BENEFIT-COST ANALYSIS OF SECTION 1115 CONDITIONS ON MEDICAID EXPANSION RECIPIENTS

Prepared for the Virginia Department of Medical Assistance Services (DMAS)

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Executive Summary

Virginia recently voted to expand Medicaid eligibility to individuals 19-64 from 0 to 138% of the Federal Poverty Level. Along with this expansion of coverage, the State Legislature directed the Department of Medical Assistance Services (DMAS) to apply for a Section 1115 waiver to impose conditions on Medicaid recipients. These included:

- Monthly Premium Requirements
- Work Requirements
- Co-Payments for Non-emergent Usage of the Emergency Room
- Healthy Behavior Incentives

I conduct a social benefit-cost analysis of the different potential conditions on Medicaid recipients in order to determine how they would change aggregate benefit to society, compared to a baseline of a world with Medicaid expansion without requirements or conditions imposed on recipients. For premiums and work requirements, the main costs consisted of administrative costs and case management costs, along with decreased productivity and financial well-being for those disenrolled as a result of the requirement. The main benefits came from the cost-savings to the Commonwealth in reducing expenditure for coverage, as well as externalities of only providing coverage where individuals value it most and it satisfies a basic need. While this amount cannot be quantified, I conduct a break-even analysis to determine the minimum value to have a non-negative NPV.

For co-payments, the primary cost is that of administration, and the primary benefits are the cost-savings in the reduction of non-emergent ER usage. Given that the premium amount is only $5, this program is not expected to have much of an impact. The key costs for the healthy behavior incentives include administrative costs and the medical expenditure of the healthy behavior itself. The benefits are reduced future expenditures as a result of healthy behaviors. Ultimately, health outcomes don't typically improve with healthy behaviors, in part because the take-up rate of these incentives is very low among Medicaid recipients. I don't conclude any benefits of improved health outcomes.

I do not include transfer payments as part of the benefit-cost analysis, such as the cost of the healthy behavior incentive and any taxes that may result from work requirements, as these represent a direct transfer from the Commonwealth to an individual or vice-versa.

Based on a 25-year time horizon, the following tables summarize the aggregate benefits, costs, and NPV for each alternative, relative to the baseline. Based on the assumption that society has, on average, a greater than $4.75 per person (taxpayer), per year willingness to pay to limit access to Medicaid to those who value it most (willing to comply with conditions indicative of satisfying a basic need), I recommend imposing premiums on beneficiaries, as they also balance equity concerns.

Total Net Present Value of Costs	
Premiums	728,978,865
Work Requirements	2,146,061,924
Co-Payments	165,101,600
Healthy Behavior Incentives	321,949,116
Total Net Present Value of Benefits	
Premiums	103,572,420
Work Requirements	198,834,484
Co-Payments	14,989,830
Healthy Behavior Incentives	85,112,972

Alternative	NPV ($)	Per Person Break Even Amount
Premiums	(625,406,445.20)	$6.24
Work Requirements	(1,947,227,440.22)	$19.44
Co-Payments	(150,111,769.45)	N/A
Healthy Behavior Incentives	(236,836,144.11)	N/A

Introduction:

In 2016, over 700,00 Virginians under the age of 65 lacked health insurance, and the majority of them came from low-income families (Skopec & Aarons, 2018). Many of these individuals went without access to healthcare and preventative health. Prior to 2019, low-income adults previously without children were not eligible to receive any Medicaid benefits in the Commonwealth of Virginia. Access to Medicaid health insurance among parents, seniors, and people with disabilities was also significantly limited. While federal funding was available to help assist in covering the cost of extending Medicaid health benefits to additional low-income individuals, lawmakers in Virginia opted not to expand the coverage, citing the additional costs to the state, until May 2018 when the State Legislature voted to expand Medicaid coverage to low-income residents making up to 138% of the Federal Poverty Line (FPL) (Vozella & Schneider, 2018).

In addition to passing Medicaid Expansion, the governor and the state legislature instructed the Virginia Department of Medical Assistance Services to apply for a demonstration waiver under Section 1115(a) of the Social Security Act in order to introduce conditions or requirements on Medicaid recipients, including work requirements (Hinton, Antonisse, Hall, Musumeci, & Rudowitz, 2019; Neale, 2018; Virginia Department of Medical Assistance Services, 2018).

Need for Regulatory Action:

The underlying reason for taking such action is a desire for redistribution of resources. In this case, providing health insurance coverage to low-income individuals. The need for regulatory action stems from legislation passed in the Virginia General Assembly. The Virginia 2018 Appropriations Act directed the Department of Medical Assistance Services (DMAS) to expand Medicaid coverage in Virginia to newly eligible non-disabled, non-pregnant adults aged 19 to 64 with incomes up to 138% FPL. It also directed DMAS to seek a waiver from CMS to introduce new program features and conditions on recipients, designed to "empower individuals to improve their health and well-being and gain employer-sponsored coverage or other commercial health insurance coverage, while simultaneously ensuring the program's long-term fiscal sustainability," the guiding mission of the new requirements (Office of Health and Human Resources, 2018).

The entire purpose of a Section 1115 waiver and imposing conditions on Medicaid recipients is to make the program more efficient, i.e. incentivizing efficiency improving behaviors, or distributing scarce resources to those that value them most. There is also a political need for such action. Policymakers assert that there is value in directing usage or conditions for usage of benefit systems, such as demonstrated by the push for "workfare" programs amongst politicians.

Baseline and Policy Alternatives:

This cost-benefit analysis will seek to explore and examine each of the conditions potentially imposed on program recipients relative to a baseline impact of Medicaid Expansion. While by law, pending approval from CMS, some conditions must be applied to program recipients[1], a baseline of Medicaid expansion without any conditions will be used. This allows us to see what the conditions look like compared to a world without requirements, in order to determine if any conditions have a positive net-present-value to society. Using Medicaid expansion without requirements is also the most

[1] This means that even if all potential alternatives have a negative NPV, since state law requires that one be implemented, the alternative with the least negative NPV would be recommended, even though it may result in a net "loss" for society.

defensible baseline, in that it doesn't pre-suppose any specific proposed condition to Medicaid recipients. The entire analysis will be analyzed with the scope[2] being the Commonwealth of Virginia.

Time Horizon

There is significant uncertainty as to the duration of these requirements. Virginia is currently applying for a waiver under Section 1115 of the Social Security Act to pilot these programs. The length of the demonstration waiver is unknown, as it has not been granted yet. For the sake of this analysis, I assume a time horizon of 25 years, but will also conduct a sensitivity analysis using a time frame of 10 years.

Discussion of the Baseline

Given that the Commonwealth has already implemented Medicaid expansion, and the focus of this analysis itself is on requirements that would be imposed on Medicaid recipients, I will not be conducting a Benefit-Cost analysis on Medicaid expansion. Rather, I will use a world with Medicaid expansion but without any conditions imposed on program recipients as a baseline to which each alternative will be compared. Any changes that occur are considered as changes to the baseline world of Medicaid coverage without conditions. Though imposing no conditions is not necessarily a viable option, as the State Legislature has dictated that some conditions must be applied to program recipients, it is a worthwhile baseline, as it does not presuppose any condition as favored. Additionally, in the event that the courts strike down the recommended condition, or CMS fails to approve the waiver, the baseline is what would occur.

While the baseline will not be formally costed out, since it is not an alternative that the Commonwealth may legally proceed with, I will simply consider the benefits and costs below, but not formally in the attached spreadsheet.

The primary costs for the baseline are the costs the state must pay to provide Medicaid coverage to the expansion population, the administrative costs of Medicaid expansion, the ACA Insurance Tax, and crowd-out of private insurance markets. These have all been quantified by Virginia's Joint Legislative Advisory Commission. Note, that since the scope of this analysis is Virginia, all of the costs will be looked at as what stakeholders in Virginia would gain or lose.

The benefits that come from Medicaid expansion include the value of Medicaid coverage to individuals, savings from improved health outcomes (reduced mortality and morbidity), as well as a reduction in ER usage and uncompensated care (though this is considered a transfer from the burden of the cost being on the Commonwealth to the individual). Providing health insurance to less fortunate individuals provides a benefit known as the basic needs externality. The basic needs externality asserts that humans derive benefit from seeing others (especially the less fortunate) with their basic needs met (Harberger, 1984). While the value of this basic needs externality is essentially unquantifiable, a break-even analysis would've been performed in order to determine what the minimum value of the externality would have to be in order for this project to have a non-negative net-present-value. We know that the actuarial value of Medicaid is the lower bound on how society values this provision of care, but given that very little literature exists on the consumption value of healthcare and given that

[2] This has very important implications for the benefits and costs associated with disenrollment. The state is likely to face all of the costs associated with disenrollment of an individual (and the negative externalities thereof), yet they only pay 10% of the cost of Medicaid coverage, so reduction in coverage doesn't provide as significant cost-savings, as would be the case if they bore the full burden of coverage.

insurance prices are not set by a competitive market, it would be inappropriate to assume the actuarial value of Medicaid as the social value for this benefit-cost analysis.

The following are the other alternatives that will be considered in the BCA. A broader discussion of each alternative, as well as descriptions of the large benefits, costs, and other points of note will follow:

- Work/Community Engagement Requirements
- Premiums for Medicaid Insurance Coverage
- Co-Pays for Non-Emergent Usage of the Emergency Room
- Healthy Behavior Incentives

Premiums:

This requirement would involve recipients with income between 100% and 138% of the federal poverty line, without any other exemptions (as stated in the TEEOP program, which can be seen in Appendix Three), to pay a monthly tiered premium based on income in order for the individual to receive health care coverage. Per state legislation, DMAS' current proposed sliding premium can be seen in the figure below:

Proposed Monthly Premium Amounts by Income Level

Monthly Income	Premium Amount
100-125% FPL	$5 per month
126-138% FPL	$10 per month

Medicaid coverage will be available on the first day of the month following the receipt of the premium payment which can be paid directly by the recipient or on behalf of an enrollee by a third party. To ensure that those who are un-banked can pay, the Commonwealth will accept payment via a variety of mechanisms, pre-payment, cash, money orders, etc.

Enrollees who fail to make their payments after a three-month grace period will have their coverage suspended. Coverage will be reinstated after making one premium payment, meeting an exemption criterion, or having monthly income decrease to less than 100% FPL. This alternative has the objective of trying to raise some money to cover the costs of Medicaid coverage to help make the program cost-sustainable but also to make the program sustainable by limiting access to the program to those who do pay their premiums (Virginia Department of Medical Assistance Services, 2018).

The primary costs of premiums are administrative costs, increased cost of morbidity and mortality from not obtaining care (due to not having coverage) as well as an externality of decreased financial stability and substituting primary care for more expensive care (such as ED visits).

Number of Individuals Subject to the Requirements

Much of the cost of this program is dependent on the number of individuals that will be subject to the requirement, as well as the number of individuals who churn off of these programs due to the requirements. In order to estimate the number of individuals required to comply with this requirement, I utilized 2017 American Community Survey (ACS) data to define the expansion population and those subject to this requirement in a procedure described in Appendix One to

estimate the number of individuals who would be subject to this requirement and obtained an estimate of 51,975 individuals.

In order to project what proportion of individuals would churn off of Medicaid, I look to a state that has already implemented such work requirements as a baseline. According to the Commonwealth Institute, in Indiana, roughly 29% of the population subjected to premium requirements either never received or missed out on continuous Medicaid coverage because of the new requirements (Stewart, Mejia, & Cassid, 2018), therefore I will use this assumption in determining the impacts on individuals who attrite from Medicaid due to non-compliance with premiums.

Using trends from Indiana, (the proportion of individuals disenrolled or not obtaining coverage after signing up due to failure to pay premiums) I assume that roughly 12.75% of individuals eligible for Premiums will be disenrolled or deterred from signing up, to a number of 6,627 individuals. In the second year, I assume that roughly 18.47% of individuals will be disenrolled or deterred from signing up, to a total of 9,600 individuals. Finally, for years three and on, I assume that 29% of individuals will be deterred or disenrolled, as was projected by the Commonwealth Institute, equating to 15,073 individuals. The number of individuals subject to these requirements and the number disenrolled is crucial components of the analysis, as most benefits and costs are scalars of these numbers. Therefore, additional consideration will be given to these numbers in the sensitivity analysis.

Administrative Costs

For administrative costs of program operation, I assume a fixed administrative cost of roughly $10 million per year. I derive this from the cost of operation of Arizona's Medicaid premium and co-payment collection program (which works out to roughly $9.96 million[3]) (Arizona Health Care Cost Containment System, 2006) In terms of variable costs, Arkansas Center for Health Improvement's Interim Evaluation Report suggested that the per member per month (PMPM) cost for administering the Medicaid plan was approximately $58.64 (inflated to 2019 terms), which seems to be a good comparative metric to what Virginia could expect to see (Zylla, Planalp, Lukanen, & Blewett, 2018). These encompass the main administrative costs of the program.

Transfers

A main cost (and benefit) of premium payments come from the amounts collected by the Commonwealth and paid by program beneficiaries for the insurance coverage. However, this represents a transfer from the individual to the government and would net out to no overall change in cost or benefit, therefore, they will not be included on the spreadsheet.

Impacts on Health and Financial Well-being

Those that lose coverage as a result of non-compliance with premiums impose additional costs. The two largest impacts of the loss of insurance come from the decrease in financial stability and impacts on health outcomes. Losing Medicaid coverage is associated with an increase in severely delinquent debt by roughly $2,666 in 2019 terms (Argys, Friedson, Pitts, & Tello-Trillo, 2017). Severely delinquent debt is a precursor to bankruptcy, which would impose a negative externality on the rest of society, as this cost would eventually be borne by the public.

Losing Medicaid coverage is also associated with declines in health outcomes. The proxy I use for determining the impact of decreased health outcomes is loss of productivity due to being incapacitated. Tello-Trillo (2016) finds that the impact of losing Medicaid coverage is associated with

[3] The entire annual program cost (in 2019 terms) is $19.92 million, which covered both premiums and co-pays, so I assume that half the cost ($9.96 million) could be attributed to premiums.

an increase in the number of days incapacitated per month by roughly 1.2 days (Tello-Trillo, 2016). Assuming that their wage[4] is $7.40, and an eight-hour workday, this would represent a loss of productivity of roughly $852.48 per person per year.

Disenrollment and Deterrence:

The main benefit of this program is the decreased expenditure by the Commonwealth in terms of costs of coverage. Since the scope of this analysis is simply at the state level, I will only consider the state's portion of savings from disenrollment from Medicaid. I assume that administrative costs for Medicaid are fixed and not substantially changed with disenrollment, any costs for processing disenrollment have already been accounted for in the administrative costs of premiums. Therefore, the cost savings to the Commonwealth would be their portion of Medicaid coverage.

Given the complexity of the health insurance market, it is difficult to take the observed price of insurance as the willingness to pay or value of it. There is a consumption value to the insurance in addition to the financial protection that it provides, yet there is a lack of literature quantifying the dollar impact of this value. Health insurance provides positive externalities, therefore there is a difference between the cost of treatment and its social value. The actuarial cost of Medicaid coverage represents the upper bound on what an individual will get from the coverage, however, it is a lower bound on what society values the insurance, especially because of Harburger's basic needs externality, i.e. the public derives value from providing Medicaid coverage (a basic need) to the neediest members of society. Given that we don't have a good estimate of the actual social value of Medicaid coverage, I will use the actuarial cost that the state pays as the best estimate, though it is important to note that this amount is the lower bound on the social value of such care. This value works out to be $6,355 in 2019 terms (Wolfe, Rennie, & Truffer, 2017). It's important to note that as part of Medicaid expansion, the Commonwealth is only responsible for roughly ten percent of the cost of Medicaid coverage (Hayes, Coleman, Collins, & Nuzum, 2019).

Externality of the Efficient Allocation of Resources

Aside from the cost-savings that the Commonwealth derives from reducing the amount spent on health insurance, society derives some benefit from the externality of not covering those for whom the coverage is not most beneficial. A rational individual will obtain Medicaid coverage if the benefit they gain from the insurance exceeds the cost of compliance (in this case, the premium). Given scarce resources, society obtains a benefit by not allocating insurance coverage to those who don't value Medicaid coverage enough to pay a nominal premium. While this externality is nearly impossible to quantify, I conduct a break-even analysis to determine what the value of this externality would have to be in order to have a non-negative NPV for imposing premiums.

Work Requirements:

This alternative would require an individual to either work a certain number of hours per week (around 20 hours per week) or participate in activities that might lead to a job including job search, education and job training, activities that support job readiness, or volunteer activities. This

[4] In order to determine hourly wage, based on the ACS analysis, among the working population of individuals subject to premium requirements, I divided the average annual wage income by the average number of hours worked per week times 50 weeks to get $7.40. Additionally, given the tightness of the labor market, for those who are not working, we can attribute this hourly wage to the opportunity cost of their leisure.

requirement would apply to non-disabled, adults without dependents making up to 138% of the FPL, and would exclude those with certain exemptions[5].

In order to determine the number of individuals who would be impacted by the work requirements, I conducted an analysis using ACS data, described in Appendix One. I determined that 142,807 individuals would be subject to work requirements, and of them, 61,007 are currently unemployed. I use these metrics throughout the remainder of the analysis to determine the impacts on the individuals who lose coverage as a result of the work requirement, as well as to calculate costs of administration and compliance. JLARC also produced an estimate of the number of individuals that would be subject to work requirements, which would be 65,295 in the first year of implementation, 102,706 in the second year of implementation. I assume that by the third year we will see the full enrollment of 142,807 individuals subject to work requirements. Additionally, JLARC projects the following number of individuals to attrite from Medicaid coverage due to failure to comply with work requirements in the first two years: 13,364 and 21,576, respectively (Joint Legislative Audit and Review Commission, 2018). For the number of individuals expected to subject to the requirement in the subsequent year, I subtract the number of individuals expected to be disenrolled. Appendix Two provides more detail regarding the total number of individuals expected to churn off of Medicaid. I project that roughly 28,596 individuals will churn off, based on the similar imposition of work requirements in Arkansas. JLARC projects that roughly 50,000 individuals will churn off of Medicaid for non-compliance with work requirements, therefore I will check both estimates in the sensitivity analysis.

Administrative Costs

The primary costs of the work requirements would be the administration of the requirements, the IT projects, and support to create a tracking system, case management, and the time burden on individuals of reporting their completed work, or fighting appeals (included in case management on the administrator side).

Virginia's Joint Audit and Review Commission has projected the cost for information technology, systems, and support personnel, for the first three years so those will be the main support costs., I assume that the start-up costs will be higher for the first three years, as projected by JLARC, and then the cost in FY2022 ($1.2 million) will be the fixed cost for the remaining years. I assume that every ten years, the system will require an update, equivalent to the start-up cost of the program ($3.3 million).

Case management is another major cost of the program. JLARC estimates that the average cost of case management for all individuals subject to work requirements will range between $341 and

[5] Exemptions for those subject to the work/community engagement requirements would exist for children, part-time to full-time students, individuals aged 65 and older, individuals enrolled in both Medicaid and Medicare, individuals who have blindness or another disability, pregnant and postpartum women, foster care children under age 26, primary caregivers for dependent children, primary caregivers for disabled adult dependents or non-dependent relative, medically frail individuals, individuals fulfilling SNAP and/or TANF work requirements, individuals with acute medical conditions that would prevent compliance, institutionalized individuals, those with a serious mental illness or disabling mental disorder, as well as victims of domestic violence. Exemptions would also exist for temporary hardships of hospitalizations, incapacitations, births, deaths, severe inclement weather, family emergency, change in family living circumstances, high unemployment rate, lack of workforce programs, natural disasters, etc. (Virginia Department of Medical Assistance Services, 2018). More information regarding exemptions can be found in Appendix three.

$1,080 per person, per year. For baseline analysis, I use the average of these two expected costs, as JLARC does, but in sensitivity analysis, I will check both relative extrema, given the uncertainty.

Employee and Employer Cost of Compliance

In addition to the administrative burden that the Commonwealth experiences, individuals and employers experience a cost of complying with the work requirement, in terms of reporting and confirming their employment status, wages, etc. Under the Paperwork Reduction Act of 1995, government agencies that want to collect information from individuals must publicly report the expected time burden of compliance. While there exists little information regarding the expected time burden of complying with work requirements presently from the Office of Information and Regulatory Affairs, as a proxy, I utilize the expected nonbusiness taxpayer average time burden of filing Tax Form 1040. While filing taxes are thought to be more complicated than reporting work and complying with a work requirement, since work requirements are a monthly burden, I feel it is relatively reasonable to assume a paperwork compliance burden of 7 hours per year. Assuming an hourly wage rate of $7.40, this works out to a total of $51.80 per person, per year.

Impacts on Health and Financial Well-being

Very similar to premiums, those that lose coverage as a result of non-compliance with work requirements experience additional costs. The two largest impacts of the loss of insurance come from the decrease in financial stability and impacts on health outcomes. Losing Medicaid coverage is associated with an increase in severely delinquent debt by roughly $2,666 (in 2019 terms). Severely delinquent debt is a precursor to bankruptcy, which would impose a negative externality on the rest of society, as this cost would eventually be borne by the public. This impact is effectively an estimate of the impact of losing Medicaid coverage scaled up by the number project to lose coverage.

Losing Medicaid coverage is also associated with declines in health outcomes and increase usage of the emergency room. The proxy I use for determining the impact of decreased health outcomes is loss of productivity due to being incapacitated. The impact of losing Medicaid coverage is associated with an increase in the number of days incapacitated per month by roughly 1.2 days (Tello-Trillo, 2016), assuming that their wage[6] is $7.40, and an eight-hour workday, this would represent a loss of productivity of roughly $852.48 per person per year.

Impacts of Jobs and Wages

While the primary goal of this policy is to increase employment, for the sake of this benefit-cost analysis, job creation or employment are not considered social benefits. Given that the Commonwealth of Virginia is in a relatively tight labor market[7] (approximately 3.2 percent), it is

[6] In order to determine hourly wage, based on the ACS analysis, among the working population of individuals subject to premium requirements, I divided the average annual wage income by the average number of hours worked per week times 50 weeks to get $7.40. Additionally, given the tightness of the labor market, for those who are not working, we can attribute this hourly wage to the opportunity cost of their leisure.

[7] Due to the relative newness of Medicaid expansion and work requirements, there isn't much literature as to where individuals who are subject to work requirements live in Virginia. If those who are subject to work requirements are located disproportionately in counties where the unemployment rate is very high, it is reasonable to assume that the benefit of work would be roughly half the wage. Since we currently lack data on this, it is outside the scope of this benefit-cost analysis, but should be considered in future BCAs with available data.

reasonable to assume that individuals who are not working are primarily doing so because of choice, and therefore we can attribute their hourly wage to the opportunity cost of leisure. For individuals who gain employment, they do so because the benefit of Medicaid coverage plus the opportunity cost of leisure exceeds their reservation wage, but gaining the job itself does not make them better off.

Tax Revenue

Given that any tax revenue collected as a result of such a program is just a transfer from an individual to the Commonwealth, it does not create any change in aggregate benefits, therefore, it will be excluded from this analysis.

Reduction in Cost of Coverage

The main financial benefit to the Commonwealth of Virginia are the reductions in their cost of providing coverage to individuals who churn off of Medicaid coverage. For a discussion of the social value of insurance, see the Disenrollment and Deterrence section under Premiums. The impact for work requirements will be Virginia's portion of the actuarial cost of Medicaid coverage for each individual disenrolled, as I assume that costs of administering Medicaid are fixed and not reduced by disenrollment, the administrative costs of processing disenrollment are included in case management costs. Disenrollment reduces the Commonwealth's expenditures (costs) by their portion of the actuarial value of Medicaid coverage (a poor proxy, but the most reasonable one that we can evaluate) per each individual disenrolled. The numbers of individuals projected to be disenrolled (stated at the beginning of this section) will be used to obtain a cost-reduction value.

Externality of the Efficient Allocation of Resources

When an individual is offered Medicaid coverage as a condition on working, their effective wage becomes their perceived value of Medicaid plus their actual wage (minus their paperwork burden of reporting). If an individual's reservation wage is above this new effective wage, we assume that providing them coverage no longer satisfies the basic needs externality. As a result, society derives value from this externality of not allocating scarce resources where it does not satisfy the basic needs externality. This amount is very difficult to quantify, so a break-even analysis will be conducted in order to find the minimum value that such an externality would need to be in order to have a positive NPV for this alternative.

Co-Payments

This requirement would require individuals with income between 100% and 138% of the federal poverty line, who don't qualify for any of the TEEOP exemptions (seen in Appendix Three), to be subject to co-pays for non-emergent usage of the emergency department as defined by the Prudent Layperson Standard[8] (PLP). The co-pay amount of $5 seeks to serve as a slight disincentive[9]

[8] This standard assesses risk based on the patient's symptoms, rather than final diagnosis, e.g. if a patient has chest pain but turns out to have a non-urgent medical condition (like a hiatal hernia), a co-pay wouldn't be assessed because the patient presented with a symptom that is considered an emergency (American College of Emergency Physicians, 2018).

[9] While $5 does not seem like a significant amount, among individuals in the RAND Health Insurance Experiment, those without cost sharing had 42% higher ED expenses than those with (O'Grady, Manning, Newhouse, & Brook, 1985). Evidence also suggests a significant, negative effect of the presence of a Medicaid copayment policy on the likelihood that an ED visit is non-urgent, with a maximum co-payment amount of $6 (Sabik & Gandhi, 2016). "Nominal" ($1-3) co-payments have

for the non-emergent or avoidable usage of the emergency room which would not be assessed at point-of-service, but rather billed later.

An important consideration of this alternative is the number of individuals that will be subjected to the requirement. The population subject to this requirement is, by definition, exactly the same as premium payments. I will utilize the number of individuals subjected to premium requirements, determined from the ACS analysis, 51,975 for co-payments as well.

Administrative Costs

For administrative costs of program operation, I assume a fixed administrative cost of roughly $10 million per year. I derive this from the cost of operation of Arizona's premium and co-payment collection program (which works out to roughly $9.96 million[10]) (Arizona Health Care Cost Containment System, 2006). In terms of variable costs, Arkansas Center for Health Improvement's Interim Evaluation Report suggested that the per member per month (PMPM) cost for administering the Medicaid plan was approximately $58.64 (inflated to 2019 terms), which seems to be a good comparative metric to what Virginia could expect to see (Zylla et al., 2018). These encompass the main administrative costs of the program. Since co-pays will be collected after the service is performed, we don't consider the cost to providers of collecting the payment, and that is instead considered as part of the administrative costs of the program itself.

Transfers

The amount collected for each co-pay ($5) is simply a transfer from an individual to the Commonwealth, and thus does not result in an aggregate change in social benefit, so it is excluded from the analysis. The transaction cost of these co-payments is included in the administrative cost of operation.

Health Impacts

The costs of this program hypothetically include impacts on health. However, given that this premium only applies to non-emergent usage of the emergency room, it is unlikely that there will be very many impacts. While there is ample evidence that says the co-payments for preventative care reduce its utilization (Domino et al., 2011; Guy Jr, 2010; Ku, Deschamps, & Hilman, 2004; Sen et al., 2014; Stoecker, Stewart, & Lindley, 2017), the same is not true for ER utilization. Given that premium payments do not apply to primary care, our main concern is with regards to ER usage, and co-pays, on average, were found to have very little impact on ER utilization, the one mechanism where they could've impacted health (Siddiqui, Roberts, & Pollack, 2015). There is little evidence to indicate that ER co-payments cause individuals to substitute towards more preventative care, or that there is any improvement in terms of health outcomes. There is also little evidence to indicate that the presence of nominal co-payments ($5) create any impact on financial well-being.

Reduction in Non-Emergent Usage of the Emergency Room

The main goal, and thus the benefit, of this alternative is to reduce non-emergent usage of the emergency room, given that emergency room visits to treat primary care have been found to be 320%

been shown to reduce health care access and utilization, so by imposing a co-payment on ED usage, but not on regular medical services, there will hopefully be a deterrence in utilization of the Emergency Room, providing a cost-savings to the Commonwealth (Ku & Wachino, 2005; Sabik & Gandhi, 2016).

[10] The entire annual program cost (in 2019 terms) is $19.92 million, which covered both premiums and co-pays, so I assume that half the cost ($9.96 million) could be attributed to premiums.

to 728% more expensive than those treated in primary care clinics (McWilliams, Tapp, Barker, & Dulin, 2011). In order to estimate the cost-savings from enrolling in this option, I consider a few facts. Those living in deprived areas, the most likely to be on Medicaid, have the highest likelihood of inappropriate attendance at the emergency room (McHale et al., 2013). Roughly 44.5% percent of Medicaid recipients had an ED visit at least once a year, and approximately 25% of Medicaid recipients had a low-severity ED visit at least once per year (Kim, McConnell, & Sun, 2017).

The cost-savings comes from the difference in cost that it would cause to treat someone not in the ER compared to being in the ER. The estimated additional cost of services at the emergency room compared to the non-ED charge (the incremental cost of a non-emergent ED visit) for all conditions was found to be $93.85 in 1987 terms. Inflated to 2019 terms, using the Medical CPI[11], this works out to be $360.41 (Baker & Baker, 1994). Co-pays for non-emergent usage of the emergency room only decreases the likelihood that an ED visit is non-emergent by 6.2 percentage points, or 38% relative to when a co-payment isn't in place (Sabik & Gandhi, 2016).

Medicaid recipients in Oregon, on average, utilized the emergency room 1.02 times per year (Taubman, Allen, Wright, Baicker, & Finkelstein, 2014). This means that this alternative would reduce the number, on average, of non-emergent ER visits each person has by 0.062 visits per year. With a savings of $360.41 per visit, this works out to a savings of $22.77 per person per year, on average.

Healthy Behavior Incentives

This requirement would involve encouraging Medicaid recipients to engage in some sort of healthy behavior with the goal of reducing their future need for healthcare. According to the Section 1115 application, this includes wellness exams, mammograms, pap seams/cervical cancer screenings, colon cancer screenings, flu vaccinations, nutrition counseling, tobacco cessation counseling, substance abuse disorder treatment, etc. (Virginia Department of Medical Assistance Services, 2018). Instituting such a requirement would help achieve the mission of "empower[ing] individuals to improve their health and well-being," by completing activities designed to improve their health outcomes.

Compliers with the healthy behavior incentive will receive a $50 limited-use Health Rewards gift card that can be used to pay for non-covered medical or health-related products and services, such as eyeglasses, vitamins, nutritional supplements, etc. They will only be eligible for this if they have paid any applicable co-pays or fees and complete a healthy behavior.

In Iowa, less than ten percent of enrollees with incomes above the poverty line engaged with the incentive, and only 18 percent in Michigan. Virginia has not allocated any funding specifically for outreach and advertising of this alternative (Stewart et al., 2018), so I assume $3 per person, per year in mail-home advertising. Based on these estimations, I estimate that roughly 14% of individuals would engage in healthy behavior incentives. I utilize JLARC's estimates of 190,694 enrollees in the first year of program operation, 298,658 enrollees in the second year of program operation, and CBPP's estimate of 342,000 expected enrollees in the Medicaid expansion program for years three and onward.

Administrative Costs

There aren't abundant examples of how much specific healthy behavior programs cost, due to the variety of these types of programs and unique intricacies of their operation. However, Arkansas had a similar program of health independence accounts, where individuals would contribute to

[11] Medical costs have outpaced the costs of most other items in the market, so I utilize the Medical CPI, especially given the length of time that has passed since this study.

accounts and then would receive a purchasing card that they could use to pay various medical-related expenses. This would be similar to what Virginia would implement, with the exception of having healthy behavior verification take the place of collection of account contributions. The annual cost of Arkansas' program was approximately $9.5 million in 2019 terms, which seems to be a fair estimate of what Virginia can expect to pay in order to support this program (Zylla et al., 2018).

Cost of the Incentive

Aside from the administrative costs, the cost of the incentive itself is likely to be one of the largest costs associated with the program. The total amount is highly dependent on the number of individuals who utilize the healthy behavior incentive program. Notoriously, these programs have very low utilization rates among the Medicaid populations, yet there is significant variability that warrants further analysis of this in the sensitivity analysis. The cost will be $50 per individual who successfully completes the incentive program. This incentive, though, is a transfer from the Commonwealth to the individual, therefore it creates zero net impact.

Increased Cost of Care

Incentivizing individuals to engage in healthy behavior does require the Commonwealth to pay the additional costs associated with healthy behavior, i.e. the cost of a flu vaccine, a mammogram, etc. The best evidence to indicate the change in the cost of care among those incentive to engage in a healthy behavior comes from a randomized controlled experiment in Virginia among low-income individuals. The following chart shows the changes in the cost of care by incentive type (Bradley, Neumark, & Walker, 2017):

	Difference in Median Cost of Care from Untreated Controls	
Incentive	$25 Incentive	$50 Incentive
Change in Health Expenditures	$333	$327

Compared to those who were not offered an incentive, those offered an incentive had median healthcare costs roughly $327-$333 higher during the incentive period.

Cost-Savings of Healthy Behavior

Based on the same RCT as described above, the authors looked at the change in post-incentive median total costs for each incentive, compared to the change in total costs for the control group. The authors found that the $25 incentive produced savings of $120 more than no incentive, and the $50 incentive produced $147 in savings more than no incentive (Bradley et al., 2017).

	Change in Median Cost of Care	
Incentive	$25 Incentive	$50 Incentive
Change in Health Expenditures, relative to the change for untreated controls	-$120	-$147

Improvements in Health Outcomes

The other benefit of healthy behavior incentives includes the health benefits that come with engaging in healthy behaviors. Evidence shows that while healthy behaviors do increase utilization

of primary care, they don't necessarily result in substantial improvement in health. There are no significant improvements in smoking cessation or obesity rates with Medicaid Healthy Behavior Incentive Programs (Huf, Volpp, Asch, Bair, & Venkataramani, 2018). Evidence is fairly robust to indicate that positive health impacts from these programs are sparse, therefore I don't attribute any health outcome benefits of this alternative.

Distributive Impacts and Equity

Although not a quantified cost, it is important to consider what groups are disproportionately impacted with the introduction of each of these requirements. In order to study the distributive impacts, as part of my ACS analysis, I looked at various characteristics of each of the populations likely to be exposed to the conditions and compared them to the baseline population. Appendix four contains demographic statistics of the baseline group, those who are eligible for Medicaid Expansion. Appendix five contains demographic statistics of those impacted by co-pays and premiums, and Appendix six does so for Work Requirements.

Work Requirements

Individuals with disabilities and persons of color face disproportionate challenges in meeting requirements and face disproportionate recourse under work requirement programs (Tipirneni et al., 2017), which could result in wider disparities in health insurance coverage and health outcomes (Antonisse & Garfield, 2018). Based on the ACS analysis, those potentially subject to work requirements tend to look relatively similar to the Medicaid expansion population over the analyzed factors (which can be found in appendix six), with the exception of looking older.

When breaking down the population of individuals subject to work requirements into those who are currently working and those who aren't, I observe more stark differences. Those who are subject to work requirements and are employed are relatively younger than those not employed, and relative to the expansion population, much more likely to have higher income levels, relatively more educated, and are less likely to lack access to a vehicle. Those subject to work requirements and not employed are predominantly older, lower income, lack higher education (above high school), are more likely to lack internet access and access to a vehicle. Across both populations, there does not seem to be much of a racial disparity in terms of those subject to work requirements.

Premiums and Co-Payments:

Premiums and co-pays would apply to all individuals between 100-138% of the FPL without the exemptions that apply to work requirements. Compared to the entire Medicaid expansion populations, premiums would apply to a disproportionately older population, with the relative same racial breakdown, with lower rates of higher education, that are more likely to be in the labor force and employed (working 20+ hours per week and 40+ weeks per year), but are much less likely to lack access to a vehicle. These aren't factors that should significantly deter these program beneficiaries from complying with the requirement. Since these individuals qualify for the same exemptions as work requirements but restrict the population to only those over 100% FPL, they have a more equal impact than work requirements.

Healthy Behavior Incentives

Given that healthy behavior incentives apply to all individuals eligible for Medicaid expansion, there aren't significant equity concerns. The implications for equity come with participation. Given low awareness and participation rates, it is likely that those who will benefit from these incentives are individuals with greater access to transportation and the internet in order to learn about and comply

with the incentives. In theory, everyone is eligible, in practice, much more emphasis will need to be placed on communicating the program in order to ensure equitable access.

Discussion of Results

The results of the Benefit-Cost Analysis, in terms of Net-Present Value of the benefits minus the costs for each alternative, are listed below:

Alternative	NPV	Annual Per Person Breakeven Amount	Annual Per Beneficiary Breakeven Amount
Premiums	$ (625,406,445.20)	$6.24	$1,017.51
Work Requirements	$ (1,947,227,440.22)	$19.44	$1,153.02
Co-Payments	$ (150,111,769.45)	N/A	N/A
Healthy Behavior Incentives	$ (236,836,144.11)	N/A	N/A

It appears that no alternative has a positive net-present-value, typically indicating that none of the actions should take place, as it would represent a net loss to society. For two alternatives (premiums and work requirements), a significant portion of the benefits are the externalities of not spending money where it doesn't satisfy the basic needs externality and allows for efficient utilization of scarce resources. This benefit is very difficult to quantify, so instead, a breakeven analysis was conducted. I determined the amount of money that would be required in order for the alternative to have a non-negative NPV, and then computed the annual annuity payment that would be required, given a 7% interest rate and a time period of 26 years (one payment now, plus one for the remaining 26 years of the program). I divided this annual annuity payment by the number of Virginia residents (annual per person breakeven amount) and the number of program beneficiaries (annual per beneficiary breakeven amount).

If society has a willingness-to-pay to ensure that resources are only provided to those that satisfy the basic needs externality of more than $6.24 per person, per year, then premiums will be considered the optimal condition, as that would indicate a positive net-present-value, indicating that society derives more benefit from the condition, compared to without it. Based on a cross-over analysis, the minimum value that society must place on the externality in order to for premiums to overtake Co-Payments as the favored option (least negative NPV) is $4.75 per person, per year. If we believe that society does not place a value on such an externality, then, we would argue that none of these programs should be implemented. Since the Virginia legislature has mandated that a condition be imposed, the condition with the least negative NPV should be selected, in this case, requiring co-payments for non-emergent usage of the emergency room.

The assumption that society doesn't place a value on ensuring that scarce resources are effectively utilized and allocating public benefits only to those for whom they meet an otherwise financially unattainable basic need doesn't seem to have much weight. I believe it is reasonable to assume that individuals, on average, have a willingness to pay greater than $4.75 per year in order to preserve public benefits only for those for whom the benefit satisfies a basic need, and to ensure for those who aren't willing to comply with requirements (or for those that don't value the care) aren't unnecessarily benefiting from a public program. Exceeding a willingness to pay of $4.75 per person per year would make this alternative preferred to all others (least negative NPV), and if society, on average, has a willingness to pay of greater than $6.24 per person, per year, this would indicate that

this alternative would have a positive NPV, tending to indicate that it should be pursued as a benefit enhancing program.

The break-even amount for the externality associated with imposing work requirements is roughly three times larger than that for premiums. The only case in which work requirements would be preferred is if there was a significant difference in the externality associated with society valuing "efficient allocation" of Medicaid for those for whom it satisfies the basic needs externality. The argument could be made that society derives a greater externality from seeing people working in order to receive Medicaid coverage than paying premium payments, doubt exists as to whether this is three times larger than the general condition of incentivizing efficient allocation of resources. Also, work requirements for Medicaid coverage have been found to improve job-searching population, and increase the number of individuals searching for work, but does not change the likelihood of employment for nearly 90 percent of those who might enroll in Medicaid (Sommers, Fry, Blendon, & Epstein, 2018). In similar programs that require work in exchange for a benefit or entitlement (such as SNAP), increases in employment are found to be scarce and very small if at all, between a 0 to 2 percent increase (Harris, 2019). Given that we don't even see much of an increase in employment as a result of Medicaid expansion, it is reasonably safe to assume that the externality associated with work requirements will not outweigh that of premiums, and therefore premiums would be preferred to work requirements.

Sensitivity Analysis

There exists a significant amount of uncertainty in many of the numbers utilized for this analysis that warrants a sensitivity analysis to see if changing the inputs alters the outcome of the benefit-cost analysis. The following changes from the baseline assumptions were tested. Full results can be seen in the attached spreadsheet:

- Used a 3% and 5% discount rate, rather than a 7% discount rate
- Used JLARC's estimate of 42,000 individuals subject to premiums and co-pays, rather than 51,975 as predicted by the ACS analysis
- Used JLARC's estimate of 50,00 individuals disenrolled as a result of work requirements, rather than 28,596 as predicted by the ACS analysis
- Used JLARC's estimate of 120,000 individuals in the work requirement population, rather than the 142,807 as predicted by the ACS analysis
- Used upper and lower bounds ($381 and $1,080) as the per person cost of case management for work requirements
- Used 10% and 18% participation rates of healthy behavior incentives
- Changed the time horizon from 25 years to 10 years
- Changed the variable annual cost of premium management to $50 and $200.

These changes did not produce significant changes in results. Throughout all of them, co-payments had the least negative NPV. The cross-over amount of the externality associated with premiums ranged from $3.83 per person per year (pppy) to $4.79 pppy. The break-even amount to have a non-negative NPV ranged from $5.29 pppy to $6.94 pppy.

The results of the sensitivity analysis would tend to indicate that the results are relatively stable and not as sensitive to minor uncertainties in terms of the number of individuals enrolled and the cost of managing the programs. This helps support the idea that as long as the public's value of the externality associated with premiums is greater than the cross-over value, premiums should be chosen, and if it exceeds the break-even value, such a condition is benefit enhancing.

Recommendation and Discussion

Given the assumption that society's willingness to pay to limit access to Medicaid for those who value it most and for whom it satisfies a basic need exceeds the threshold (roughly $5 per person, per year), the benefit-cost analysis would tend to indicate that, of the analyzed alternatives DMAS should institute premium requirements. In addition to the purely highest NPV concern, it's worth considering equity concerns. Given that premium requirements apply to the upper end of the SES distribution (100-138%) of Medicaid expansion recipients, it seems that this option will have a less disparate impact on the most vulnerable.

Instituting premium requirements is preferred to work requirements, given the higher NPV and the fact that work requirements have a more disparate impact on lower SES individuals and individuals who lack the resources to complete the work requirement. Work requirements have not been shown to increase employment, therefore, I don't expect that the externality associated with them would reasonably outpace that of premiums. There's also some concern that individuals may be disenrolled from work requirements as a result of failure to report work (i.e. as a result of an administrative burden, rather than active non-compliance) even if they meet the requirement, which shouldn't allocate any benefit to society.

Co-payments for non-emergent usage of the ED end up costing significantly more than they save, mostly because evidence shows that co-payments for non-emergent ER usage do not significantly alter the usage of the emergency room. A possible way to change this may be significantly increasing the co-payment as a stronger negative incentive, but that could have equity concerns, given that these individuals are all still very close to the federal poverty level.

Healthy behavior incentive programs largely do not have very high utilization rates, and when previously introduced in Virginia, researchers found that total costs did not decline because any cost-savings from a reduction in ER usage were offset by increased outpatient utilization (Bradley et al., 2017).

Ultimately, considering NPV and equity concerns, if all Virginias, on average, have a sufficiently high willingness to pay for limiting access to healthcare to those for whom it satisfies a basic need (enough to comply with a requirement), when compared to the other three options analyzed premiums should be imposed. If sufficiently high (greater than $7 based on the sensitivity analysis), this represents a net benefit to society, compared to the baseline of Medicaid expansion without any conditions.

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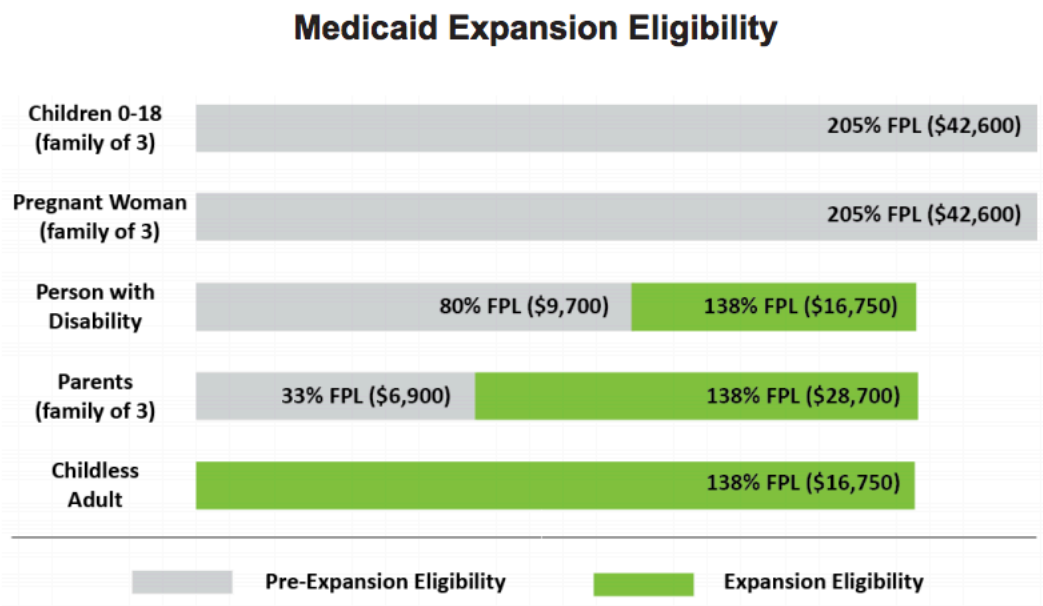
Appendix One: Procedure for Constructing Population Estimates

In order to compute estimates of the number of individuals in each of these categories of Medicaid expansion, as well as the number of individuals who would be subject to such requirements, I utilized 2017 ACS data. I restricted all samples[12] to Virginia, adults aged 19-64, who do not have Medicare or Medicaid insurance, and whose incomes fall within the appropriate range[13]. As can be seen from figure A1 below, the Medicaid Expansion population can be defined as three individual groups:

- Disabled individuals with family incomes 80%-138% FPL
    - Being disabled is defined as having at least one of the following disabilities: ambulatory difficulty, independent living difficulty, self-care difficulty, vision or hearing difficulty, or cognitive difficulty.
- Adults with children with family incomes 33%-138% FPL
    - The sample is restricted to adults who have at least one child.
- Childless adults with family incomes 0%-138% FPL
    - The sample is restricted to adults who have zero children.

Medicaid Expansion Groups



Source: 2019 Medicaid at a Glance

[12] ACS variable for person weight (perwt) was utilized in order to appropriately weigh the survey data.
[13] While the primary metric for income eligibility is the ACS' measure of income as a percentage of the FPL (POVERTY), there were some issues with earned compared to total income factoring into the poverty level, so in addition, I included maximum income (total family income) eligibility thresholds based on VDH guidelines (slide 11: Virginia Medicaid Expansion and 2019 Affordable Care Act)

The 2017 ACS assumes that there are 8,470,020 Virginians and based on the analysis of the three groups, an estimated 5.297% of Virginians would now become eligible for Medicaid coverage, working out to an expansion population of roughly 448,685 individuals.

This estimate of the expansion population is in the ballpark of many others which find roughly 400,000 to 423,000 individuals would be in the expansion population (Norris, 2018; Scott, 2018). The ACS estimate computed is most likely a slight overestimate, because those eligible for SSDI (and eligible for, but not on Medicare) would not be included in the expansion population, but the ACS does not allow a way to exclude these individuals, so they may bias the results.

Premiums and Co-Payments

Exemptions from premium and co-payment requirements exist for individuals who are students, individuals who have disabilities or are medically frail, recipients of Supplemental Security Income (SSI), primary caregiver for a dependent child under the age of 19, primary caregiver for an adult dependent, recipients of SNAP and TANF. To gain a better understanding of the individual subject to work requirements, I repeat the analysis using the ACS but exclude individuals who are subject to the above exemptions. I exclude individuals who are in school, have at least one of the identified disabilities, receive SSI (defined as more than $0 of SSI income per year), are in the household of someone who receives SSI, have a child aged 18 or under, or are a beneficiary of SNAP.

Work Requirements

For those who are considered part of the Medicaid expansion population, exemptions for work requirements exist for individuals who are students, individuals who have disabilities or are medically frail, recipients of Supplemental Security Income (SSI), primary caregiver for a dependent child under the age of 19, primary caregiver for an adult dependent, recipients of SNAP and TANF.

In order to gain a better understanding of the individual subject to work requirements, I repeat the analysis using the ACS but exclude individuals who are subject to the above exemptions. I exclude individuals who are in school, have at least one of the identified disabilities, receive SSI (defined as more than $0 of SSI income per year), are in the household of someone who receives SSI, have a child aged 18 or under, or are a beneficiary of SNAP.

Appendix Two: Work Requirement Disenrollment

Work Requirements:

Arkansas was the first state to implement work requirements, and the following shows the rate of non-compliance due to not meeting the work requirement each month. This is either a result of not completing the work requirement or not reporting the work requirement to the Arkansas Department of Human Services.

Disenrollment on Arkansas Medicaid due to Work Requirement Non-Compliance

Month	Number Subject to Work Requirement	One-month non-compliance	Two months non-compliance	Three months non-compliance (Disenrollment)
June 2018	27,140	7,041	N/A	N/A
July 2018	46,025	6,531	5,426	N/A
August 2018	62,635	6,174	5,076	4,353
September 2018	76,222	7,748	4,841	4,109
October 2018	71,514	2,600	6,002	3,815
November 2018	66,628	2,429	1,936	4,655
December 2018*	60,680	0	0	1,232
January 2019	105,158	8,895	0	0
February 2019	116,229	7,066	6,472	0

* Numbers reset at the end of each calendar year

Source: (Arkansas Department of Human Services, 2019)

In the first year, there were a total of 18,164 individuals disenrolled due to non-compliance. During the year, in a given month the maximum number of individuals that were subjected to such requirements was 76,222 individuals. Using these estimates, that indicates that roughly 23.83% of individuals subject to requirements churned off of the program in the first six months due to failure to comply.

The Commonwealth of Virginia estimated that roughly 120,000 individuals would be subject to work requirements if implemented. My ACS estimates indicate that roughly 140,000 individuals would be subject, but this is most likely due to overestimates of the expansion population and underestimates of exemptions. Using the 120,000 number, and the above likely churn rate, I estimate that roughly 28,596 individuals would lose Medicaid coverage as a result of work requirements. While this is a simple means of estimating the likely impact of the work requirement, due to the few states that have thus far implemented work requirements, this is the best available data to use for such a computation.

Virginia DMAS estimates that roughly 50,000 individuals would not meet work requirements and be dis-enrolled from coverage based on exemptions required by CMS and experience with current Medicaid members (Department of Planning and Budget, 2018).

Appendix Three: TEEOP Exemptions

- Taken Directly from Section 1115 Application: (Virginia Department of Medical Assistance Services, 2018)

Standard Exemptions

Individuals who qualify for a standard exemption include enrollees who are:

- Children who are under age 19
- Full time, three-quarter time, and part-time students in post-secondary education, including community college courses leading to industry certifications or a STEM-H related degree or credential
- Individuals age 65 and older
- Individuals dually enrolled in Medicaid and Medicare
- Individuals who have blindness or who have a disability, including individuals who are:
    - Enrolled in a 1915(c) Waiver;
    - Defined under the Americans with Disability Act, Section 504 or Section 1557, who are unable to comply with the requirements due to disability-related reasons;
    - Supplemental Security Income (SSI) recipients;
    - Social Security Disability Insurance (SSDI) recipients; or
    - State-based disability program recipients
- Pregnant women and postpartum women up to six months after delivery
- Former foster care children under age 26
- Primary caregiver for a dependent child under age 19
- Primary caregiver for an adult dependent with a disability or a non-dependent relative
- Medically frail individuals
    - An individual who is medically frail or has special medical needs. Individuals with medical frailty or special medical needs include but are not limited to: individuals with disabling mental disorders, individuals with chronic SUD, individuals with serious and complex medical conditions, individuals with a physical, intellectual or developmental disability that significantly impairs their ability to perform one or more activities of daily living, individuals with a disability determination based on Social Security Criteria
    - Individuals found to be medically complex and enrolled in a Commonwealth Coordinated Care (CCC) Plus Medicaid managed care plan
    - Individuals participating in a SUD treatment program (receiving ARTS services) or a state-certified drug court program
    - Individuals with a SUD diagnosis
    - Individuals who are physically or mentally unable to work
    - Individuals with HIV/AIDS
    - Individuals who are chronically homeless (residing in a place not meant for human habitation, a shelter for homeless persons, a safe haven, or the streets)
    - Individuals who were incarcerated within the past 12 months
    - Other individuals whom DMAS has determined to be medically frail due to serious and complex medical conditions or special medical needs
    - Individuals receiving long-term services and supports
- Individuals fulfilling Supplemental Nutrition Assistance Program (SNAP) and Temporary Assistance for Needy Families (TANF) work program requirements
- Individuals with acute medical conditions that a medical professional validates would prevent compliance with work and community engagement requirements
- Individuals residing in institutions
- Individuals with a serious mental illness or disabling mental disorder
- Victims of domestic violence
- Any additional exemptions as the Commonwealth deems necessary to support the health of enrollees and achieve the objectives of the program

Appendix Three, continued: TEEOP Exemptions

Hardship Exemptions

- Taken Directly from Section 1115 Application: (Virginia Department of Medical Assistance Services, 2018)

Hardship/Good Cause Exemptions

To address life circumstances that affect an individual's ability to engage in work and community engagement, the Commonwealth will exempt the following Medicaid enrollees. The duration of the exemption will be dependent on the individual's circumstances:

- Individuals who experience a hospitalization or serious illness or who reside with an immediate family member who experiences a hospitalization or serious illness
- Individuals who are temporarily incapacitated
- Birth or death of a household member
- Severe inclement weather
- Family emergency
- Change in family living circumstances (e.g., separation, divorce)
- Individuals living in geographic areas with high unemployment rates, as defined by the Commonwealth
- Individuals residing in geographic areas where Commonwealth workforce programs are unavailable or at full capacity
- Provider attestation of inability to engage in work and community engagement on a short-term basis
- Individuals displaced or significantly impacted by a natural or man-made disaster or catastrophic event

Appendix Four: Baseline Characteristics – Medicaid Expansion Population

Entire Medicaid Expansion Population Demographic Statistics, Panel A

Demographic Statistics on Medicaid Expansion Population	
Age	
19-29	42.43%
30-39	19.18%
40-49	15.23%
50-69	16.22%
60-64	6.94%
Race	
White, Non-Hispanic	51.16%
Black, Non-Hispanic	26.22%
Hispanic	13.50%
Other, Non-Hispanic	9.12%
Marriage and Family	
Married	30.93%
Divorced	11.11%
Childless	68.50%
Parent of children age 18 and under	27.46%
Parent of children age 6 and under	15.82%
Income and Education	
Income <50% FPL	31.89%
Income ≥50% and <100% FPL	33.34%
Income ≥ 100% FPL	34.78%
Less than HS Education	6.62%
Some HS Education	7.87%
HS Grad	39.37%
Some College	28.35%
College Graduate	17.79%

Entire Medicaid Expansion Population Demographic Statistics, Panel B

Demographic Statistics on Medicaid Expansion Population	
Labor Market	
% in Labor Force	62.70%
% Employed	54.60%
% Employed (conditional on being in the labor force)	87.08%
% worked last year	65.93%
% work 20+ hours per week	56.56%
% work 20+ hours per week (conditional on being employed)	87.39%
% work 40+ weeks per year	40.77%
% work 40+ weeks per year (conditional on being employed)	71.92%
% enrolled in school	23.31%
Disability	
% of individuals with at least one reported disability[14]	11.50%
% of individuals with two or more reported disabilities	6.71%
Internet and Vehicle Access	
Household has no internet access	14.31%
Household has no broadband (cable/DSL/fiber-optic) internet access	19.85%
Household has no access to a vehicle	11.83%

[14] A disability is defined as having one of the following: cognitive difficulty, ambulatory difficulty, independent living difficulty, self-care difficulty, and vision or hearing difficulty.

Appendix Five: Demographic Statistics: Co-Pays and Premiums

Medicaid Expansion Population Demographic Statistics 100-138% FPL by exemption status, Panel A

Demographic Statistics on Medicaid Expansion Population, 100-138% FPL		
	100-138% FPL, all individuals	100-138% FPL, excluding TEEOP exemptions
Age		
19-29	33.55%	33.83%
30-39	24.19%	18.62%
40-49	18.42%	10.46%
50-69	16.95%	24.61%
60-64	6.89%	12.48%
Race		
White, Non-Hispanic	47.79%	49.52%
Black, Non-Hispanic	26.15%	25.64%
Hispanic	17.08%	14.34%
Other, Non-Hispanic	8.98%	10.51%
Marriage and Family		
Married	40.72%	28.86%
Divorced	11.48%	14.28%
Childless	53.19%	91.13%
Parent of children age 18 and under	40.51%	0%
Parent of children age 6 and under	23.03%	0%
Income and Education		
Income <50% FPL	0%	0%
Income ≥50% and <100% FPL	0%	0%
Income ≥ 100% FPL	100%	100%
Less than HS Education	6.57%	5.01%
Some HS Education	8.46%	7.72%
HS Grad	43.11%	47.15%
Some College	24.99%	22.46%
College Graduate	16.87%	17.65%

Medicaid Expansion Population Demographic Statistics 100-138% FPL by exemption status, Panel B

Demographic Statistics on Medicaid Expansion Population		
	100-138% FPL, all individuals	100-138% FPL, excluding TEEOP exemptions
Labor Market		
% in Labor Force	74.31%	76.22%
% Employed	68.53%	68.46%
% Employed (conditional on being in the labor force)	92.22%	89.82%
% worked last year	75.09%	76.35%
% work 20+ hours per week	70.67%	71.14%
% work 20+ hours per week (conditional on being employed)	94.67%	93.16%
% work 40+ weeks per year	59.17%	59.62%
% work 40+ weeks per year (conditional on being employed)	83.57%	82.92%
% enrolled in school	13.07%	0%
Disability		
% of individuals with at least one reported disability[15]	10.26%	0%
% of individuals with two or more reported disabilities	6.46%	0%
Internet and Vehicle Access		
Household has no internet access	13.61%	16.01%
Household has no broadband (cable/DSL/fiber-optic) internet access	18.54%	20.36%
Household has no access to a vehicle	9.12%	7.30%

[15] A disability is defined as having one of the following: cognitive difficulty, ambulatory difficulty, independent living difficulty, self-care difficulty, and vision or hearing difficulty.

Appendix Six: Demographic Statistics: Work Requirements

Medicaid Expansion Population Demographic Statistics by Work Requirement Status

Demographic Statistics on Medicaid Expansion Population				
	Likely Exempt from Work Requirements	Potentially Subject to Work Requirements	Potentially Subject to Work Requirements, employed	Potentially Subject to Work Requirements, not employed
Age				
19-29	46.58%	33.35%	37.39%	28.39%
30-39	20.47%	16.44%	20.47%	11.03%
40-49	15.86%	13.89%	14.40%	13.19%
50-59	12.83%	23.46%	20.57%	27.34%
60-64	4.26%	12.67%	7.17%	20.04%
Race				
White, Non-Hispanic	50.41%	52.75%	49.82%	56.69%
Black, Non-Hispanic	25.74%	27.25%	28.05%	26.18%
Hispanic	13.94%	12.56%	15.24%	8.97%
Other, Non-Hispanic	9.91%	7.43%	6.89%	8.16%
Marriage and Family				
Married	32.98%	26.52%	21.94%	32.66%
Divorced	9.29%	15.02%	15.43%	14.48%
Childless	56.78%	93.61%	93.06%	94.34%
Parent of children age 18 and under	40.27%	0%	0%	0%
Parent of children age 6 and under	23.20%	0%	0%	0%
Income and Education				
Income <50% FPL	31.84%	31.98%	20.31%	47.62%
Income ≥50% & <100% FPL	34.14%	31.62%	36.19%	25.50%
Income ≥ 100% FPL	34.02%	36.40%	43.50%	26.87%

Medicaid Expansion Population Demographic Statistics by Work Requirement Status, continued

	Likely Exempt from Work Requirements	Potentially Subject to Work Requirements	Potentially Subject to Work Requirements, employed	Potentially Subject to Work Requirements, not employed
Less than HS Education	7.04%	5.71%	5.84%	5.54%
Some HS Education	8.56%	6.39%	6.94%	5.66%
HS Grad	35.70%	47.23%	43.78%	51.87%
Some College	32.06%	20.40%	22.57%	17.49%
College Graduate	16.64%	20.26%	20.88%	19.43%
Labor Market				
% in Labor Force	60.20%	68.07%	100%	25.26%
% Employed	53.35%	57.28%	100%	0%
% Employed (conditional on being in the labor force)	88.63%	84.15%	100%	0%
% worked last year	65.54%	66.76%	100%	22.20%
% work 20+ hours per week	55.42%	59.00%	89.54%	18.06%
% work 20+ hours per week (conditional on being employed)	86.31%	89.54%	89.54%	0%
% work 40+ weeks per year	39.53%	43.43%	72.64%	4.27%
% work 40+ weeks per year (conditional on being employed)	71.55%	72.64%	72.64%	0%
% enrolled in school	34.19%	0%	0%	0%
Disability				
% of individuals with at least one reported disability[16]	16.88%	0%	0%	0%
% of individuals with two or more reported disabilities	9.85%	0%	0%	0%
Internet and Vehicle Access				
Household has no internet access	13.09%	16.93%	13.40%	21.66%
Household has no broadband (cable/DSL/fiber-optic) internet access	19.51%	20.57%	18.01%	23.99%
Household has no access to a vehicle	12.46%	10.47%	8.98%	12.46%

[16] A disability is defined as having one of the following: cognitive difficulty, ambulatory difficulty, independent living difficulty, self-care difficulty, and vision or hearing difficulty.