

Frank Batten School of
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University of Virginia

Addressing Negative Social Determinants of Health in Virginia

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FRANK BATTEN SCHOOL
of LEADERSHIP and PUBLIC POLICY



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Disclaimer

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

A handwritten signature in black ink, appearing to read "Kaitlyn Gritty".

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Executive Summary

One's health is affected by many factors including genetics, behavior, social-circumstances, environment and access to medical care. But access to medical care only contributes to 10-20% of one's health. There are many factors outside a provider's clinical reach that negatively affects a patient's health. Addressing negative social determinants of health is an effective way to improve an individual's health, especially for low-income Virginians, as they are the most affected by them. Chronic disease drives the US healthcare system, with an underinvestment on preventative care and social services to address health related issues. This gap is negatively affecting the US, seen in the lagging of health outcomes behind other developed nations and trillions of dollars spent on healthcare. The US invests in some policies and programs to address negative social determinants but not to the same level as other nations and these programs are not integrated into our health systems. Though we are behind other nations in these tasks, the US has the opportunity to improve the lives and health of low-income individuals and lower healthcare costs and the negative economic impact of negative social determinants of health.

This report scores alternatives based on the following criteria: political feasibility, cost effectiveness, equity, and implementation. The alternative that scores the highest in the criteria of this report is Alternative 3: Government Benefit Program Registration. This is a targeted approach to help alleviate the impacts of negative social determinants of health by focusing on the population of low-income individuals who are eligible for state and federal social services programs but have difficulties navigating the application process or do not realize they are eligible. By recommending this alternative, I am advocating for a plan that connects low-income people to services to improve social determinants of health but this option does not directly improve an individual's burden like tackling food insecurity, which Alternative 2: Food Security through Food Banks does.

I also recommend Alternative 5: Universal Screening of Social Determinants of Health as a secondary recommendation because it's potential to inform future public policies and hospital programs. The current gap of data regarding the prevalence and impact of negative social determinants of health can be filled through some sort of standardized, universal screening process for future policy use and long term tracking advantages. The state could pursue a pilot program to collect data on social determinants of health.

The VCU Health System has the opportunity to take this recommendation and, with the approval of VCU Health System leadership, pursue a lobbying strategy to show their support of pursuing legislation that could address the most prevalent negative social determinants of health that low-income individuals face in Virginia.

Problem Statement and Problem Definition

The Commonwealth of Virginia does not adequately address low-income individuals' social determinants of health. These individuals will continue to experience suboptimal health outcomes unless policymakers address this issue.

An individual's health is affected by many factors including genetics, behavior, social-circumstances, environment and access to medical care. Access to affordable, quality, and timely health care can help prevent diseases and detect issues sooner, enabling individuals to live longer, healthier lives. But this is not the whole story. Access to medical care only contributes to 10-20% of one's health, as shown in Figure 1 (HHS, 1980) (McGinnis et al., 2002) (Hood et al., 2016) (Catlin et al., 2010). For example, poverty is associated with more years of lost life than smoking and obesity combined (Muennig, 2010). In order to promote the health of Virginians, policy makers need to look at other ways to improve health, especially low-income individuals.

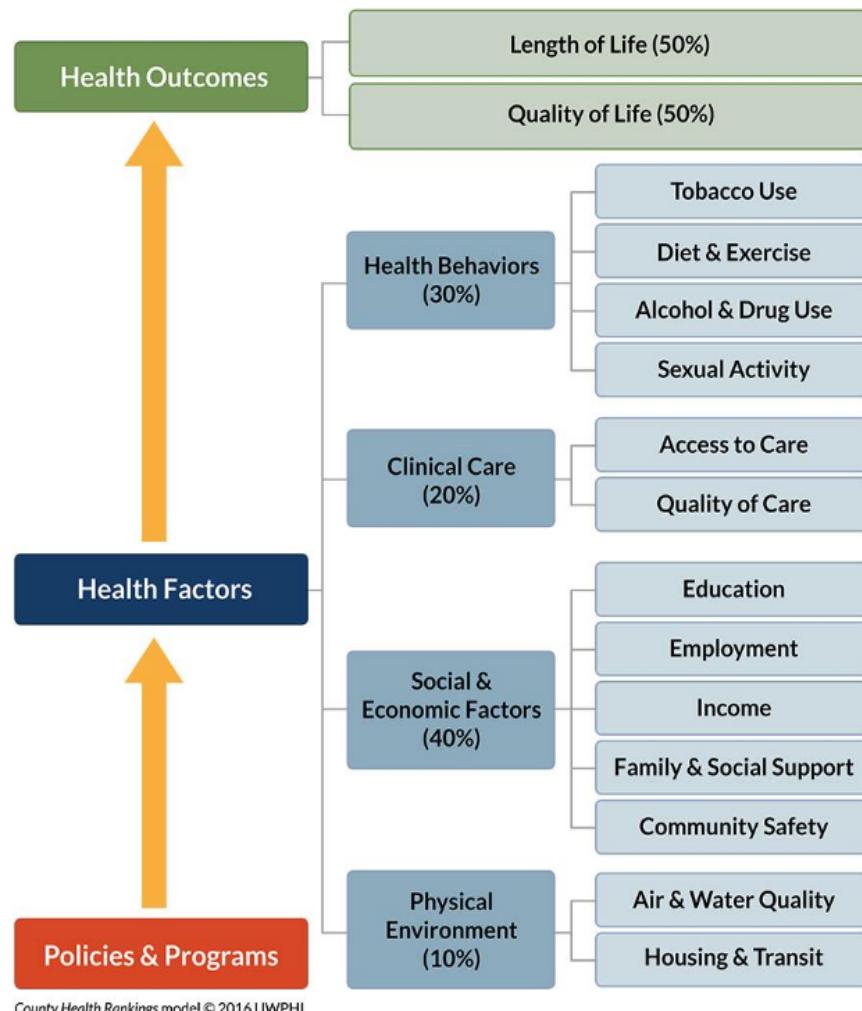


Figure 1: County Health Rankings & Roadmaps. UWPPI. (2016).
<http://www.countyhealthrankings.org/our-approach>.

Health systems can treat a patient's health problems, but there are many factors outside a provider's clinical reach that negatively affects a patient's health. Access to non-clinical services that target negative social determinants of health, to supplement the clinical services hospitals already provide, will improve health outcomes for low income Virginians. Addressing social determinants of health and referring patients to community-based programs and services is an effective way to improve an individual's health. Studies find that addressing social determinants of health decreases emergency department use, reduces emergency spending, and decreases inpatient and outpatient spending (Beaton, 2018). Government interventions on social determinants of health may be justified from both an equity and efficiency perspective as a "market failure", due to inefficiently allocate resources, due to imperfect information, existence of externalities, and provision of public goods. There is also the justification since low income people are not able to generate sufficient income to address the problems they disproportionately are faced with, government intervention is necessary to provide supplementary assistance.

Costs to Society

The costs that negative social determinants of health impose on society are broken down into direct costs and economic costs. Direct costs of negative social determinants of health include costs to the healthcare system for preventable illness such as emergency room visits, hospital admission, and other inefficiencies. Economic costs include the loss of GNP from the loss of wages specifically, increased time off needed to address and cure illness and early death. For example, cost of food insecurity causes prolonged hospitalizations and higher readmission rates, resulting in malnourished patients costing nearly twice as much as their well-nourished peers. These patients would also cause a loss of wages due to forgone and missed work. It is difficult to price every negative social determinant of health so this estimate will only include food insecurity, housing insecurity, and the impact of educational opportunities. The cost social determinants of health impose on society is estimated to be \$18.7 billion in 2020 dollars in Virginia (Appendix A). This is likely an underestimate of the societal cost because the indirect health costs and economic impacts cannot be exactly estimated and this analysis did not include all negative social determinants of health.

Background

Social Determinants of Health

There are many factors outside of a doctors office that affect someone's health and quality-of-life. Social determinants of health are the conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks (Healthy People 2020, 2019). These include factors like socioeconomic status, education, neighborhood and physical environment, employment, and social support networks, as well as access to health care, as shown in Figure 2. These factors may not be the direct causes of illness and health inequalities but have been described as the causes of the causes of illness and inequalities. An example of a social factor negatively affecting health outcomes is housing security. A family who faces housing insecurity or unsafe housing conditions may face conditions that are detrimental to their health, such as lack of safety, exposed garbage, and substandard housing. Indoor exposure to mold is linked with upper respiratory tract symptoms, cough, and wheeze in otherwise healthy people, and with asthma symptoms in people with asthma, which leads to hospitalization (CDC, 2019). Housing and economic instability is associated with higher rates of hospitalization. In this case, if this family could improve their housing security and conditions, they could see improvements in their health.

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	
Medical bills	Playgrounds	Higher education		Stress	Quality of care
Support	Walkability				
	Zip code / geography				

Health Outcomes
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations



Figure 2: Social Determinants of Health Table; Kaiser Family Foundation. 2018.

Focusing on preventative measures to address health, instead of allowing issues to progress to a point where these individuals end up in the emergency department, would save healthcare dollars and increase wages by decreasing sick days and prevent long-term health problems.

Low-income individuals are those most affected by negative social determinants of health. Addressing social determinants of health is not only important for improving overall health and lowering healthcare costs through preventative measures, but also for reducing health disparities rooted in social and economic disadvantages. With 1 in 6 people living in poverty, there is a need for new strategies to address the links between poverty and health. Again, health disparities by racial or ethnic group or by income or education are only partly explained by disparities in medical care. Economic inequality is increasingly linked to disparities in life expectancy across the income distribution, and these disparities seem to be growing over time (Chetty et al., 2016). Poor adults are five times as likely as those with incomes above 400 percent of the federal poverty level to report being in poor or fair health (Robert Wood Foundation, 2008). There are various mechanisms, including clinical, behavioral, and environmental factors, through which income influences health. It's also clear that while low income contributes to poor health status, poor health can also contribute to lower income. Poor health can limit one's ability to work, reduce economic opportunities, inhibit educational attainment, and lead to medical debt and bankruptcy (Khullar, 2018). This can create a negative feedback loop sometimes referred to as the health-poverty trap. In order to reduce health disparities for low income Virginians and stop this cycle, negative social determinants of health need to be targeted.

Hospitals and Providers

Hospitals have long hired social workers to address patients' social issues. The healthcare system is starting to recognize the importance of more targeted and integrated efforts to combat the social factors that contribute to poor health and expensive healthcare.

Hospitals and provider organizations can reduce spending substantially when they connect people to services that address social determinants of health. One study found an additional 10 percent reduction in healthcare costs – equating to more than \$2,400 in annual savings per person -- for people who were successfully connected to social services to address negative social determinants of health they were screened for (Pruitt et al., 2018). Some healthcare organizations in this country are increasing their focus on social determinants of health and the effect on patient care, especially in the shift to value-based care. Even payers believe that addressing the social determinants of health of their beneficiary populations will be a key way to improve their population health programs, though few have established reimbursement systems to encourage this. For example, Kaiser Permanente is planning to equip all of its providers with technology tools to help address the social determinants of health such as better tracking of individuals affected by negative social determinants of health and coordinating follow-up services for those in need (Kaiser Perminente, 2019). Hospitals are also integrating programs and initiatives to address non-clinical factors of health in order to improve patients' health outcomes. Some community hospitals are starting to screen low income individuals for certain social determinants of health, establish “food prescription” programs, giving patients free bus passes, creating employment pathways, and creating other social programs. But these programs and services

are often not reimbursable by insurance so hospitals are taking these initiatives as a way to decrease their charity care costs and prevent avoidable readmissions.

As said previously, the healthcare system is just beginning to recognize the importance of combating the social factors that contribute to poor health but by no means is it standard to address these issues. But there is investment. One study identified seventy-eight unique programs to address various social determinants of health in fifty-seven health systems that involved at least \$2.5 billion of health system direct financial investment (Horwitz, 2020). In order to encourage hospitals to recognize these factors and expand programming, we could consider integrating a reimbursement mechanism to lessen the cost of addressing social determinants of health.

The US Healthcare System Compared to Other Nations

Managing chronic diseases drives the US healthcare system, with an underinvestment on preventative care compared to similar wealthy nations. According to the Centers for Disease Control, in the U.S. alone, chronic diseases account for nearly 75 percent of aggregate healthcare spending. 96 cents per dollar for Medicare and 83 cents per dollar for Medicaid is spent on chronic illness (Fried, 2017). Chronic illness negatively affects not only the individual but also the nation due to its impact on worker wages and early death. Chronic diseases are responsible for seven out of 10 deaths in the U.S., killing more than 1.7 million Americans each year; and more than 75% of the \$2 trillion spent on public and private healthcare in 2005 went toward chronic diseases (Tinker, 2017) (Partnership to Fight Chronic Disease).

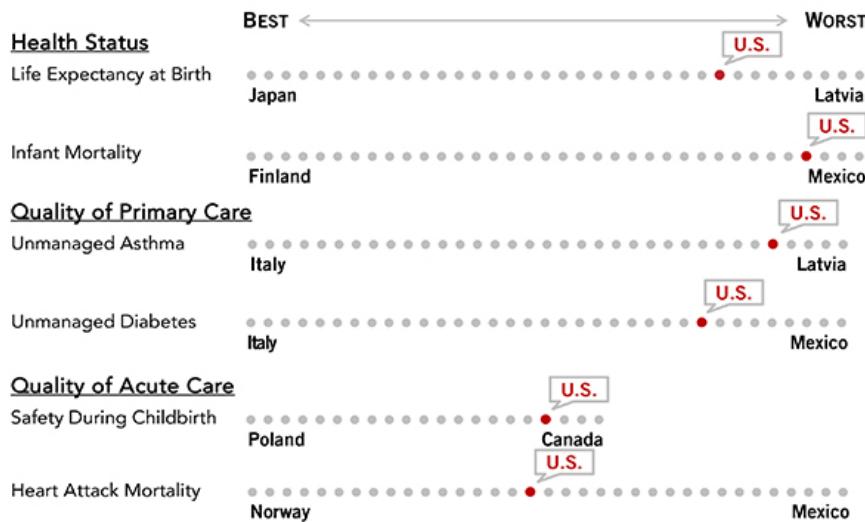
There is also a lack of primary care access and use in the US, leading to patients relying on the emergency room for care more appropriate for a primary care setting and the progression of acute conditions to chronic conditions. Both of these result in higher, less efficient healthcare spending for the nation. As of 2015, only 8% of US adults ages 35 and older had received all high priority, appropriate clinical preventive services recommended for them (Barbey, 2017). Compared with peer countries, the U.S. has fewer primary care clinicians and provides fewer services in the primary care setting, instead being more heavily skewed toward specialty care (Shi, 2012).

US Healthcare vs. Other Nations

The U.S. falls last in terms of efficiency, access, equity and health outcomes compared with 11 other nations including the United Kingdom, Australia and the Netherlands (The Commonwealth Fund, 2017). The US performs worse in common health metrics and outcomes compared to other industrialized nations. As shown in Figure 3, the US consistently performs lower in health rankings of life expectancy, infant mortality, and unmanaged diabetes.



Although the United States spends more on healthcare than other developed countries, its health outcomes are generally not any better



SOURCE: Organisation for Economic Cooperation and Development, OECD Health Statistics 2019, July 2019.

NOTES: Data are not available for all countries for all metrics. Data are for 2017 or latest available.

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Figure 3: Healthcare Spending and Health Outcomes. Peter Peterson Foundation. Organization for Economic Cooperation and Development. OECD Health Statistics 2019. July 2019.

But it is not due to lack of investment in healthcare. The US remains an outlier in terms of per capita healthcare spending, which was \$11,172 per person in 2018 (CMS, 2018). That amount was about 25 percent higher than second-place Switzerland's \$8,009 and 108 percent higher than Canada's \$4,826. This is not a recent development either. The US has consistently outspent similar nations, as Figure 4 shows.

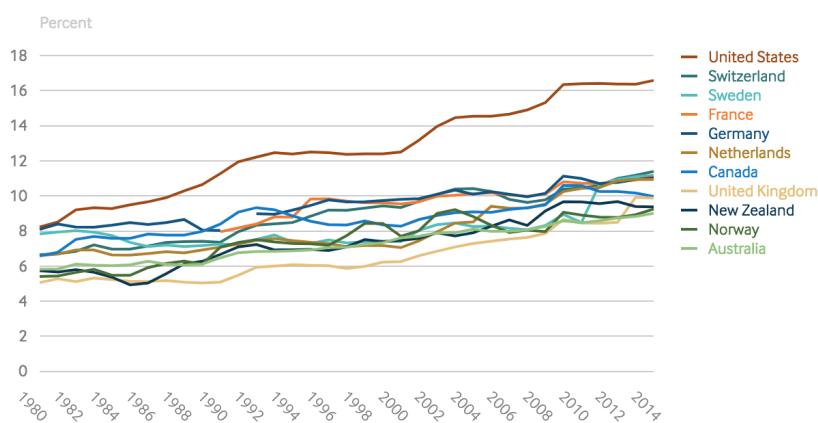


Figure 4: Health Care Spending as a Percentage of GDP, 1980–2014. OECD Health Data 2016.

What the US does not invest as much in is social services, even though they have higher health return on investment. Compared to similar nations, the U.S. spends less on social services (Bradley & Taylor, 2013). The Organization for Economic Co-operation and Development shows that the US spends the largest share of its gross domestic product on healthcare, at 17%, while ranking 23rd out of 34 nations in terms of social service spending (OECD, 2016). Even combining healthcare spending and social services spending, the US spends around the same as other high-income countries but still falls behind in measures of efficiency, access, equity, and health outcomes. This misplaced investment and lack of care coordination is one of the reasons why America's health outcomes are not any better than those in other developed countries, even with its massive investment in healthcare.

Legislative History

The approach to health through addressing negative social determinants of health is a relatively new conversation, picking up speed in the US about two years ago. Mounting evidence of the impact of social determinants on people's health stimulated a surge of activity among policymakers, health systems, and a growing number of social entrepreneurs to integrate health and social services and to find novel ways to finance those efforts. The US recognized that inequalities are related to structural determinants but making that jump to health has been a more recent trend.

The first discussions regarding negative social determinants of health, though not by name, were started by Sir Michael Marmot in 1978. Marmot provided early, compelling evidence of the dose-response relationship between socioeconomic status and health outcomes in the British civil service (Marmot et al, 1978). Research was slow to pick up on the true and compounding effects of negative social determinants of health. In 2000, one group of researchers estimated that approximately 423,000 deaths in the US were attributable to poverty, 245,000 were attributable to low educational status, 162,000 to low socioeconomic support, and 119,000 to income inequality (Galea et al, 2011).

Addressing negative social determinants of health is a recent focus for Virginia politics. Prior to 2018, there were very few pieces of legislation directly mentioning social determinants of health, mostly focused on mental health services. But even in the 2020 session, only a handful of bills have been proposed to address this issue. Starting in 2010, the Virginia Department of Health tracked some social determinants of health, including poverty, unemployment, and uninsured. But there is data lacking regarding the many other social determinants of health factors. The lack of a universal screening tool allows for some individuals to be left unaddressed by Virginia's healthcare system.

Despite not being in the spotlight for very long, policymakers are starting to recognize that it requires a systems approach to successfully address negative social determinants of health, and in turn, improve health outcomes. Policymakers are realizing that the solution to this problem is not necessarily hiring more social workers: the solution is found in better integrating care and systems that address social determinants of health into existing payment and delivery systems. Developing a system of care that is able to identify people's needs beyond the illnesses themselves, consistently deliver integrated social and physical care, and get reimbursed is the next step policymakers need to take.

Delivery System Reforms

There is a movement in the U. S. to change the delivery system from one of fee for service toward value, seen in the huge increase in Accountable Care Organizations (ACO), to incentivize meeting quality standards as well at cost reductions. Policymakers have increasingly focused on addressing social determinants of health beginning with passage of the Affordable Care Act (ACA). State Medicaid agencies and Medicaid managed care plans were granted increased flexibility by the Centers for Medicare and Medicaid Services (CMS) to address enrollees' social and nonmedical needs. Thirty-Five states and DC have accepted federal funding to expand Medicaid under the ACA, including Virginia. 388,615 Virginians have been newly enrolled in Medicaid since January 1, 2019, insuring these individuals, giving them more access to healthcare, and creating an opportunity to integrate social determinants of health into reimbursement systems. CMS issued guidance allowing Medicare Advantage plans to include some types of social services into supplemental benefit plans, finally allowing hospitals to seek reimbursement for some services (Coleman, 2018). This follows an earlier change in payment rules that allows physicians to bill for assessing their patients' social needs as part of enhanced payments for coordinating the care of patients with chronic illnesses.

Value-based care models and population health improvement efforts incentivized healthcare organizations to address the negative social determinants of health that kept low income patients coming back to hospitals. Being forced to treat the whole patient across broad episodes of care and over time, challenged health care providers to focus beyond specific conditions or diseases, to provide more value to patients and public payers alike. Through the ACA, the Accountable Health Communities Model was established, developed specifically to test approaches to integrating health and social services. ACA also required nonprofit hospitals to conduct community health needs assessments and to develop community benefit implementation strategies every three years, resulting in increased engagement between hospitals, public health departments, and community-based organizations. The evolving policy environment only accelerated health care's focus on social determinants but there is still a gap in these issues being addressed in Virginia.

Alternative programs to Fill the Void

There are many social services programs that exist to decrease the impact of negative social determinants of health, including food access and security, education access, housing security and access, and employment training and access. At the federal level, these programs include Food Stamps and other nutrition programs, Pell Grants and Federal Student Loans, Section 8 Housing Choice, Free and Reduced Price School Meals, many Federal training programs including Workforce Innovation and Opportunity programs, and other programs and opportunities. All of these programs originated and are funded at the federal level, though they may be additionally funded and implemented at the state and local level. These programs are effective at alleviating the effects of negative social determinants of health but Virginia has the opportunity to create programs to further fill the gaps and address negative social determinants of health for low-income individuals.

There are many other social programs and initiatives to address negative social determinants of health that have been focused on using hospitals and points of care to find those who need these services the most. These programs address negative social

determinants of health in direct and indirect ways including access to legal services, providing food access, educational opportunities, program registration, and others.

Medical Legal Partnerships

Many of the social determinants of health can be traced back to laws that are unfairly applied or under-enforced. Most low-income people experience at least two legal needs, and most of these needs are not addressed; this translates to more than 50 million Americans with some sort of legal need. One study found that while 85% of families with legal needs reported these issues as “serious” or “very serious,” few had sought out legal services (Sandel et al., 2014). Some families were unsure whom to contact, concerned that legal services would be costly or unhelpful, and/or were unaware that their concerns could be addressed through legal means. Having access to Medical Legal Partnerships (MLPs) is one way to fill this gap in access to legal services. These programs provide legal assistance and representation to the patient population that is overwhelmingly impacted by social determinants of health. The MLP approach in the clinical setting combines the knowledge, training, and resources of health care, public health, and legal professionals and staff to address and prevent the social determinants of health caused by legal needs (Murphy et al, 2015).

Studies have found that bringing legal aid into the clinical setting, through Medical Legal Partnership, leads to a variety of positive results for patients. Studies find that those who received legal assistance, showed a variety of positive results from reduced stress to having a positive effect on their family or loved ones to positively affected their financial situation to maintaining their treatment regimen (Zevon et al., 2007) There is also consensus across studies that MLPs save patients and hospital systems money through avoided readmission, relief of patients’ health care debt, and overturned insurance benefit denials (Pettignano, 2013) (Teufel, 2012).

Food Security and Food Banks

In 2018 37.2 million people lived in food-insecure households. 9.5 million adults lived in households with very low food security (US Dept of Agriculture, 2018). Food banks are one way to address this lack of access. When people have access and availability to sufficient, safe, and nutritious food, they are able to prioritize other needs. Research finds that food banks can significantly improve food security and dietary intake for people served (Seligman, 2018). The benefits are not only in fruit and vegetable intake and food stability, but also decreased tradeoffs between food and prescriptions. Though food banks should not be treated as long-term solution to food insecurity, they can be used as an intermediary for food access.

Program Registration

Enrollment in government benefit programs, such as Supplemental Nutrition Assistance Programs, Medicaid, and Temporary Assistance for Needy Families improve health and health outcomes. But there are often barriers to enrolling: understanding the eligibility requirements and whether you qualify, understanding what documents are required to apply, and understanding are the benefits of being enrolled in the program are all barriers, especially for those who are not health literate. Decreasing the barriers to enroll in social programming will assure individuals are getting access to the services they qualify for and allow the programs to help people in most need.

Universal Screening

There is increasing traction within the healthcare system for improving social history taking and integrating more formal screening for social determinants of health within clinical practices. Over the last two decades, a growing number of screening tools have been developed to help frontline health workers ask about social determinants of health in clinical care. There is a small but growing body of evidence on the impact of screening for social determinants of health more broadly in clinical care. Early research has shown that health workers who feel at ease asking about social determinants of health in clinical care are more likely to report having helped their patients in addressing these issues (Naz, 2016). There is also the importance of data collection when it comes to universal screenings. Data is used to inform decision makers and stakeholders on future policy changes. There is a potential to create policies in areas they are most in need, backed up by data.

Proposed Alternatives

Alternative 1: Legal Services through Medical Legal Partnerships

Many complex health-related social problems are entrenched in federal, state, and local policies and laws. [39] Most low-income people experience at least 2 legal needs, and most of these needs are left unaddressed; this translates to more than 50 million Americans with some sort of legal need. [40][41] Families are unsure of whom to contact, concerned that legal services would be costly or unhelpful, and/or were unaware that their concerns could be addressed through legal means. For those who are unable to represent themselves or pay for someone to represent them, medical-legal partnership (MLP) teams can help individuals navigate the legal pathways available to address legal issues that impact their health and well being. MLPs bring legal aid attorneys to the clinical setting to develop a multi-faceted approach to health care disparities by integrating preventive law into preventive medicine.[42][43] The MLP approach combines the knowledge, training, and resources of health care, public health, and legal professionals and staff to address and prevent the social determinants of health caused by legal needs.[44]

To encourage hospitals to develop MLP programs, though legislation, the Virginia Department of Health would create an 1115 waiver through Virginia's Medicaid program. Section 1115 waivers allow for research and demonstration projects designed to temporarily test expanded eligibility or coverage options, as well as methods for financing and delivering Medicaid.[45] This 1115 waiver would expand Virginia Medicaid to reimburse for legal services. This alternative would need to be passed by the General Assembly and implemented by the Department of Health. Though this alternative is not directly improving a negative social determinants of health, legal services provided through MLPs address negative social determinants of health.

Alternative 2: Food Security through Food Banks

Almost fifty million people are food insecure in the United States, which makes food insecurity one of the nation's leading health and nutrition issues. Food insecurity occurs whenever the availability of nutritionally adequate and safe foods, or the ability to acquire acceptable food in a socially acceptable way, is limited or is uncertain.[46] Food insecurity typically affects those who are most socioeconomically disadvantaged. Research has found that food insecurity is associated with many health issues, especially for children and their long term health. Using hospitals as an access point to catch low-income patients to connect them with hunger relief services will help address food insecurity issues.

Creating partnerships between hospitals and local food banks is the first step in alleviating food insecurity. An effective way to address food insecurity is to create a program that gives patients food before they walk out of the hospital and connects them to local food banks. The box of food would address the hunger a patient is facing in the moment while also connecting them to longer-term assistance through a local food bank. As a good way to connect the community to the local hospital and address food insecurity, this type of program is increasing in popularity.

The creation of these partnerships could be encouraged through Department of Health grant funding through the creation of a new program. The program would include

screening patients for food insecurity, identifying patients who are food insecure or are at risk of being food insecure, and before they are discharged, giving them a box of food and connecting them with a local food bank. This alternative would be a block grant program of \$100,000 a year per Virginia Community hospital for five years to cover the cost of a site coordinator and other program costs but hospitals will be expected to also invest in the program to cover additional expenses not covered by the grant.

Alternative 3: Government Benefit Program Registration

Enrollment in government benefit programs, such as Supplemental Nutrition Assistance Programs, Medicaid, and Temporary Assistance for Needy Families improve health and health outcomes. But there are often barriers to enrolling: understanding the eligibility requirements and whether you qualify, understanding what documents are required to apply, and understanding are the benefits of being enrolled in the program are all barriers, especially for those who are not health literate.

Having designated staff in the hospital whose sole job is to help low income patients navigate these programs will increase the utilization of the programs and improve help. For example, this type of program would benefit community hospitals because it could assist in newly Medicaid eligible individuals enroll so that hospitals can be reimbursed for the services they already provide, instead of the care falling under charity care. This alternative would be funded through the Department of Health as grant program.

This grant program would need to pass the General Assembly and be implemented by the Department of Social Services, in coordination with the Department of Health. The \$100,000 a year per Virginia Community hospital grant would cover hiring an on-site social services administrator and additional administration and coordination costs for five years.

Alternative 4: Status Quo

Currently, healthcare systems across the nation have begun to address negative social determinants of health. For healthcare systems that take in a significant number of low-income patients, there is an incentive to establish programs to prevent avoidable emergency department visits in order to lower costs. Healthcare systems must establish programs based on their own research, often without opportunity for the services to be reimbursed. If a healthcare system can prove that a program benefits the system and has a solid return on investment, the system can start and continue the program. Major health systems in Virginia have started exploring programs focused on addressing social determinants of health including the University of Virginia Health System, Virginia Commonwealth University Health System, and Sentara Health System. There are currently too few programs that address negative social determinants of health, due to the lack of investment by the state, lack of opportunity for services to be reimbursed, and lack of structured programming.

Alternative 5: Universal Screening of Social Determinants of Health

There is currently no way for the VDH to track negative social determinants of health. The lack of both coding standards and capacity in medical coding systems and documentation incentives makes finding a reliable source of information on negative social determinants of health very difficult for the State. Requiring healthcare systems to screen for negative social determinants of health and report the information to the State, will allow VDH to better address the needs of Virginians. This information may also be useful in the

long term, being used to inform future policy and in research settings. The screenings would take place anytime before the patient is released but may be done during initial examinations by nurses.

With approval of the General Assembly, the Department of Health would develop a screening tool for all hospitals to utilize, based on Medicaid's Early and Periodic Screening, Diagnostic and Treatment (EPSDT) screening tool.

Criteria

Proposed alternatives will be evaluated based on the following criteria: political feasibility, cost effectiveness, equity, and implementation.

Criterion 1: Political feasibility

The political feasibility criterion will rate how difficult it will be to garner maximum support from representatives, political interest groups, and constituents for an alternative. Political feasibility will be assessed at the state level, according to the likelihood that a proposed alternative will navigate the rules and regulation process of key agencies. The Virginia Department of Health (VDH), the Virginia Department of Medical Assistance Services (DMAS), and the Virginia Department of Social Services (VDSS) will be the main agencies that proposed alternatives would need to navigate politically. VDH is the agency that all state level health related rules and regulations must be approved by. Since Medicaid eligible Virginians will be affected by proposed alternatives presented in this report, DMAS will also be involved in health programming and requirements. The Virginia Department of Social Services (VDSS) is responsible for administering a variety of programs, including Temporary Assistance for Needy Families (TANF), Supplemental Nutrition Assistance Program (SNAP), and Medicaid.

The main General Assembly committees that would need to be navigated include the health committees such as House Health, Welfare & Institutions and Senate Education & Health, finance committees such as House Appropriations and Senate Finance and Appropriations, and other committee's legislation regarding social assistance fall under such as Senate Rehabilitation & Social Services. Important members of these committees include Chairman Mark Sickles and Vice Chair Sam Rasoul of the House Health, Welfare & Institutions committee, Chairwoman Louise Lucas of the Senate Education & Health, Chairman Luke Torian of House Appropriations, Chairwoman Janet Howell of Senate Finance, and Chairwoman Barbra Favola of Senate Rehabilitation & Social Services.

Additionally, other stakeholders, including state and local advocacy groups, will need to be considered, as regulations must go through public comment periods. Potential alternatives will be more politically feasible if the alternative does not put additional cost burden on the state, if hospitals and the community is engaged and onboard with proposed changes, and other potential political barriers.

Criterion 2: Cost effectiveness

The cost-effective criterion will determine if the alternative is able to minimize costs, while maximizing positive outcomes. Total costs will include administrative and operational costs, implementation costs, outreach and communication costs, and other costs associated with each alternative. Measuring the cost of the alternatives over a ten year time period allows for enough time for programs to have an impact on health outcomes. Converting the total cost amounts to net present value will give the most accurate cost over time and allow for comparison between alternatives. Positive outcomes include improvement in overall health, which in this report will be measured based on the number of low-income people who are affected. Each alternative will be measured by dividing the total cost by the number of low-income individuals who gain access to the services offered or who are impacted by

the alternative to determine the program that is most cost efficient. Alternatives will be ranked based on their total costs over ten years, discounted by assuming a 7 percent discount rate, as the Congressional Budget Office recommends. Appendix B details the full cost effectiveness analysis for all alternatives.

Criterion 3: Equity

The equity criterion will rate the alternatives on to what extent they address the needs of low income Virginians. The goal of this criterion is to rate an alternative on its ability to improve equity of low-income individuals compared to other Virginians. It will be important to note who will be excluded from the benefits of an alternative and whether an alternative could further marginalize any specific group. Targeted interventions to specific subgroups may still be considered.

Criterion 4: Implementation

The implementation criterion will rate the alternatives based on difficulty of enforcement and administration. Even if a policy is passed, if there is strong bureaucratic pushback, the policy is at risk of failing. Policies must be able to make their way through VDH and DMAS without devolving into a shell of the original policy. VDH and DMAS will be the main agencies implementing the alternatives so if they do not agree with the changes, have the expertise, have the technology, or have the enforcement capacity, the proposed alternative will not succeed.

Weighting

Each criterion will be weighted in order to calculate a score for each policy alternative: Political feasibility (10%), Cost-effectiveness (20%), Equity (30%) and Implementation (40%). All criteria will be scored from 1 to 5 with 1 being the lowest rated and 5 being the highest rated.

This weighting is based on a combined importance and difficulty to achieve. Political feasibility is weighted only 10% because Virginia is historically relatively receptive to programs and improvements that address health. With the current governor being a physician and a democrat majority in both chambers of the General Assembly, proposed legislation to improve the health of low income Virginians will be favorable. Cost effectiveness is weighted 20% because of the importance to consider the cost of an alternative by the number of people impacted but reflects the difficulty of calculating this estimate. Projecting the immediate and long-term impact of addressing negative social determinants of health is difficult, in addition to the limitations of current available data, projections may not encompass the full benefit of an alternative. Equity is weighted 30% because of the focus of this report to propose potential solutions to address negative social determinants of health and lessen the disparities between low income and other individuals. Implementation is weighted 40% because of the importance of the ability for an alternative to not just work in theory but also work for the individuals being targeted once implemented.

Alternative Scoring

Political Feasibility

Alternative 2 and Alternative 3 scored the highest in this criterion. Alternative 2: Food Security through Food Banks will have political support because of the familiarity, both representatives and the public, have with food bank programs. The state has shown its support for food banks, both on the farmer's side with tax credits and appropriating funding towards food banks, so connecting food banks to hospitals would be an easy next step. If Alternative 3: Government Benefit Program Registration is framed as connecting the neediest individuals who have difficulty getting access to programs and services they are already eligible for, it will garner political support. The programs to help low income individuals already exist but understanding eligibility and the difficulty applying to them leaves people out.

Alternative 4 and Alternative 5 rank the lowest in this criterion. In the Virginia General Assembly and nationally, there has been rising interest in finding ways to address the negative social determinants of health that cost our health system and our communities so much. Though hospitals have slowly started experimenting with additional programming, pursuing Alternative 4: Status Quo and not taking political action to address these issues would not be a good image for Virginia politicians. Alternative 5: Universal Screening of Social Determinants of Health could be reasonably politically favorable if it is framed as a way to track where there is the most need and inform future policies. But this option may face political pushback from those worried about healthcare data and privacy and those who oppose additional reporting requirements for hospitals.

Cost Effectiveness

Alternative 2 and Alternative 3 score the highest in this criterion. Alternative 2: Food Security through Food Banks scores the best in this criterion because the alternative proposes establishing a direct relationship between hospitals and existing food banks. This strategy will impact many people, while not costing very much because it takes advantage of the resources and supplies food banks already have. Alternative 3: Government Benefit Program Registration has a high cost effectiveness score because it is not proposing additional funding to any particular social safety net program; it is making the existing programs better utilized by assisting those who have difficulty understanding and applying to the programs.

Alternative 1 and Alternative 4 rank the lowest in this criterion. Alternative 1: Legal Services through Medical Legal Partnerships ranks lower in cost effectiveness because of the expensive nature of providing legal services and the limited number of cases a lawyer can take on at a time. Alternative 4: Status Quo is ranked the lowest in cost effectiveness because of the limited number of individuals current programs are able to reach. With only a handful of hospitals in Virginia having any programs focused on alleviating negative social determinants of health, there is a disconnect between the investment hospitals are making and the limited impact they are able to make. This alternative is particularly difficult to predict because Virginia hospitals nor the Virginia Hospital and Healthcare Association have released long term plans to address social determinants of health. Appendix B details the full cost effectiveness analysis for all alternatives.

Equity

Alternative 1 and Alternative 3 score the highest in this criterion. Alternative 1: Legal Services through Medical Legal Partnerships has the potential to lessen the impact of any negative social determinant of health a low-income individual faces. It has great potential to lessen the disparities between low income and other individuals through legal means. Alternative 3: Government Benefit Program Registration would take advantage of the many existing state and federal programs that low-income people can utilize to address the negative social determinants of health they face. Gaining access to additional support is a step towards addressing the needs and issues caused by negative social determinants of health for low-income individuals.

Alternative 4 and Alternative 5 rank the lowest in this criterion. Only a handful of hospitals in Virginia have programs focused on alleviating negative social determinants of health. Alternative 4: Status Quo leaves many individuals who do not have access to these particular hospitals disconnected and suffering from preventable issues related to negative social determinants of health. Alternative 5: Universal Screening of Social Determinants of Health is ranked low on the equity criteria because it does not itself improve the equity of low-income individuals compared to other Virginians. It may inform future policies that improve equity or connect individuals with existing resources at a hospital but screening does not actually implement anything to improve equity.

Implementation

Alternative 4 and Alternative 5 rank the highest in this criterion. Since hospitals are implementing programs on their own, they are able to make changes to the best of their abilities. Alternative 4: Status Quo allows hospitals to choose what initiatives they want to and are able to pursue. Without the support of the state or other resources, there may be barriers to connect with the patients who need these programs the most, which is why this alternative does not score a perfect 5. Alternative 5: Universal Screening of Social Determinants of Health requires healthcare systems to screen for negative social determinants of health and report the information to the Department of Health. This assures hospital compliance to this process.

Alternative 2 and Alternative 3 rank the lowest in this criterion. Since Alternative 2: Food Security through Food Banks requires coordination between hospitals and area food banks, this option may run into implementation issues. Volunteers may have difficulty connecting patients who are identified as food insecure with the correct resources if the hospital does not fully support this in house program. Alternative 3: Government Benefit Program Registration may run into coordination issues. Without an established screening process to identify what programs people are already enrolled in and may also be eligible for, there may be people who are not connected to this service. The hospital would need to do sufficient advertising to low-income individuals who come through their doors so that this program is utilized.

Outcome Matrix

Alternatives	Evaluative Criteria			
	Political feasibility (10%)	Cost effectiveness (20%)	Equity (30%)	Implementation (40%)
<i>Alternative 1: Legal Services through Medical Legal Partnerships</i>	3	2 \$9,281 per person impacted	4	4
<i>Alternative 2: Food Security through Food Banks</i>	4	5 \$327 per person impacted	2	2
<i>Alternative 3: Government Benefit Program Registration</i>	4	4 \$475 per person impacted	3	3
<i>Alternative 4: Status Quo</i>	2	1*	1	5
<i>Alternative 5: Universal Screening of Social Determinants of Health</i>	2	3 \$529 per person impacted	1	5

Recommendation

The alternative that scores the highest in the criteria of this report is Alternative 3: Government Benefit Program Registration. This alternative is focused on the narrow population that is eligible for state and federal social services programs but has difficulties navigating the application process or do not realize they are eligible. It scores either average or better on all criteria. If this alternative is framed as connecting the individuals in most need, who have difficulty getting access to programs and services they are already eligible for, it will garner political support. Programs to help low income individuals already exist but understanding eligibility and navigating the barriers to applying can pick up those at risk of falling through the cracks. This alternative received a high cost effectiveness score because it is not adding funding to any particular social safety net program, it is making the existing programs better by assisting those who have difficulty understanding and applying to the programs. By choosing this alternative, I am advocating for a plan that connects low-income people to services to potentially improve social determinants of health but this option does not directly improve an individuals burden like tackling food insecurity, which alternative 2 does.

I also recommend Alternative 5: Universal Screening of Social Determinants of Health because it's potential to inform future public policies and hospital programs. The current gap of data regarding the prevalence and impact of negative social determinants of health can be filled through some sort of standardized, universal screening process for future policy use and long term tracking advantages. This option provides no direct or indirect assistance to low income individuals who are affected by negative social determinants of health. The value of this alternative is that through an increase of data, the state and hospitals can implement targeted and more informed policy changes. Legislation and regulation changes are more likely to be approved if they are backed by evidence and data so this alternative would also benefit low-income individuals in Virginia in the long term. As a secondary recommendation, the state could pursue a pilot program to collect data on social determinants of health.

The VCU Health System has the opportunity to take this recommendation and, with the approval of VCU Health System leadership, pursue a lobbying strategy to show their support of pursuing legislation that could address the most prevalent negative social determinants of health that low-income individuals face in Virginia. The health system could use its own health data to project how the alternatives would affect its patient population. VCU Health System could also consider implementing programs similar to alternatives posed in this report, without the funding support of the state, if the health system has extra funding they'd like to designate towards addressing the negative social determinants of health that affect so many patients that come through their doors.

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Appendices

Appendix A

SDH	Impact Estimate	Cost to Society	Reference Sources
	15% Americans with some sort of legal need Population Rate in VA: 8626207		Albert H. Cantril, Agenda for access: the American people and civil justice, Am Bar Ass'n '996. AM. BAR ASS'N (May1996). 2. Schulman , Ronca , and Bucuvalas, Inc : New York: Mass Legal Assistance Corp, 2003.
Legal Services	average rate for attorney fees (\$200 and \$520 per hour)	\$ 258,786,210.00	US Census. (2019). State Population Estimates. Census.gov. Average Attorneys Fees: How Much Does a Lawyer Cost? (Lawyer Fees). (2020, April 15). Retrieved from https://www.advisoryhq.com/articles/attorney-fees/
Education	11.1% VA Population without High School Diploma Population Rate in VA: 8626207		Virginia Performs. (2016). Educational Attainment. Retrieved from https://vaperforms.virginia.gov/education_edAttainment.cfm US Census. (2019). State Population Estimates. Census.gov. US Bureau of Labor Statistics. (2017, July 21). High school graduates who work full time had median weekly earnings of \$718 in second quarter. Retrieved from https://www.bls.gov/opub/ted/2017/high-school-graduates-who-work-full-time-had-median-weekly-earnings-of-718-in-second-quarter.htm
Food Security	loss income betwn HS and no HS : \$11,115.62/ year (2020 dollars) average cost of a meal in Virginia being \$3.07	\$ 10,643,300,000.00	USDA. (2020, March). USDA Food Plans: Cost of Food Reports (monthly reports). Retrieved from https://www.fns.usda.gov/cnpp/usda-food-plans-cost-food-reports-monthly-reports FeedAmerica. (2017). Map the Meal Gap. Retrieved from https://map.feedingamerica.org/county/2017/chid/virginia/organization/feeding-america-southwest-virginia Minton, S., & Giannarelli, L. (2019, February 4). Five Things You May Not Know About the US Social Safety Net. Retrieved from https://www.urban.org/research/publication/five-things-you-may-not-know-about-us-social-safety-net US Census Bureau. (2019). U.S. Census Bureau QuickFacts: Virginia. Retrieved from https://www.census.gov/quickfacts/VA Center on Budget and Policy Priorities. (2019, December 10). More States Raising TANF Benefits to Boost Families' Economic Security. Retrieved from https://www.cbpp.org/research/family-income-support/more-states-raising-tanf-benefits-to-boost-families-economic-security
Government Benefit Registration	Virginia's 10.6% food insecurity rate (893,000 people) More than a quarter of the people living in poverty — a household income of less than \$25,100 a year for a family of four — in the United States receive no help from food stamps and other nutrition programs, subsidized housing, welfare and other cash benefits, or child-care assistance living below the poverty line	\$ 468,094,000.00	Poblacion, A., Bovell-Ammon, A., Sheward, R., Sandel, M., Cuba, S., Cutts, D., Cook, J. (2017). Stable Homes Make Healthy Families. 10.13140/RG.2.2.33250.63680. Center on Budget and Policy Priorities. (2019, December 10). National and State Housing Fact Sheets & Data. Retrieved from https://www.cbpp.org/research/housing/national-and-state-housing-data-fact-sheets?fa=vicw&id=3631
Housing Cost to Society	Insecure Housing Cost an estimated \$8 billion in avoidable health care and education costs in 2016 \$8622348514.83 (2020 dollars)	\$ 149,454,689.00 \$ 18,746,663,918.60	

Appendix B

Alternative 1: Legal Services through Medical Legal Partnerships

1 full time equivalent (FTE) attorney

facility: Office Space: 150 sq. ft.

\$

108,000.00 <https://www.squarefoot.com/dc/washington/office-space>

Office materials/equipment per yr

\$1,000

2 Volunteers, 40/hr week (minimum wage)
per location

29,000

\$283,300

96 community hospitals

American Hospital Association. (2020). Fast Facts on U.S. Hospitals, 2020: AHA. Retrieved from

total cost

96 <https://www.aha.org/statistics/fast-facts-us-hospitals>

\$27,196,800

Reference Sources

National Association of Medical Legal Partnerships. (2019).

75,000 patients helped by the 333 MLP in the US

2019 Impact. Retrieved from <https://medical-legalpartnership.org/impact/>

average 225 cases a year per MLP

Potential total number of cases

seen by VA hospitals: 21600

Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Cost	\$27,196,800	25,293,024.00	23,522,512.32	21,875,936.46	20,344,620.91	18,920,497.44	17,596,062.62	16,364,338.24	15,218,834.56	14,153,516.14
Total cost	\$200,486,143									
Cost effectiveness	9,281.77									

Alternative 2: Food Security through Food Banks

Office space rent 400 sq ft

Reference Sources

SquareFoot. (n.d.). Washington Office Space For Rent. Retrieved from <https://www.squarefoot.com/dc/washington/office-space>

2 Volunteers, 40/hr week (minimum wage)

14,500

Bureau of Labor Statistics. (2020, March 31). May 2019

National Occupational Employment and Wage Estimates. Retrieved from <https://www.bls.gov/oes/cur>

Site coordinator
per location

\$75,630 rent/oes_nat.htm#23-0000
\$378,130

American Hospital Association. (2020). Fast Facts on U.S. Hospitals, 2020: AHA. Retrieved from <https://www.aha.org/statistics/fast-facts-us-hospitals>

96 community hospitals

96 s/ fast-facts-us-hospitals

total cost **\$36,300,480**

Reference Sources

FeedAmerica. (2017). Map the Meal Gap. Retrieved from

863,390 people are struggling with hunger <https://map.feedingamerica.org/county/2017/child/virginia/organization/feeding-america-southwest-virginia>

Tang, N. (2010, August 11). Trends and Characteristics of US Emergency Department Visits, 1997-2007. Retrieved from

<https://jamanetwork.com/journals/jama/article-abstract/186383>

947.2 visits per 1000 enrollees
817803.008 estimated people effected

year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
cost per year	\$36,300,480	33759446.4	31396285.2	29198545.2	27154647	25253821.7	23486054.2	21842030.4	20313088.3	18891172.1
total cost	\$267,595,571									
cost effectiveness	327,212,7492									

Alternative 3: Government Benefit Program Registration

		Reference Sources									
facility: Office Space: 150 sq. ft.		SquareFoot. (n.d.). Washington Office Space For Rent. Retrieved from https://www.squarefoot.com/dc/washington/office-space									
Social Services Register per location		Bureau of Labor Statistics. (2020, March 31). May 2019 National Occupational Employment and Wage Estimates. Retrieved from https://www.bls.gov/oes/current/oes_00.htm#23-0000									
96 community hospitals		American Hospital Association. (2020). Fast Facts on U.S. Hospitals, 2020: AHA. Retrieved from https://www.aha.org/statistics/fa									
total cost		96 st-facts-us-hospitals									
15,722,880		15,722,880									
		Reference Sources									
poverty rate in va:		US Census. (2019). State Population Estimates. Census.gov.									
pop rate in va:		10.70% 8626207									
number of people in poverty in VA		923004.149									
quarter of people living in poverty do not receive support from any of the programs we examined		Minton, S., & Giannarelli, L. (2019, February 4). Five Things You May Not Know About the US Social Safety Net. Retrieved from https://www.urban.org/research/publication/five-things-you-may-not-know-about-us-social-safety-net									
number of people who could benefit		0.25 230751.0373									
947.2 visits per 1000 enrollees		Tang, N. (2010, August 11). Trends and Characteristics of US Emergency Department Visits, 1997-2007. Retrieved from https://jamanetwork.com/journals/jama/article-abstract/186383									
year		2020									
cost per year		\$15,722,880									
total cost		\$115,904,061									
cost effect.		475,769,5904									

Alternative 4: Status Quo

		Reference Sources									
VCU Investment		FeedMore. (2019). Central Virginia's Core Hunger-Relief Organization. Retrieved from https://feedmore.org/									
Onsite Food Bank Program		VCU Childrens Hospital . (2019). Medical-Legal Partnership: More than medical care. Retrieved from https://www.chrichmond.org/patient-and-family-resources/support-services/medical-legal-partnership									
Legal Services		\$ 378,130.00									
UVA Investment		UVA. (2019). UVA Medical-Legal Partnership. Retrieved from https://wwwjustice4all.org/economic-justice/medical-legal-partnership/									
Legal Services		\$ 283,300.00									
Sentara Investment		Vajda, B. (2019, October 3). Sentara partners with LISC to announce \$100 million community investment. Retrieved from https://wwwsentara.com/albermarle-north-carolina/aboutus/news/news-articles/sentara-partners-with-lisc-to-announce-\$100-million-community-investment.aspx									
Local Initiatives Support Corporation (LISC)		\$ 200,000.00 plus one time \$50 million investment									
total investment		<b">\$ 1,144,730.00 plus one time \$50 million investment</b">									
year		2020									
cost per year		\$ 1,144,730.00									
total cost		\$ 58,438,584.76									
year		2021									
		\$ 1,064,598.90									
		\$ 990,076.98									
		\$ 920,771.59									
		\$ 856,317.58									
		\$ 796,375.35									
		\$ 740,629.07									
		\$ 688,785.04									
		\$ 640,570.08									
		\$ 595,730.18									

Alternative 5: Universal Screening of Social Determinants of Health

Reference Sources

10 minutes of a nurses time	nurses hr wage \$34.56	Bureau of Labor Statistics. (2020, March 31). May 2019 National Occupational Employment and Wage Estimates. Retrieved from https://www.bls.gov/oes/current/oes_nat.htm#23-0000								
Virginia population	8,626,207 (population growth 1.27%/yr)	US Census. (2019). State Population Estimates. Census.gov.								
Virginia Hospitalization rate	94 Hospital Admissions per 1,000 Population	Kaiser Family Foundation. (2019). Hospital Admissions per 1,000 Population by Ownership Type 1999 - 2018. Retrieved from https://www.kff.org/other/state-indicator/admissions-by-ownership/								
poverty rate in va:	US Census. (2019). State Population Estimates.									
pop rate in va:	10.70% Census.gov.									
number of people in poverty in VA	8626207									
poverty rate in va:	923004.149									
Medicaid enrollee hospital admission rate: 947.2 visits per 1000 enrollees	Tang, N. (2010, August 11). Trends and Characteristics of US Emergency Department Visits, 1997-2007. Retrieved from https://jamanetwork.com/journals/jama/article-abstract/186383									
number of people who could benefit	874269.5299									
year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
population	8,626,207	8735759.83	8846703.98	8959057.12	9072837.14	9188062.18	9304750.57	9422920.9	9542591.99	9663782.91
hospital admissions	810863.458	821161.424	831590.174	842151.369	852846.692	863677.845	874646.553	885754.564	897003.647	908395.594
total time	8108634.58	8211614.24	8315901.74	8421513.69	8528466.92	8636778.45	8746465.53	8857545.64	8970036.47	9083955.94
total cost	46705735.18	47298898	47899594	48507918.9	49123969.4	49747843.8	50379641.5	51019462.9	51667410.1	52323586.2
	0	0	0	0	0	0	0	0	0	0
discounted	46705735.18	43987975.2	44546622.4	45112364.5	45685291.6	46265494.8	46853066.6	47448100.5	48050691.4	48660935.2
total cost	463,316,277.30									
cost eff	529,9467286									