the surrounding health district.

### *Problem Definition*

People who do not access a primary care provider either because of lack of insurance or other access barriers are more likely to seek emergency department care for nonmedical emergencies. Most uninsured patients report that if free clinics were not available, they would either not seek medical care or would use the emergency department, which have high costs for the medical facility and for the patient (Birs et al., 2016). They are also more likely to delay getting care, which worsens health conditions as they continue to deteriorate. Furthermore, uninsured patients who do not use emergency room care have no option but to live without primary care and suffer from preventable health problems.

This problem has taken root in the Thomas Jefferson Health District. Up to this point, the Charlottesville Free Clinic had been operating at capacity, only serving one-fifth of the uninsured population in the Charlottesville-Albemarle region. The University of Virginia Health System has a portion of funding dedicated to indigent care, and there is a perceived culture of high emergency department use in Charlottesville-Albemarle because of the resources at the University of Virginia Hospital (C. Keller, personal communication, February 25, 2019). Uninsured and under-insured residents who do not access the CFC either rely on these emergency department services, or do not access primary care until health conditions become extremely acute.

About 5,000 Charlottesville and Albemarle residents who are currently uninsured will gain Medicaid coverage with the state's Medicaid expansion, but 7,000 will remain uninsured (Virginia Health Care Foundation, n.d.).<sup>1</sup> Now that the CFC has a greater capacity to serve the community with a majority of its former patients transitioning to Medicaid, there is an opportunity to increase free clinic utilization among current emergency department patients while also increasing community penetration in areas that the CFC has yet to reach. The Virginia Association of Free and Charitable Clinics has advised affiliated clinics to adapt their operating practices to this new health care landscape, given that Medicaid expansion is radically changing their patient base. Clinics that have failed to plan or take any commensurate action run the risk of operating under capacity (K. Zapach, personal communication, April 4, 2019).

**With Virginia's Medicaid expansion, roughly 40 percent (400) patients who formerly relied on the Charlottesville Free Clinic for primary medical care will transition to Medicaid, and only 60 percent of the clinic's current patients will continue to utilize the CFC as their main source of primary medical care. Given this transition, the CFC has the capacity to improve their community penetration, increasing the take-up rate of their services to alleviate the burden on emergency departments and to better address health needs of the community.**

Several questions need to be addressed in order to properly and fully meet the CFC's new capacity to serve the community. What are barriers that might prevent current emergency room

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<sup>1</sup> There are no accessible data on the income level of frequent UVA emergency department users, which limits our knowledge of exactly how many uninsured patients are compensated by UVA's funds (C. Keller, personal communication, April 4, 2019).

users to transition to using free clinic services instead? For uninsured patients who weren't accessing primary care in the first place, what are barriers that might prevent them from using a free clinic even with greater capacity? The goal of the following section is to begin to address these questions to inform the CFC's potential policy alternatives and criteria.

### III. Literature Review

The U.S. health care system currently faces disparities in access based on a number of determining factors, including race/ethnicity and socioeconomic status, geographic access to care, and health insurance status (VanderWielen et al., 2015). Common barriers to free clinic access for eligible patients include affordable housing, transportation, medication, and accessible information (Birs et al., 2016). This literature review attempts to identify strategies for diagnosing barriers and evaluating potential policy options. Relevant studies are often, unsurprisingly, conducted in free clinic settings through survey designs to identify and respond to patient access and utilization barriers. Beyond free clinics, this review also incorporates studies in other health agencies such as fertility clinics and in other low-income health care programs such as coordinated safety nets. Support for free clinics and their amount of financial flexibility is critical for determining feasibility of policy interventions, and as such, a review of government support of free clinics is included.

#### *Government Support of Free Clinics*

Government funding is an important source of revenue for free clinics, though they operate primarily as privately funded organizations. A health policy report by Chang et. al. defended the importance of government support of free clinics to retain new patients and attract new ones, particularly when new policy changes call for the transformation of the safety-net delivery system. The researchers believe that "the ability to respond to the evolving policy milieu often depends on local factors such as the stability of funding sources, a political commitment to safety-net systems, and the competitiveness of the market for health care services." As a specific example of successful policy model, the researchers refer to a study of Hennepin Health in Minnesota, a safety-net accountable care organization that combined medical care with the delivery of social services such as housing support and vocational counseling (Chokshi, 2017). This collaborative model showed favorable results in managing cost and quality outcomes of a small Medicaid population, suggesting that greater integration among city and state agencies in addressing health outcomes could lead to favorable results.

Another study found that it could be effective for free clinics to solicit private sources of funding—a potential argument against increased government financial support for free clinics. The study, published by Birs et al. in 2016, explored ways to improve patient experience and incentivize greater use of care. They found through their survey results that most patients actually supported the implementation of a facility fee. In fact, patients who believed a facility fee was appropriate also felt more encouraged to be involved in their care (Birs et al, 2016). In terms of patient attitudes and perception of care, less government involvement and more of a private business model could prove effective.

#### *Diagnosing Barriers and Evaluating Interventions*

Studies of free clinics have used survey designs to learn more about the patient experience, and therefore tailor interventions to respond to the identified concerns. Patient satisfaction at free

clinics is generally poorly understood, and to address this knowledge gap, a study published in 2014 by Kamimura et al. examined patients' satisfaction in order to improve perception and engagement with free clinic services. This survey-design studied a plethora of different factors that could affect the patient experience, particularly interpreter services, language proficiency, and health status. Overall, native English speakers were less satisfied with health care services compared to non-native English speakers and Spanish speakers. Participants also responded to open-ended questions frequently showing interest in more specialty care such as dental care, mental health services, and women's health services. The results also suggest that simply improving services or communication with patients may not improve patient satisfaction, especially if patient satisfaction is related to disease-specific factors or patient characteristics (Kamimura et al., 2014). Although a survey design poses concerns about inaccurate self-reporting, the takeaways from this survey are helpful to begin to question assumptions about the most important factors in patient utilization of free clinic services.

Birs et al. (2016), as described in the "Government Support" of this literature review, also identified strategies to improve engagement among current and potential patients at free clinics across the US. The researchers used an anonymous survey design of patients in a Florida clinic, all of whom are below 200% of the FPL. In addition to the rather surprising finding that patient compliance and engagement actually increased with a facility fee, this study identified other major facets to improve patient compliance and engagement, including continuity of medical care and faith-based care. In order to improve medical care in this uninsured population, they recommend the following four strategies: 1) offering continuity of medical care; 2) offering affordable and preventive medicine; 3) supporting affordable transportation, housing, and medicine; and 4) adopting a facility fee to bolster patient compliance and ownership of healthcare (Birs et al., 2016). The common concerns of survey-based designs apply to this study, but this study does offer new potential solutions to improve patient engagement beyond those identified in previous studies.

Policymakers have also considered providing quality information through provider report cards to increase utilization of medical services. To evaluate this option, a 2009 study by Bundorf et al. examined the effect of publically providing quality information about fertility clinics on consumer choice when choosing a health care provider. The researchers measured utilization of clinics in a public-reporting period, as compared to a non-reporting period. The most relevant finding was that the public dissemination of a clinic's report card had an independent and statistically significant effect on consumer choice (Bundorf et al., 2009). However, this study looked at consumers choosing among a number of clinics, not at the independent consumer choice of deciding to seek care in the first place. Because the CFC is the only free clinic that is accessible for many people in the Charlottesville-Albemarle area, it is possible that quality information is irrelevant for incentivizing uninsured persons to visit the clinic. More effective interventions could be personal referrals or individualized outreach.

Free clinics have also attempted to use routine free clinic visits by uninsured patients as an opportunity for health literacy education. If a barrier to clinic access is a lack of understanding about the importance of primary care, then educational interventions could be relevant. A study by Petrany & Christiansen in 2014 investigated how a short educational video screening to 100 uninsured free clinic patients could improve their knowledge about the ACA. The study

participants showed significant improvement in their understanding, based on the results of their before-and-after surveys, as a result of the video screening (Petrany & Christiansen, 2014). Although this study evaluated ACA knowledge with a relatively small sample size, the results suggest that free clinics are in a unique position to improve health literacy. Improving health literacy can help to incentivize patients to use primary care services, if the original barrier preventing their utilization in the first place was a lack of proper knowledge or understanding of the benefits. Free clinics could use these kinds of educational interventions as an opportunity to encourage wider use of their primary care services, especially for patients that are only coming in for a dental visit or one-time visit. Based on the external validity of this study, educational interventions could also prove to be successful in community settings or in hospital emergency departments to improve health literacy.

As a more integrated approach to increase free clinic utilization to address a number of potential barriers to take-up, coordinated care models are another possible policy option to improve health care access. A case study of Project Access-New Haven (PA-NH) by Spatz et al. looked at ways to expand the safety net of specialty care for the uninsured. PA-NH is a network of specialists and hospitals coordinating care through the use of designated patient navigators, and the researchers aimed to identify elements of implementation that could be relevant for other communities to improve access for underserved populations. Through methods such as in-depth interviews, site visits, and patient surveys, the researchers found that the core principles of community-based participatory research (CBPR) were essential for PA-NH to respond to potential access barriers and implement a navigated care model for the uninsured (Spatz et al., 2012). Although this was a single-location case study, the researchers intentionally used overarching concepts to drive engagement, improving the study's generalizability. This study also focuses on collaborative partnerships to increase access to specialty care, but because communication with primary care providers is integral to patient navigation programs, the effective interventions in this study could generalize to improve primary care access in other communities. In terms of the problem at hand in Charlottesville, this kind of intervention could address a number of potential access problems that might hinder patients to access the CFC, including administrative difficulties for patients, lack of understanding among community residents, and other barriers.

### *Possible Approaches for the CFC*

The literature suggests that there is no singular factor inhibiting utilization of free clinics, but rather a combination of factors such as language barriers, the desire for more specialty care, housing and transportation concerns, and lack of health literacy. This reality leaves a lot of room for individual clinics to identify the main barrier facing their community and work to address that concern as a main priority.

If the main barrier to free clinic take-up in Charlottesville is the lack of understanding about the importance of primary care, then the CFC could tailor interventions directly to this lack of knowledge. To address health literacy, the CFC could consider using an educational intervention for people who visit the clinic to encourage the importance of consistent primary care, and also the importance of promoting primary care utilization in your community. Based on the Kamimura study, patients benefit from educational interventions during free clinic visits, and this could be used as a tool to influence perceptions of care. Arguably, this change in perception

could help to encourage potential patients to utilize more primary care services and change the culture surrounding primary care use. Again, this is contingent on the main barrier in Charlottesville being a lack of understanding about primary care, or general apathy about its importance.

On a larger scale, the CFC could consider the recruitment and utilization of “patient navigators,” that are present in coordinated care models. The barriers to free clinic access are intertwined with the community landscape, economic barriers, and knowledge gaps, and strategic partnerships that focus on community development could prove to be a more holistic approach. Additionally, it is questionable whether the CFC will be able to isolate the main barrier in access, and coordinated care models seem to be promising in other similar contexts.

As a more intermediate option, the CFC could conduct a patient satisfaction survey in this first year of Medicaid expansion. Although there are factors that could be inhibiting or discouraging access to the free clinic, which have been explored in other studies, the common method of a patient survey could be useful to gather data that is more individualized to the CFC. A larger, more sustained intervention could then be launched in following years.

#### IV. Policy Alternatives

##### **Option 1: Let present trends continue.**

*Delay the implementation of any direct intervention, but instead distribute a patient satisfaction survey to identify potential shortcomings in CFC services before launching an initiative to increase take-up rates.*

This option is equivalent to the status quo, or allowing the CFC to continue to operate as usual and monitoring the utilization of services by the community. The Virginia health care safety net is undergoing a major change in 2019, as thousands of residents are now eligible for Medicaid. As such, it is necessary to consider the option of allowing this transition to fully occur before making any changes to try to increase take-up rates in an equitable, efficient way. For the next 6 months to a year, the CFC could monitor the changes in their patient base. This would include tracking how many new patients visit the clinic for a primary care visit, how many new clinic patients previously relied on the emergency room, and how many new patients never accessed primary care services prior to their visit. This kind of monitoring would help the CFC to determine whether an intervention is necessary, and how involved an intervention needs to be. This option does run the risk of failing to meet the free clinic’s new capacity, which has implications for profitability and overall impact in the Charlottesville area.

Additionally, while this option would delay any immediate intervention to increase take-up rates for the free clinic services, it would also focus on gathering data on patient experience at the CFC to understand what motivated patients to come in the first place. Many studies in the literature on health care safety nets use this type of intervention to identify unique barriers facing the community. This option would allow for the CFC to take a more tailored approach to increase take-up rates in the future, perhaps after 6-12 months of gathering data. A robust survey design could help the CFC identify barriers and the best ways to dismantle them. The survey could ask about how the patient heard about the free clinic, how many people in their

neighborhood use the free clinic, how often do they talk about health and primary care, their mode of transportation to the free clinic, etc.

### **Option 2: Patient Navigation.**

*Hire a new set of CFC staff to serve as patient navigators, similar to those in a coordinated care model, to directly connect with patients to overcome access barriers.*

In Charlottesville, the health department has hosted trainings for community health workers, which are akin to patient navigators in the kinds of models such as Project Access-New Haven. However, this Charlottesville training program has failed to make much of an impact because community health workers in Charlottesville have never been paid, and paying these workers would presumably help incentivize this work. Also, because the CFC had been operating at capacity, clinic executives and community leaders have not looked into options for implementing the kinds of coordinated care models that have shown to be successful in similar settings. The University of Virginia has begun to look into an investment in neighborhood health workers to help people find the right health care option, but there has yet to be significant mobilization in this area (C. Keller, personal communication, February 25, 2019).

This option would model the system that was implemented in Project Access-New Haven, where a network of hospitals and specialists instituted a coordinated care model to improve the specialty care safety net. A coordinated care model rests on the use of patient navigation. Patient navigators “help patients to (1) schedule medical appointments and tests; (2) access free or discounted prescription medication; (3) negotiate language and literacy barriers; and (4) connect with health-related resources.” This option would require hiring a set of patient navigators, or increasing the workload of existing CFC employees. Patient navigation is a tested model from which the CFC could build a neighborhood health worker program. Essentially, this option would mobilize on the neighborhood health worker option that the University of Virginia has begun to consider by rooting the intervention in relevant patient navigation literature that has proven to be effective in other areas.

### **Option 3: Hospital Emergency Department (ED) Education.**

*Distribute pamphlets at the UVA Hospital Emergency Department with information about the free clinic, and coordinate trainings for ED nurses to have conversations with patients at the time of hospital discharge to encourage free clinic use.*

This option is focused primarily on addressing the utilization of emergency department services in the Charlottesville-Albemarle area. It is based on the idea of increased partnership and collaboration between the UVA hospital and the CFC. UVA patients would be more informed of the options available to them, and the hospital and the clinic would be working together to lower health care costs and promote community health. The CFC would commission the creation of a pamphlet with easy-to-read, digestible information about the clinic, eligibility, hours of operation, and reasons why the CFC is a good choice for the patient’s health.

This educational intervention would also be supplemented with brief and informative conversations between emergency department nurses and patients at the time of discharge. Nurses at the UVA ED would go through a brief training to prepare them for facilitating this kind of conversation with individual patients. The design of this alternative is based off of a similar intervention conducted in Columbia, South Carolina, where ED staff nurses facilitated a

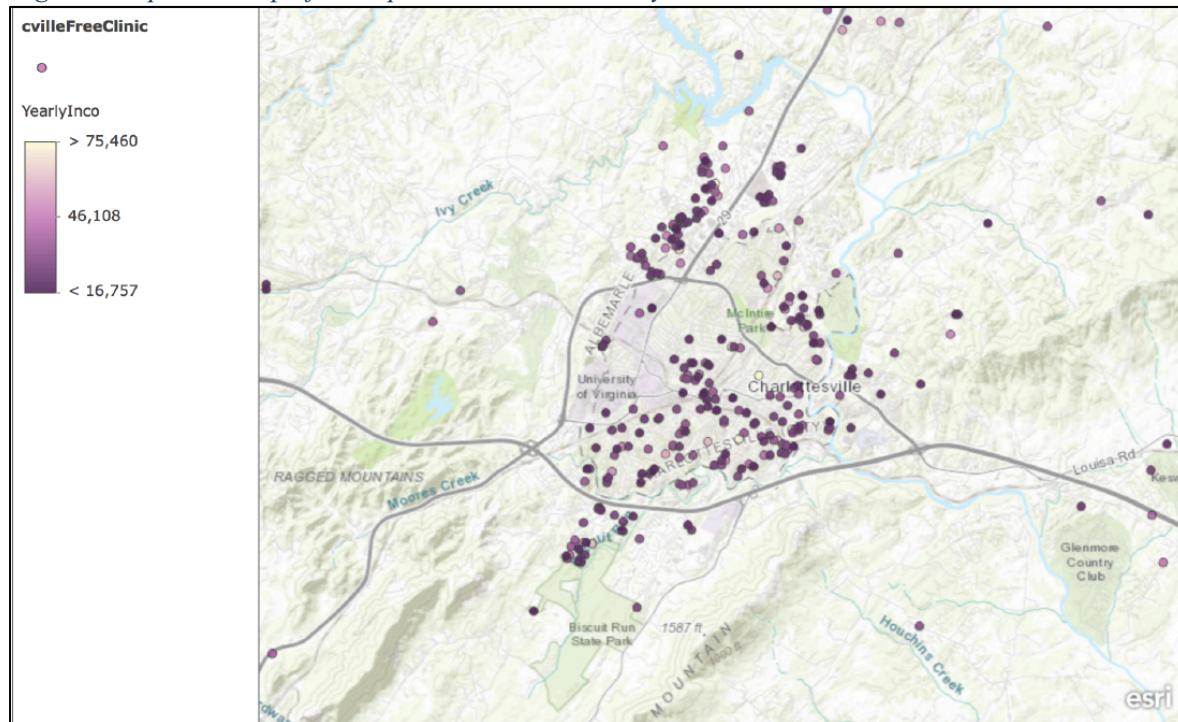
one-time, short conversation with patients at discharge to reduce high-users visits to the emergency department (Tsai et al., 2018). ED nurses would go through training at the beginning of each year to go over key points for the conversation, including emphasizing the importance of primary care and the capacity at the CFC to serve. This kind of in-person educational intervention, coupled with the information on the pamphlet, would help to address the culture of ED use in the Charlottesville-Albemarle community by targeting this population directly.

#### **Option 4: Community Representatives.**

*Recruit volunteers to serve as community representatives in underserved Charlottesville neighborhoods to share information about Medicaid expansion and the increased capacity of the free clinic.*

This option would look at areas of the Charlottesville-Albemarle area that the CFC has largely failed to tap into, and designate members of the CFC staff to serve as community representatives for that area to conduct information campaigns, speak at community meetings, etc. Before Medicaid expansion, the CFC created a heat map of free clinic patients across the Charlottesville-Albemarle region, included in Appendix A. As part of this project, the CFC now has an updated map, shown in figure 3 below. This map, which now also includes income level data, has been updated to remove people who are now eligible for Medicaid and no longer will use free clinic services. This new map can be used to identify underserved areas and target those areas as potential new clients. A zoomed-out mapping of CFC patients in Albemarle and surrounding counties is included in Appendix B.

*Figure 3: Updated map of CFC patients, 2018-2019, by income level*



Source: Care Shoaibi, created with ArcGIS Pro

This option focuses on increasing utilization based on geographic areas that have been underserved. There are identifiable and accessible pockets of the Charlottesville-Albemarle

community that could benefit from this direct community intervention, and this option would directly tap into those areas through volunteer work. These volunteers would increase access to information about the CFC in neighborhoods that the clinic has failed to reach.

## V. Evaluative Criteria

A set of five criteria is used to evaluate the above policy alternatives. The criteria are increase in take-up rate, administrative feasibility, equity, cost-effectiveness, and relevance to the Charlottesville-Albemarle community. All criteria will be measured with a score from 1 to 10. For each criterion, a rubric is included to explain the minimum requirements for a score to be assigned. Each criterion is also assigned a weight to reflect its importance in the determination of the final policy alternative.

### **Criterion 1: Increase in take-up rate (*weight: 0.2*)**

This criterion is intended to measure the extent to which each alternative increases the CFC's patient traffic in the post-Medicaid expansion era. The goal is for the CFC to be able to increase their community penetration by increasing the take-up rate of their primary care services, improving their impact as a health care safety net option for the community. Increase in take-up rate will be measured by projecting the use of CFC services after implementation of the proposed alternative. In order to calculate these projections, I base each take-up rate estimate in research on similar or related interventions to increase clinic utilization. These sources are included in the spreadsheet linked in Appendix C, which predicts patient increases and associated costs.

This criterion will be able to predict which alternative is the most promising to overcome the most pressing barriers in access and ultimately increase take-up rate. The increase in take-up rate is calculated over the course of five years, given that each policy intervention would require a sustained and renewed investment each year. As such, these increases include one-time patient visits, as well as patients who would become frequent users of the CFC. The CFC can determine whether these increases in patient traffic would be beyond the scope of their capacity at that point in the future, given their typical trends in one-time patient visits versus frequent users.

*Table 1: Increase in take-up rate rubric<sup>2</sup>*

Score	Minimum requirements
0	0 new patient visits
1-3	Less than 500 new patient visits
4-6	500-1,000 new patient visits
7-9	1,000-1,500 new patient visits
10	Greater than 1500 new patient visits

### **Criterion 2: Cost-Effectiveness (*weight: 0.2*)**

This cost-effectiveness criterion is calculated by first measuring the financial costs of each alternative—for example, cost of hiring or increasing staff wages, collecting and analyzing

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<sup>2</sup> The bins included in the rubric are rough estimates over the course of five years. Based on the sensitivity analysis, some options might fall into more than one bin, or fall on the borderline. The bins are meant to account for this variation to give a general sense of how many more patients we can expect under each scenario.

survey data, creation of an educational intervention, training for staff and volunteers, etc. These costs are divided into fixed costs and variable costs, and variable costs are discounted over the length of five years. From these yearly cost estimates, the final cost over the course of five years is calculated as a net present value (NPV) in 2019 dollars. The outcome of interest in determining cost-effectiveness is the increase in take-up rate of primary care services at the CFC, which was accounted for with the first criterion. Effectiveness, therefore, is measured by incorporating the increase in take-up rate into this measure, to determine how many dollars are required for an increase in one additional patient per year.

The cost-effectiveness estimate is calculated by dividing the total cost by the projected increase in the free clinic's primary care take-up rate in the Charlottesville-Albemarle community based on each policy alternative. This estimate is then divided by 5, the number of years over which the costs and outcomes were measured, to get a cost-effectiveness estimate per-year. The cost-effectiveness calculations and associated sensitivity analyses are included in Appendix B. Although these cost-effectiveness scores are rough estimates based on available data and a series of assumptions, these scores are relevant because they help to measure the relative cost-effectiveness of each alternative in comparison to the others. By altering the assumptions, the exact numerical cost-effectiveness values can be adjusted in the spreadsheet included in Appendix C.

Qualitative measures of uncertainty are included in the rubric to account for the sensitivity analysis of each option. A large amount of uncertainty means that the sensitivity analysis has rendered a significant range in cost-effectiveness, whereas a little amount of uncertainty means that the sensitivity analysis has rendered a range that is contained and does not fundamentally change the prediction of cost-effectiveness.

*Table 2: Cost-effectiveness rubric*

Score	Minimum requirements
0	N/A; no increase in effectiveness
1-3	\$80-100 per patient per year, significant uncertainty
4-6	\$50-\$80 per patient per year, some uncertainty
7-9	\$20-\$50 per patient per year, some uncertainty
10	< \$20 per patient per year, little uncertainty

### **Criterion 3: Administrative feasibility (weight: 0.3)**

This feasibility criterion will measure the impact of administrative barriers or complications in the implementation and sustainability of each alternative. The proposed alternatives will each be associated with a certain administrative lift—for example, the hiring and monitoring of extra staff, the distribution and tracking of survey data, etc. This administrative feasibility criterion is intended to measure how prohibitive these administrative requirements will be during each alternative's implementation and operation. This will be measured qualitatively on a scale from 0 to 10.

A score of 0 means that the option is highly difficult to implement. It might require significant human resources work to hire a large number of staff, a long time period for implementation, or a major outreach initiative. A score of 10 means that the option is easy to implement—for

example, it requires a relatively small number of new employees and onboarding procedures, a small time frame for implementation, and more manageable amounts of data to collect and analyze. The requirements are described in more detail below.

This criterion is given a higher weight than the other criteria. This is because the CFC should prioritize an option that can quickly and effectively address the policy problem at hand, without interfering or detracting from their primary functions. A more administratively feasible option will be easier to manage, and will also result in quicker results.

*Table 3: Administrative feasibility rubric*

Score	Minimum requirements
0	> 7 employees, >10 volunteers, many trainings, > 6 months implementation
1-3	5-7 employees, 7-10 volunteers, several trainings, 3-6 months implementation
4-6	2-5 employees, 4-6 volunteers, several trainings, 2-3 months implementation
7-9	0-1 employees, 0-3 volunteers, few trainings, 2-3 months implementation
10	No employees, no volunteers, less than 1 month implementation

#### **Criterion 4: Equity (weight: 0.1)**

Equity measures the extent to which the alternative proportionally distributes benefits for all people in the surrounding community. Equity will be considered geographically across the Charlottesville-Albemarle area, given that various neighborhoods in the area have strong concentrations of people in similar SES brackets, and tend to have strong racial concentrations as well. Looking at neighborhood penetration reveals whether the CFC is distributing benefits for the community's most vulnerable populations, which is a core function of the CFC's mission.

Although equity is a somewhat normative criterion, this criterion will also be measured by predicting racial diversity and socioeconomic-status (SES) diversity of free clinic patients as compared to the surrounding eligible community. Race and SES are chosen as the main priorities to promote equity, because people in racial minority groups and lower income brackets are disproportionately underserved by the U.S. health care system. Each policy alternative will result in some change in the demographic makeup of free clinic patients, along dimensions of race and SES. This criterion is intended to forecast those percentages and compare them to the percentage of uninsured Charlottesville-Albemarle residents of various racial backgrounds and income levels. An equitable policy alternative is one that results in a makeup of free clinic patients that is most representative of the Charlottesville underserved community.

Equity is a difficult criterion to measure ex-ante. To account for this limitation, equity is measured on a qualitative 10-point scale, with higher numbers indicating a more comprehensive and direct investment in underserved areas. If a policy alternative is more widespread and persistent in its outreach and impact, we can predict a higher level of community representation in the CFC's patient base, thus rendering a higher equity score. Given the difficulty in predicting equity, this criterion is weighted relatively low with a weight of 0.1. This does not reflect the relative importance of this criterion—rather, it is meant to account for the uncertainty associated with this criterion, because assigning a greater weight to such an uncertain measure could distort the final policy recommendation.

*Table 4: Equity rubric*

<b>Score</b>	<b>Minimum requirements</b>
0	No expected change in equitable representation
1-3	Addressing one underserved group, no follow-up
4-6	Addressing several underserved groups, no follow-up
7-9	Addressing many underserved groups with targeted intervention, potential for follow-up
10	Widespread outreach, sustained and repeated contact with many communities

**Criterion 5: Relevance to Charlottesville-Albemarle (weight: 0.2)**

This criterion is intended to tailor each specific recommendation to the unique problems facing the Charlottesville-Albemarle community. Based on the extant literature, it is beneficial for free clinics to identify the barriers to access that are unique to their community, and to then structure interventions to address those barriers. This criterion is included to ensure that the chosen policy recommendation is accounting for the specific challenges that this community may face in increasing primary care utilization.

In order to determine relevance to the Charlottesville-Albemarle community, I conducted a series of stakeholder interviews with various health care professionals in Virginia.<sup>3</sup> These interviews were roughly 30 minutes in length and were conducted over the phone between Monday, April 1 and Thursday, April 4. A basic structure of the interview questions is included in Appendix D.

- Putnam Ivey de Cortez, MAPP2Health Project, Virginia Department of Health
- Kathryn Zapach, Vice President of Membership Support, Virginia Association of Free and Charitable Clinics
- Carolyn Engelhard, former member, Charlottesville Free Clinic Board of Directors
- James Beckner, Executive Director, Richmond Academy of Medicine

Based on the notes from these interviews, I conducted a qualitative research evaluation method called “open-coding.”<sup>4</sup> Open-coding is a process of labeling concepts from a textual data source and then defining categories based on these properties (Khandkar, n.d.). Through the process of open-coding, I identified a list of themes that emerged throughout the interviews that identified the main access barriers to free clinic utilization in the Charlottesville-Albemarle community. I then ranked these themes in order of salience to the community, based on how often they emerged throughout the interviews. The themes in order of importance are:

- **Confusion** about the health care landscape (eligibility and available options)
- **Inertia** (habit of ED use, or a lack of incentive to change behavior)

<sup>3</sup> In earlier phases of this project, I wanted to conduct a survey for uninsured and underinsured residents in Charlottesville-Albemarle to determine the main access barriers facing the community. However, given timing limitations and financial constraints, this survey was not feasible. Putnam Ivey de Cortez also noted in her interview that organizations have attempted to conduct a similar survey in past years, but it was difficult to reach the target population, so qualitative data is more feasible (P. Ivey de Cortez, personal communication, April 1, 2019).

<sup>4</sup> Transcripts for these interviews are not available because the phone interviews were not recorded. The process of open-coding was conducted on my typed notes from each interview.

- **Lack of understanding** about the importance of primary and preventative care
- **Miscellaneous speculative barriers:** Convenience, transportation, or a negative perception by underserved communities

The first concept, confusion about the Charlottesville health care landscape, emerged as a theme in every interview, and was often mentioned multiple times throughout. The second concept, inertia with changing behavior, arose in three of the four interviews, and also aligns with how Executive Director Colleen Keller has defined the major problems in the health care landscape in Virginia. The third concept, lack of understanding about the importance of primary care, was referenced a couple of times throughout the interviews, but also was once accompanied by the disclaimer that this is a widespread problem regardless of income level—people generally just access services when they are sick. The final concept category listed above is meant to provide a catch-all for other potential barriers that the interviewees mentioned. These barriers were mentioned maybe in one interview, or if they were mentioned several times, were accompanied by disclaimers that these problems were largely speculative, or sometimes arise in similar communities.

In principle, this criterion could arguably be weighted the highest because the literature suggests the benefits of a tailored intervention for free clinics and their surrounding communities. Ultimately, however, there were conflicting opinions as to what is the main barrier facing the Charlottesville-Albemarle community. Without available survey evidence or quantitative research, it is difficult for the CFC to determine the most salient barrier to clinic access in the surrounding community. As such, this criterion is weighted by a factor of 0.2, because a greater weight could distort the final policy recommendation on incomplete information.

*Table 5: Relevance to Charlottesville-Albemarle rubric*

Score	Minimum requirements
0	Does not address any of the themes
1-3	Addresses 1 theme somewhat effectively
4-6	Addresses 2 themes relatively effectively
7-9	Addresses 3 themes relatively effectively
10	Addresses all four themes highly effectively

## VI. Evaluation of Alternatives

### Evaluation of Option 1: Status Quo

*Increase in take-up rate:* The status quo option is not expected to result in a predicted increase in new patients. In some localities where Medicaid has expanded and clinics have not responded with any intervention, the clinics have continued operating at far lower capacity (K. Zapach, personal communication, April 4, 2019). **Score: 0**

*Cost-effectiveness:* There is no associated cost-effectiveness score with this option. There could be an anticipated cost associated with creating a survey—the Weldon Cooper Center at UVA could design a survey for as low as \$5,000 (“Projects,” n.d.). However, in comparison to the costs of the other options over five years, this cost is not relevant. **Score: N/A**

*Administrative feasibility:* This option is the most administratively feasible for the clear reason that it does not require any change in operating structure of the clinic, beyond the fact that it requires the creation of a survey, which is minor in comparison to the other options. **Score: 10**

*Equity:* This option is not expected to improve equity in the community because there is no direct intervention with communities who aren't already accessing the clinic. **Score: 0**

*Relevance to the Charlottesville-Albemarle community:* Because this option is intended to inform the clinic's next steps with the most tailored intervention to the community, this option scores highly on relevance to the Charlottesville-Albemarle community. **Score: 10**

### Evaluation of Option 2: Patient Navigation

*Increase in take-up rate:* This option has the highest projected increase in take-up rate, and thus is given the highest relative score on this outcome. However, it is also associated with significant uncertainty, and thus the final score is lowered to account for that. **Score: 7**

*Cost-effectiveness:* This is the least cost-effective option by a significant amount. However, this is not a surprising result, because "studies with a short study timeframe are unlikely to find PN programs cost-effective, as many benefits associated with PN services may not be realized in the short term" (Whitley et al., 2012). **Score: 2**

*Administrative feasibility:* This is also the least administratively feasible option because it requires hiring the most staff, the oversight of new employees, and the human resources hurdles that come with this process such as payroll and benefits. **Score: 2**

*Equity:* This option is highly equitable. Patient navigation is a known strategy to overcome access barriers and improve health access and utilization for disadvantaged groups. It is associated with targeted and persistent contact with the underserved residents of Charlottesville, and is therefore expected to increase representation in the CFC's patient base. **Score: 9**

*Relevance to the Charlottesville-Albemarle community:* This option addresses each of the concepts most relevant to the community because patient navigation is a comprehensive approach designed to address many access barriers at once. **Score: 8**

### Evaluation of Option 3: Hospital ED Education

*Increase in take-up rate:* This option is associated with a moderate increase in take-up rate, but because this option is guaranteed to target a set of potential CFC users at the UVA ED, there is more certainty associated with this option in assessing the number of potential new CFC patients. **Score: 5**

*Cost-effectiveness:* This option is highly cost-effective. It is an efficient option associated with costs of pamphlet design and printing, trainings, and nurse compensation, and because of the relative certainty in these costs and the increase in new patients, the cost-effectiveness score is high. **Score: 8**

*Administrative feasibility:* Because this option does not require any staff changes on the part of the CFC, this option scores highly on administrative feasibility. The administrative barriers are largely the costs associated with planning and conducting training for ED nurses. **Score: 5**

*Equity:* This option directly targets the underserved population of community residents who use the UVA ED, but does not directly reach out to other areas in the community. Therefore, the equity score is relatively lower than the other options. **Score: 3**

*Relevance to the Charlottesville-Albemarle community:* This option most directly addresses the theme of inertia in changing the behavior of high ED use by residents. It creates a collaborative structure between the hospital and the CFC, which could help to change the culture of ED use in the community in a top-down fashion (J. Beckner, personal communication, April 2, 2019). **Score: 5**

#### **Evaluation of Option 4: Volunteer Representatives**

*Increase in take-up rate:* This option is associated with the lowest projected increase in take-up rate, partially because it is unclear how many community residents will be reached through this program. Furthermore, estimating how many people will actually use the clinic as a result of this intervention is also uncertain. These estimates are speculative, and a low score on this criterion reflects this uncertainty. **Score: 4**

*Cost-effectiveness:* This option is highly cost-effective. The CFC already runs on volunteer work, and the only associated costs with bolstering the volunteer capacity of the CFC are from increased recruitment, processing and screening. However, this option is also associated with a large range in cost-effectiveness due to uncertainty. **Score: 8**

*Administrative feasibility:* This option is moderately administratively feasible in comparison to the other options. Volunteer labor is more feasible to implement than hiring new employees, but there are significant administrative hurdles associated with launching a new volunteer program, including screenings, trainings, and day-to-day planning for outreach to communities. **Score: 3**

*Equity:* This option scores relatively high on equity, because it uses available data on Charlottesville neighborhoods to target areas based on income level. However, this option does not provide a direct route to CFC use (like the patient navigation option) and thus, gains in equity are uncertain. **Score: 7**

*Relevance to the Charlottesville-Albemarle community:* This option addresses each of the top themes of confusion, inertia in changing behavior, and lack of understanding of primary care as barriers to accessing the CFC. It most directly addresses the theme of confusion by providing information. However, it is not the most comprehensive option in addressing these themes. **Score: 6**

## **VII. Outcomes Matrix**

Each of the four alternatives has its pros and cons, which have been described in the context of each of the five evaluative criteria and assigned an appropriate score based on the guidelines in the rubrics. The outcomes matrix is a visual representation of the scoring breakdown of each policy alternative. The policy alternatives are evaluated on each individual criterion, and are assigned a numerical score from 1 to 10 based on the rubrics detailed above. Each criterion is assigned a relative weight to account for its importance in determining the final recommendation. A final score is determined by taking the numerical score for each criterion, multiplying this score by the assigned weight, and then adding up each of these values to determine a final score across all criteria.

Table 6: Outcomes Matrix

	Option 1: Status Quo	Option 2: Patient Navigation	Option 3: Hospital ED Education	Option 4: Volunteer Representatives
<b>Increase in take-up rate</b> <i>Weight: 0.2</i>	0	7	5	4
<b>Cost-Effectiveness (\$/patient/year)</b> <i>Weight: 0.2</i>	-	2 <i>\$85.83</i>	8 <i>\$19.12</i>	8 <i>\$15.35</i>
<b>Administrative Feasibility</b> <i>Weight: 0.3</i>	10	2	5	3
<b>Equity</b> <i>Weight: 0.1</i>	0	9	3	7
<b>Relevance to Charlottesville-Albemarle</b> <i>Weight: 0.2</i>	10	8	5	6
<b>FINAL SCORE</b>	<b>5.0</b>	<b>4.9</b>	<b>5.4</b>	<b>5.2</b>

**Option 3, hospital ED education**, scores the highest in the aggregate once we account for the relative weights of each criterion. Given the high scores on cost-effectiveness and administrative feasibility, this option performs the best.

### VIII. Recommendation: Hospital ED Education

The Charlottesville Free Clinic should pursue Option 3, Hospital Emergency Department Education via informational pamphlet distribution and the facilitation of nurse-patient conversations at the time of patient discharge. This option outperforms the other policy options because of its relative administrative ease, cost-effectiveness, and relevance to the major utilization barriers in the Charlottesville-Albemarle community while accounting for potential uncertainty in cost and take-up rate.

Option 1, let present trends continue, emerged as an unattractive policy alternative as a result of the information from the stakeholder interviews. Free clinics will have a greater impact in their community if they respond to Medicaid expansion with an effective policy intervention. Although the data gathering from the status quo option is ideal for tailoring a final policy option,

it is not the best course of action for this policy problem. Patient navigation, while an effective and highly comprehensive model to overcome a plethora of access barriers, is too major of an administrative lift in order for it to be feasible. Furthermore, cost-effectiveness is unlikely to be realized in the short term, making it a riskier investment for the CFC. This option should continue to be explored by policymakers at the community level, but for the immediate policy problem at hand, this option is not the most suitable. The fourth and final Option, volunteer representatives, is attractive for its capacity to reach directly into underserved parts of the community. However, the main problem with this option is the uncertainty in the effectiveness of this program, which rendered a number of low scores on several criteria—namely take-up rate and cost-effectiveness.

Administrative feasibility is the most highly weighted criterion, and Option 3, hospital ED education, is among the most administratively feasible options. This means that this option prioritizes the urgency with which the CFC should attempt to increase their take-up rate and community penetration. Furthermore, hospital ED education would be creating a strong partnership between two major health care options in the Charlottesville-Albemarle healthcare landscape: the hospital and the CFC. This partnership helps to address some of the major barriers to utilization that are relevant to the community, including confusion about health care options and eligibility, and also helps to break the habit of ED use among community residents that has been identified by health professionals in the field. The distribution of CFC information in the form of pamphlets at the time of hospital discharge is an appropriate time to encourage patients to utilize the CFC for their next health appointment. Supplementing this informational distribution with a conversation between an ED staff nurse and the patient will also help to communicate this information clearly, encouraging the use of all health care options in Charlottesville in an efficient and cost-effective way.

## **IX. Implementation**

The implementation period for this option should take the course of three to five months. In the first month, the CFC should coordinate meetings with officials at the UVA Hospital to get approval for informational distribution and trainings for ED staff nurses. In this first month of planning, the CFC should consider soliciting recommendations and ideas for best practices from the Lynchburg hospital and free clinic. Lynchburg is one example of an area that has created a model for coordination between the hospital and the local free clinic (K. Zapach, personal communication, April 4, 2019). If the CFC decides to pursue the creation of hospital ED education, it would be beneficial to start by gathering information on this model.

In the following months, the CFC should commission the design for a pamphlet on the CFC, emphasizing the key pieces of information that the CFC wants to communicate to potential patients. Once this design is finalized, the CFC can move towards distribution. CFC employees and volunteers should also convene with UVA hospital officials during these months to determine the best and most efficient structure for ED nurse trainings. Once this structure is approved and finalized, the CFC can coordinate with hospital officials to schedule times for nurse trainings, which will be fully compensated.

One important consideration with this option is that it fails to incorporate direct outreach into Charlottesville neighborhoods in the same way as Option 2, patient navigation, and Option 4, volunteer representatives. Because of this limitation, this option could potentially result in a

failure of the CFC to reach all geographic areas of Charlottesville that are underserved—instead, it will only target patients at the UVA ED, and the demographic breakdown of these patients was not accessible for this analysis. To account for this limitation, the CFC should regularly monitor the demographic changes in their patient base after implementation of this option. If this option poses significant equity concerns, the CFC must adjust this strategy and instead put more resources towards direct community outreach. However, it is also conceivable that targeting ED users at the UVA hospital could result in an equitable outcome—but without this data, I recommend that the CFC monitor equity as an ex-post criterion.

In sum, the CFC should aim to implement this option over the course of several months to promote efficiency. The first month is dedicated to planning, seeking approval, and promoting coordination between the clinic and the hospital, while the following months are focused more directly on carrying out trainings and creating informational materials for ED patients. With this implementation strategy, the CFC can expect to see increased utilization of their services, while addressing the relevant and salient barriers in the surrounding community.

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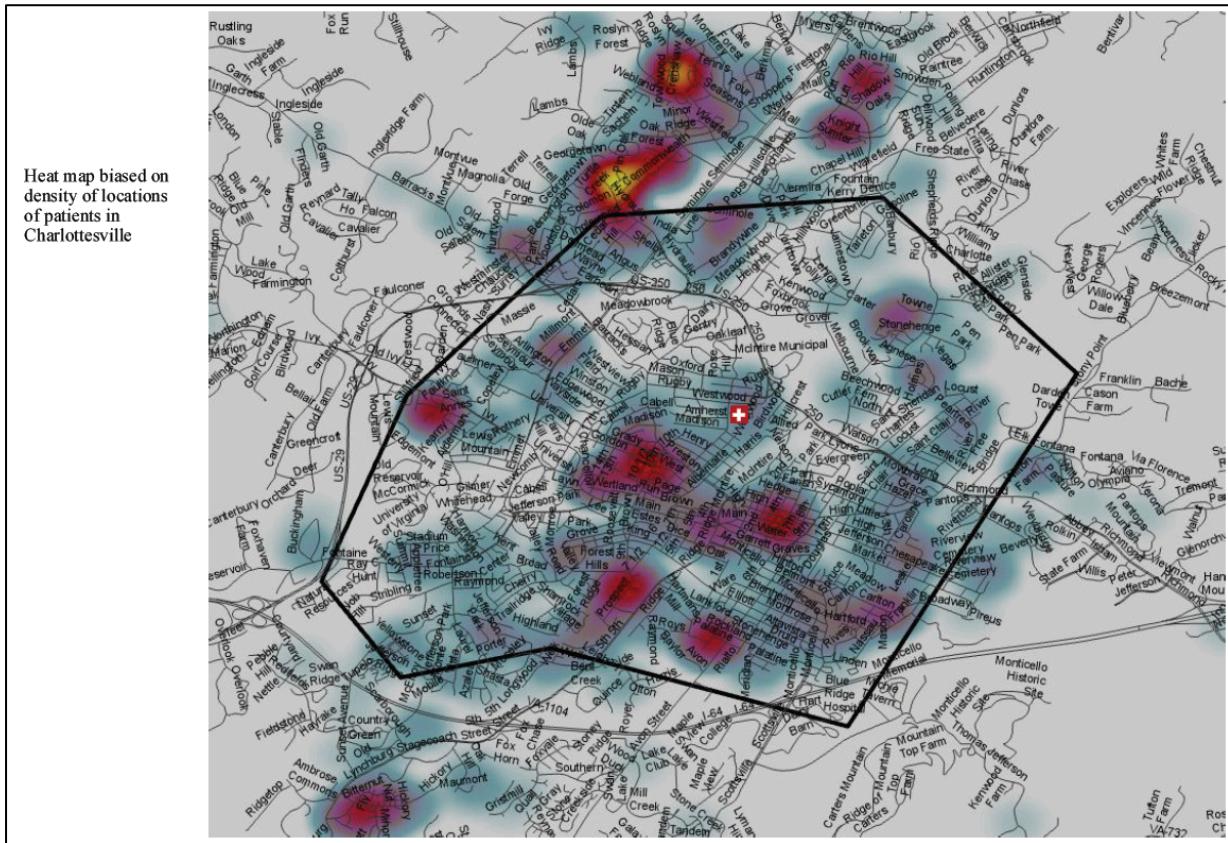
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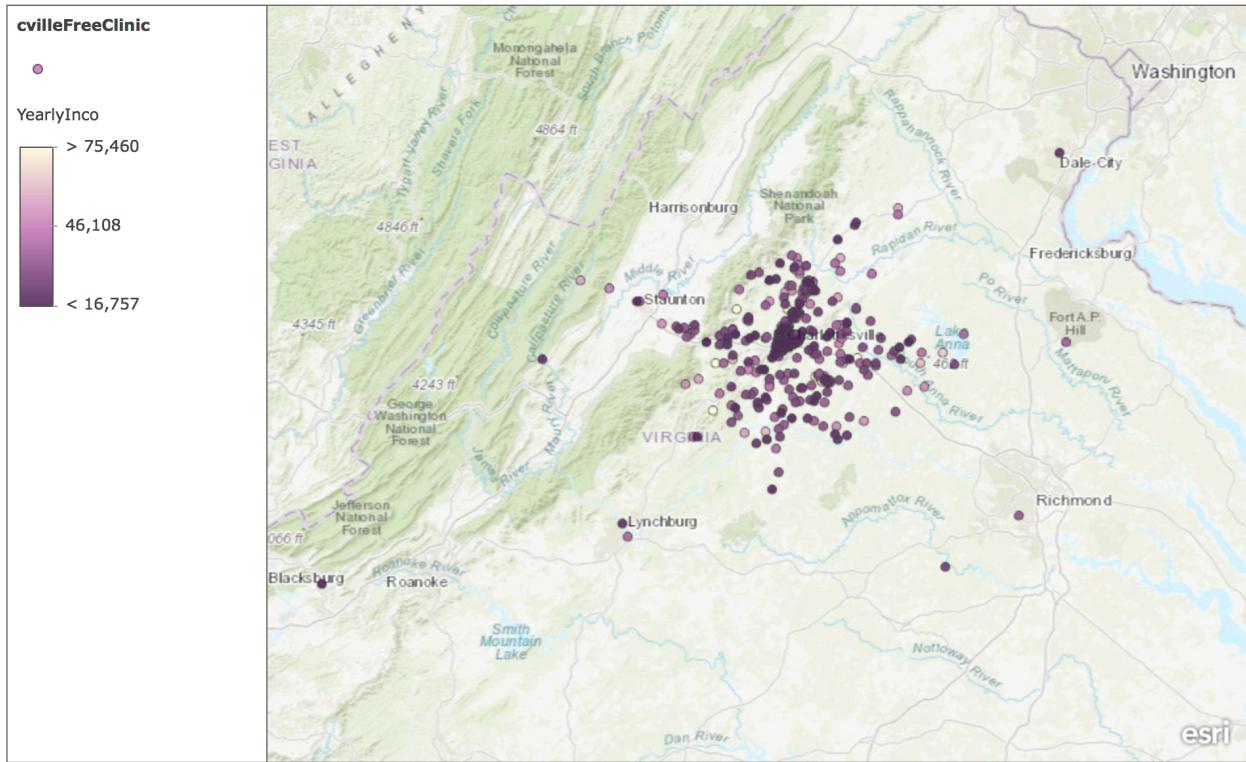
## XI. Appendices

### Appendix A: Heat map of CFC patients, pre-Medicaid expansion



Source: Charlottesville Free Clinic

*Appendix B: Zoomed-out map of CFC patients in surrounding counties*



Source: Care Shoaibi, created with ArcGIS Pro

*Appendix C: Cost-Effectiveness Analysis and Sensitivity Analysis*

[Linked to Google Drive](#)

Open Access to Cost-Effectiveness and Sensitivity Analysis spreadsheet.

### *Appendix D: Interview structure*

- Introduction; APP information; client is Colleen Keller; etc.
- Explain the issue: With Virginia's Medicaid expansion, patients who formerly relied on the Charlottesville Free Clinic for primary care will transition to Medicaid. Given this transition, the CFC has the capacity to improve their community penetration, increasing the take-up rate of their services to alleviate the burden on emergency departments and to better address health needs of the community.
- Part of the challenge is understanding which populations are already using the clinic, and which populations are not; what barriers might be preventing clinic utilization and access
- Purpose of the phone call: I want to ask some qualitative questions for a stakeholder survey: I am using interview data to inform my alternatives
- Any questions?

[transition to interview]

- **Q1:** Background, work with the Charlottesville Free Clinic
- **Q2:** What groups of people, [if we assume underutilization] who could benefit from using the free clinic, aren't using its services? Do you think there is underutilization of the free clinic in Charlottesville, or do you foresee one? As a result of Medicaid expansion?
- **Q3:** Colleen thinks ED patients could be a problem, what are your thoughts? For more context: *This is how Colleen has defined the problem:* Up to this point, the Charlottesville Free Clinic had been operating at capacity, only serving one-fifth of the uninsured population in the Charlottesville-Albemarle region. The University of Virginia Health System has a portion of funding dedicated to indigent care, and as such, many uninsured patients use this program to utilize emergency services. Uninsured and under-insured residents who do not access the CFC either rely on these emergency department services, or do not access primary care until health conditions become extremely acute.
  - Can you speak to this at all? Would you agree with her assessment?
- **Q4:** If we assume underutilization post-Medicaid expansion, what would be one of the main reasons?
  - Here are reasons we think there might be underutilization: lack of understanding about the importance of primary care, lack of knowledge about the free clinic, a negative perception of the free clinic, transportation issues, lack of availability during operating hours, and the tendency to rely on emergency room care through the UVA health system. Which is the most salient barrier, if we do assume underutilization?
  - **Q5:** Are there other potential barriers to utilization?
- **Q6:** Is there anyone else who would be helpful for me to talk to?