PREVENTABLE EMERGENCY DEPARTMENT USE AMONG MEDICAID ENROLLEES IN ILLINOIS

Prepared for the Illinois Department of Public Health

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

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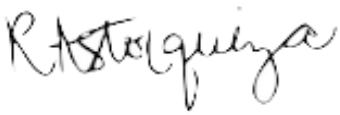
Honor Pledge

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



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Acronyms

ACSC: Ambulatory Care Sensitive Conditions
CHIP: Children's Health Insurance Program
ED: Emergency department
EDA: Emergency Department Visit Algorithm
EDCC: Emergency department care coordination
EMTALA: Emergency Medical Treatment and Active Labor Act
GDP: Gross Domestic Product
HIE: Health Information Exchange
HITECH: Health Information Technology for Economic and Clinical Health Act
IDHS: Illinois Department of Human Services
IDPH: Illinois Department of Public Health
IHFS: Illinois Department of Healthcare & Family Services
IHH: Integrated Health Home
MCO: Managed Care Organization
MEPS: Medical Expenditure Panel Surveys
REALM: Rapid Estimate of Adult Literacy in Medicine

Executive Summary

Illinois experiences about 2.1 million ED visits each year that are potentially preventable, treatable in a primary care setting, or unnecessary. These visits—referred to as ambulatory care sensitive—are costly and contribute to wasteful healthcare spending. They total about $7 billion in charges per year in Illinois. These visits also raise health concerns. EDs are not as well equipped as primary care settings to serve as a regular source of care, and patient health outcomes suffer. Medicaid enrollees are particularly susceptible to this type of ED utilization. Although Medicaid enrollees account for only 18% of the Illinois population, they account for nearly 40% of all ambulatory care sensitive visits.

Patients typically seek care in the ED, rather than the primary care settings, due to barriers accessing the primary care system. The most frequently cited reasons include convenience factors, lack of confidence in primary care providers, perception of financial costs, and not knowing whether or not a condition requires emergent care.

Several strategies to reduce inappropriate ED utilization have been tried and evaluated. Based on the available research, I evaluate three approaches Illinois could adopt to reduce the amount of ambulatory care sensitive ED visits by the state's Medicaid population.

1. Offer $25 cash incentives for completing a primary care appointment
2. Implement electronically-backed EDCC program
3. Continue IHH implementation

My analysis considers three factors in order to determine a course of action for Illinois: cost-effectiveness, impact on barriers to primary care, and political feasibility. After careful evaluation of each alternative, I recommend that the Illinois Department of Public Health support Option Two: Implement an electronically-backed EDCC program.

An electronically-backed EDCC program provides the best cost-effectiveness ratio. This alternative is projected to cost $60 per visit reduced. The next best option would cost around $1,300 per visit reduced. Cost-effectiveness is a critical component of this recommendation, as Illinois currently faces severe financial constraints. This alternative is also likely to improve patients' confidence in their primary care providers and allow for education on appropriate ED use. Finally, the program seems to be politically feasible based on the Virginia General Assembly's unanimous approval of a similar program.

Option Two should prevent over 80,000 ambulatory care sensitive ED visits among Illinois Medicaid enrollees in just one year. This option will not solve all elements of inappropriate ED use, but it will make significant progress within a vulnerable population.

Background & Problem Definition

Ambulatory Care Sensitive Conditions

Emergency departments (EDs) play a crucial role in the United States healthcare system. EDs offer a full range of medical care at all times, and the Emergency Medical Treatment and Active Labor Act (EMTALA), enacted in 1986, ensures that all people can access that medical care. EMTALA is a federal mandate that requires hospital emergency departments to medically screen all patients seeking emergency care to stabilize or transfer those with medical emergencies, regardless of health insurance status or ability to pay (Emergency Medical Treatment and Active Labor Act, 1986).

As this analysis will later explore, patients access the ED for many different reasons. However, many ED visits are for circumstances considered Ambulatory Care Sensitive Conditions (ACSCs). Visits for ACSCs include visits for conditions that could have been adequately treated in a primary care setting and conditions that could have been avoidable with proper preventative care. The New York University (NYU) Emergency Department Visit Algorithm (EDA) provides the most commonly used method to retrospectively classify ED visits based on ED care necessity (Ballard et al., 2010). The algorithm designates visits into four categories—three of which are ACSC-related and one that is emergent and not preventable. **Table 1**, below, describes each of the categories in detail.

Table 1: NYU ED Visit Algorithm Categories

Non-ACSC Categories	**Description**
Emergent- Not Preventable/Avoidable	ED care was needed and alternative/prior ambulatory care could not have prevented the condition.
ACSC Categories	
Non-emergent	The patient's initial complaint, presenting symptoms, vital signs, medical history, and age indicated that immediate medical care was not required within 12 hours.
Emergent-Primary Care Treatable	Treatment was required within 12 hours, but care could have been provided effectively and safely in a primary care setting. The complaint did not require continuous observation, and no procedures were performed or resources used that are not available in a primary care setting.
Emergent-ED Care Needed-Preventable/Avoidable	ED care was required based on the complaint or procedures performed/resources used, but the emergent nature of the condition was potentially preventable/avoidable if timely and effective ambulatory care had been received during the episode of illness.

ACSC ED Visits among Illinois' Medicaid Population

The Illinois Department of Public Health applied the EDA to classify ED visits within Illinois from 2009-2013. The analysis includes all outpatient ED visits, meaning the patient's visit did not result in a hospital admission. In 2013, Illinois EDs saw approximately 4.1 million outpatient visits. Among those visits, 51% fell into one of the three ACSC categories. Therefore, nearly 2.1 million ED visits in Illinois were potentially preventable or could have been treated in an ambulatory care setting. This analysis will focus on ACSC ED visits among Illinois' Medicaid population. Medicaid enrollees account for the largest share of these ACSC ED visits. Although Medicaid enrollees comprised only 18% of Illinois' population in 2013, they accounted for nearly 40% of all ACSC ED visits in the state (Illinois Department of Public Health, 2015).

Consequences of ACSC ED Visits

ACSC ED visits are problematic because they typically result in both higher healthcare costs and lower quality of care. Healthcare reform aims to increase the value of the healthcare system by simultaneously improving health outcomes and controlling costs. The sections below will explore how ACSC ED visits endanger the value of healthcare by working against each of the aforementioned goals.

Wasteful Healthcare Spending

Healthcare cost control remains a national priority as U.S. healthcare spending approaches 20% of the nation's Gross Domestic Product (GDP) (Centers for Medicare & Medicaid Services, 2018). ACSC ED visits contribute to the nation's high healthcare costs. A cost analysis of ACSC-related ED visits in Charlotte, North Carolina, found that charges for ED visits were 320%-728% higher than equivalent treatment in primary care settings, which could allow for an estimated 69%-86% in cost savings if ACSC patients were treated in primary care settings (McWilliams, Tapp, Barker, & Dulin, 2011). According to data from the Illinois Hospital Discharge database, over the three-year period from 2014-2016, charges for ACSC visits in Illinois totaled $21 billion.

Quality of Care

ACSC ED visits are not only costly, but can diminish the quality of care that patients receive. EDs are designed to provide episodic care and therefore do not provide the same benefits of continuity of care that a primary care provider offers. Primary care providers are familiar with a patient's medical history, behavioral health patterns, treatment preferences, and are equipped to follow up with patients regarding their health status. This level of familiarity often saves time and impacts providers' decisions regarding diagnostic tests. In the ED, however, providers are not familiar with a patient's medical history and may run diagnostic tests that a primary care provider would not need to conduct. Evidence also suggests continuity of care is associated with better clinical outcomes and fewer subsequent hospital admissions. For example, one study found that among patients with type-II diabetes, those with higher continuity scores were more likely to improve their diets and achieve better levels of glucose control (Parchman, Pugh, Noël, & Larme, 2002). Further, a randomized control trial found that seeing a continuous outpatient healthcare provider reduced emergent hospital admissions by 19 percentage points and reduced the average length of hospital stays by ten days (Wasson et al., 1984). Overall, primary care is better designed to address the needs of patients with ACSCs and manage chronic conditions over time.

Drivers of ACSC ED Utilization

Patients choose to receive care for ACSCs in the ED, rather than in an ambulatory care setting, for a variety of reasons. Many researchers have conducted patient surveys to better understand why they present to the ED, rather than a primary care provider. The literature suggests three major drivers of ACSC ED utilization: perception of primary care convenience and quality, perception of cost, and health literacy levels.

Perception of Convenience and Quality

Since ACSCs are events that could have been addressed with timely and effective outpatient care, ACSC ED visits by Medicaid patients can reflect the availability and accessibility of local healthcare services and their success in meeting the Medicaid population's needs. Factors related to convenience and perception of quality can serve as barriers to accessing the primary care system and often drive patients to seek ACSC-related care in the ED.

Kangovi et al. (2013) conducted a qualitative survey of 40 hospital patients, all of whom were insured by Medicaid or were uninsured. The survey results suggest that transportation challenges made ambulatory care harder to access than the ED. Because the ED remains open at all times, patients possess a greater degree of flexibility in getting to the ED than a scheduled primary care appointment. Patients also perceived the ED as more efficient than primary care. Since EDs have specialists in house, patients can receive all their necessary care in one place. They worry that their primary care providers will send them to specialists, which would require taking time off work and navigating transportation barriers all over again. Patients also cited challenges scheduling appointments with primary care physicians and trouble obtaining clinical recommendations from their providers over the phone (Kangovi et al., 2013). Redstone et al. (2008) also present survey findings that suggest inability or difficulty in scheduling a primary care appointment drives patients to seek care in the ED rather than in a clinic or office setting.

Shesser et al. (1991) randomly selected patients with "minor illnesses" who presented to the ED during business hours on weekdays. Through patient interviews, the researchers concluded that 23.7% of patients chose to use the ED because of its convenience, 22.1% chose the ED because they lacked an establish patient-provider relationship, and 19.0% chose the ED due to reported inability to make a prompt appointment with their regular provider (Shesser, Kirsch, Smith, & Hirsch, 1991). Though this study may be outdated, it provides insights into the barriers patients face when attempting to access the primary care system and remains in line with the existing and more recent literature (Sarver, Cydulka, & Baker, 2002).

Survey evidence also suggests that patients who utilize the ED for ACSC-related care perceive ED care to be of better quality than primary care. Kangovi et al. (2013) report that patients felt as though ED providers were better at diagnosing and treating their conditions than their primary care providers. Additionally, those who held negative opinions of their primary care providers reported that they did not switch providers due to challenges navigating the primary care system and thought that the other providers available to them under Medicaid would be no better than their current provider (Kangovi et al., 2013). Sarver et al. (2002) also found a correlation between non-urgent ED use and patients who expressed dissatisfaction and/or lack of confidence in their usual source of care's abilities.

Note that each of the studies discussed in this section present patient-level survey data and do not necessarily accurately reflect the convenience and availability of primary care appointments. However, these studies still provide critical information regarding the perceived barriers to primary care, and perception drives patient decisions.

Cost Perception

Although ED visits cost somewhere between three to eight times more than primary care visits, cost perception remains a driver of ACSC ED use (McWilliams et al., 2011). Patient perception of costs and real costs differ dramatically, especially within the Medicaid population. In Illinois, Medicaid beneficiaries pay a co-payment amount of $3.90 for both non-emergent ED visits and physician/clinic visits (Illinois Department of Human Services, n.d.). Since the cost to the patient remains the same regardless of the care setting, Medicaid patients do not face any financial disincentives to seeking ACSC-related care in the ED. In fact, patients surveyed by Kangovi et al. (2013) explained that they consider the ED more affordable because they fear their primary care provider may refer them to specialists, which would result in additional co-payments. In the ED, on the other hand, they receive all necessary care in one visit.

Health Literacy

The U.S. Department of Health and Human Services (2000) defines health literacy as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions." Health literacy can impact where patients choose to receive care as the decision involves the patient's perception of how severe his or her condition is and what care setting is most appropriate for that level of need.

Health literacy is most commonly measured through the Rapid Estimate of Adult Literacy in Medicine (REALM) metric (Dumenci, Matsuyama, Kuhn, Perera, & Siminoff, 2013). A cross-sectional study using REALM to assess health literacy found that patients with limited health literacy are more than twice as likely to experience a preventable emergency department visit than their counterparts with adequate health literacy (Balakrishnan et al., 2017). Another study, after controlling for sociodemographic and health status, also concludes that poor health literacy results in greater ED use, more preventable hospital admissions, and fewer regular visits to the doctor. However, in a full analysis with additional controls for insurance and employment status, only the association between health literacy and fewer visits to the doctor's office remained significant (Schumacher, Hall, Davis, Arnold, Bennett, Wolf, & Cardin, 2013). Therefore, this study cannot be taken as evidence of a link between poor health literacy and ACSC-related ED use. It does, however, suggest low health literacy contributes to primary care access barriers, which especially fuel ED visits categorized as Emergent-ED Care Needed-Preventable/Avoidable. This is especially problematic for patients with chronic conditions who need to be carefully managed. Without regular primary care, these patients' conditions escalate, their health suffers, and they become more susceptible to truly emergent episodes.

Summary

While a considerable amount of research exists on why patients seek care in the ED rather than a primary care setting, the vast majority of it is qualitative and may not fully capture patient decision drivers. After a careful review of the available research, this analysis concludes that convenience factors, poor patient-primary care provider relationships, cost perception, and health literacy levels all work together to fuel ACSC ED utilization.

Literature Review

Current Efforts to Improve Primary Care in Illinois: Integrated Health Homes

In July 2018, the Centers for Medicare and Medicaid Services (CMS) approved a State Plan Amendment from the Illinois Department of Healthcare and Family Services (IHFS) to implement a state-wide Integrated Health Home (IHH) program. The IHH program is a care coordination program for Medicaid beneficiaries that intends to improve the total care experience. A brief description, specified by IHFS, is provided below:

> *"The Integrated Health Home (IHH) program is a new, fully-integrated form of care coordination for all members of the Illinois Medicaid population. Each member in the Medicaid population will be linked to an Integrated Health Home provider based on their level of need and the provider's ability to meet those needs. The Integrated Health Home will be responsible for care coordination for members across their physical, behavioral, and social care needs. Integrated Health Homes would not, however, be responsible for provision for all services and treatment to members" (IHFS, 2019).*

The IHH program will place Medicaid beneficiaries in one of four tiers based on their health needs. The program should, in theory, provide a more patient-centric care experience by coordinating care plans across providers and accounting for the patient's preferences. The health home providers receive compensation on a per patient, per month basis with the opportunity for outcomes-based bonuses. The bonuses serve to incentivize high quality care.

The IHH program may lead to reductions in ACSC ED visits for two key reasons. First, the care coordinators involved in IHHs should reduce many of the barriers to primary care that drive ACSC ED use. Additionally, the IHH program is designed to improve the quality of primary care Medicaid enrollees receive. Better care should lead to improvements in health outcomes, which, in turn, should result in fewer episodes that would require medical attention. Existing research suggests that patient-centered medical homes are particularly effective at reducing ACSC ED visits among patients with chronic illnesses due to better management of their conditions (David, Gunnarsson, Saynisch, Chawla, & Nigam, 2015).

North Carolina implemented a similar initiative to Illinois' IHH program, termed Community Care of North Carolina, and achieved important successes. For example, the ED visit rate for asthma fell by 16%, and the initiative has led to about $160 million in annual savings to North Carolina's Medicaid and CHIP programs (Steiner et al., 2008).

Illinois intended to launch the IHH program by October 2018, but was ultimately delayed until recently in order to allow for approval of administrative rules (Illinois Health and Hospital Association, 2019). IHFS is currently reviewing healthcare organizations' applications to become IHHs.

Emergency Department Care Coordination Programs

Care coordination programs were first introduced in 1990 in Harlem, New York. The initiative intended to improve access to cancer screening, diagnosis, and treatment by addressing patients' specific barriers to care. The model has since been applied to situations beyond cancer cases, and the breadth of research suggests care coordination effectively reduces preventable ED visits, but the magnitude of the impact varies between different implementation models (Sarver et al., 2002; Weber, Showstack, Hunt, Colby, Calaham, 2005; Zuckerman & Shen, 2004).

In these programs, care coordinators facilitate communication with relevant stakeholders, including patients, providers, and administrative staff. They help address a wide range of barriers to patient care. However, not all care coordination models are created equal. The most comprehensive models address

- Communication challenges, such as literacy, culture, and language barriers
- Psychological barriers, such as fear and distrust of providers
- Health system navigation, which could include appointment scheduling, referrals, and care coordination
- Social support, including transportation and child care (Enard & Ganelin, 2013).

Several states have implemented ED care coordination (EDCC) programs backed by technology that enables real-time alerts and sharing of patient care plans. These models have proven to reduce ACSC ED visits considerably. After implementing these programs, the states saw reductions in ED use by high-frequency utilizers, lower Medicaid Managed Care Organization (MCO) costs overall, and improvements in quality of care.

Washington launched its "ER is for Emergencies" program in 2012. Washington's program includes a Health Information Exchange (HIE) among EDs in the state, development and sharing of patient care plans, and patient education on appropriate care settings. In the Brooking's Institute's analysis of Washington's ER is for Emergencies program, the researchers found a 10% overall reduction in ED visits in the first year of the program. They report a 14% reduction in visits for "less serious conditions" and an 11% decline in visits from patients with at least five yearly ED visits (Pines, Schlicher, Presser, George, & McClellan, 2015). For the purpose of this analysis, the effect size from this program can be interpreted as having a lower bound of 10% and an upper bound of 14%. Oregon also implemented a state-wide ED HIE that allows for alerts and sharing of care plans. They achieved a 10% reduction in ED visits from high utilizers.

Taking notice of this strategy's recent success, the Virginia General Assembly established its own EDCC Program during the 2017 General Session. H.B. 2209 (2017) created the EDCC Program and defines its capabilities and rules, which are outlined in Appendix A.

Cost Sharing Disincentives

Mixed evidence exists surrounding the effectiveness of copayments at reducing Medicaid enrollees' non-emergent ED use. Using data from the 2001-2006 Medical Expenditure Panel Surveys (MEPS), Mortensen (2010) evaluates how changes to co-payment policies in nine different states affected ED utilization among Medicaid enrollees. The researcher used a well-designed differences-in-differences analysis and did not find co-payments to affect non-emergent ED use among Medicaid enrollees. However, it is worth noting that most of the states implemented small co-payments, charging about $3 per visit (Mortensen, 2010). Recall from above that Illinois' Medicaid plan also charges a co-payment of only $3.90 per non-emergent ED visit (Illinois Department of Human Services, n.d.).

A separate study of Medicaid enrollees in Oregon found that $50 co-payments reduced total ED utilization by 18%, but this study also does not isolate the effect of the copayments on ACSC-related ED visits (Lowe, Fu, & Gallia, 2010). The researchers actually found that the reductions they saw within the "poor & sick" population were accompanied by higher inpatient costs. Overall, the copayments lead to adverse health impacts because the copayments dissuaded these patients from actively seeking the care that they needed (Lowe, Fu, & Gallia, 2010). Further, the federally-mandated ceiling on co-payments for non-emergent ED use stands at $8 for Medicaid enrollees (Centers for Medicare & Medicaid Services, n.d.). Since there is only evidence to suggest that co-payments around $50 impact ED utilization and co-payments of this magnitude seem to cause adverse health effects, increasing co-payments is not a viable option to solve Illinois' problem.

Cash Incentives for Primary Care

Cash incentives provide one possible mechanism to encourage primary care use over ED use. Bradley and Neumark (2017) conducted a randomized control trial to determine whether a cash incentive would render patients more likely to schedule an initial appointment with a primary care provider. They conclude that $50 cash payments rendered patients nine percentage points more likely to see a primary care provider than patients who received no financial incentive. Patients who received $25 cash incentives were six percentage points more likely to visit a primary care provider (Bradley & Neumark, 2017). Cash incentives may provide an attractive way to reduce ACSC-related ED visits by encouraging patients to engage in preventative care. Bradley and Neumark (2017) found a 19-percentage point reduction in ACSC ED visits. Cash incentives would specifically address ED visits classified as "Emergent—Preventable/Avoidable" because these types of conditions could have been prevented with appropriate primary care. For patients who consciously choose to use the ED for non-emergent and emergent primary care treatable conditions, these cash incentives may encourage them to change their decisions and seek care in the appropriate setting.

Telephone Triage Services

Telephone triage services can be an effective method of directing patients toward the appropriate level of care. Callers adhere to advice from nurse-led telephone triage services between 75-90% of the time, based on existing research. Barber, King, Monroe, et al. (2000) found that ED visits made by nurse telephone triage referrals were appropriate 33% more often than patient decisions to visit the ED. However, the impact of telephone triage services depends on the population's utilization of them. Bunn, Byrne, and Kendall (2004) conducted a systematic review of telephone triage studies and found that six of seven studies reported no difference in ED utilization between groups using telephone triage and groups not using the services. The remaining study found an increase in ED visits following

telephone triage service utilization. Based on the available research, telephone triage services do not seem to offer an effective approach for Illinois to reduce ACSC ED use among the Medicaid population.

Evaluative Criteria

Analysis of each policy alternative will center around three key evaluative criteria: cost-effectiveness, reduction in barriers to primary care, and political feasibility. Cost-effectiveness is weighted at 60%, while reductions in barriers to primary care and political feasibility are weighted at 20% each. The following sub-sections will describe what each of these criteria mean in the context of this analysis and outline how each criterion will be objectively measured.

Cost-Effectiveness

Cost-effectiveness is an important priority for the State of Illinois in determining a plan of action because the state currently faces major financial hurdles. Years of owing more money in bills than the state holds in assets has created a significant financial hole. Illinois' net long-term deficit sits at $141.7 billion (State of Illinois Comptroller, 2018). In his F.Y. 2020 Budget Address, Governor J.B. Pritzker spoke to the importance of cost-effective programs. He stated, "We must focus on making government more efficient and effective. Let's make sure we are focused on truly managing and measuring the real results of state programs. Taxpayers deserve to know their dollars are being spent wisely. Programs that don't work need to be eliminated. And we need to explore new ways to address old problems" (Caine, 2019).

The cost-effectiveness criterion will be expressed as a ratio of the anticipated annual costs of the program to the State of Illinois per Medicaid ACSC ED visit reduced. The cost piece of this ratio includes projected annual financial costs to be paid by the State of Illinois government for the first year of the program. The effectiveness portion projects the number of Medicaid ACSC ED visits each alternative will reduce per year. Effectiveness estimates are determined using the existing evidence base on the particular interventions being evaluated. These estimates assume a similar effect size will hold if the programs are applied to Illinois. Due to the unique financial pressure the State of Illinois currently operates under, this criterion is weighted at 60%.

Reduction in Barriers to Primary Care

While this policy analysis does aim to reduce wasteful healthcare spending by reducing ACSC ED visits, another important goal is to connect the Medicaid population with care options that will better serve their conditions. This criterion will evaluate how well each alternative addresses the Medicaid population's most frequently cited reasons for seeking care in the emergency department, rather than an ambulatory care setting, as determined by the literature:

- Convenience
- Perception of quality
- Perception of financial costs
- Patient health literacy

Each alternative will receive one-point per barrier category that it would positively impact. For example, a patient-education intervention would receive one-point for addressing patient health literacy. These conclusions will be drawn from existing research and logical, explicitly-stated assumptions where appropriate. This criterion is weighted at 20% because it is not as high of a priority as cost-effectiveness, but it is equally as important as political feasibility.

Political Feasibility

Political feasibility speaks to how likely each alternative is to survive the legislative process necessary for adoption. For reference, the current political makeup of Illinois favors the Democratic party. The governor, J. B. Pritzker, is a member of the Democratic party. Both chambers of the 101st General Assembly are also controlled by the Democratic party. The Senate is comprised of 40 Democrats and 19 Republicans (Illinois General Assembly, 2019a). The House has 74 Democrats and 44 Republicans (Illinois General Assembly, 2019b). To measure political feasibility in an objective manner, each alternative will be evaluated on a point-system rubric. The rubric is described in detail below.

Figure 1: Political Feasibility Rubric

Does the alternative require a new piece of legislation to be passed by the Illinois General Assembly?

- If no, +3 points. If no, the next two questions do not need to be evaluated.
- If yes, +0 points

Based on political party affiliation, does voting history in other states on similar policies suggest that the current Illinois General Assembly would vote to pass this legislation?

- If yes, +1 point
- If no, +0 points

Based on voting history of similar policies, is the alternative likely to garner bipartisan support?

- If yes, +1 point
- If no, +0 points

The political feasibility score will be a summation of all points earned according to the rubric above. This criterion receives a weight of 20% because it is not as high of a priority as cost-effectiveness, but it is equally as important as reducing barriers to primary care.

Policy Alternatives

This section describes and evaluates three potential policy options to address ACSC ED visits in Illinois' Medicaid population. The evaluations employ the three criteria described in the previous section: cost-effectiveness, reduction in barriers to primary care, and political feasibility. The three policy options presented here were determined based on careful consideration of the existing evidence that is described in the literature review above and the applicability to Illinois' existing infrastructure and constraints.

OPTION ONE: Offer $25 cash incentives for completing a primary care appointment.

Description

Option One utilizes financial incentives as a mechanism for encouraging Medicaid patients to utilize primary care services. In theory, this alternative would address all three types of ACSC ED visits. The financial incentive should convince those with Non-emergent and Emergent-Primary Care Treatable conditions to utilize the primary care system for their needs, rather than the ED, because the opportunity cost of visiting the ED would increase by $25. However, that behavioral change depends on the opportunity costs of navigating other barriers to primary care. The perception of these tradeoffs will vary from patient to patient. This alternative could also reasonably reduce ED visits in the Emergent-ED Care Needed-Preventable/Avoidable category. These visits could have been prevented with proper primary care. If the cash incentive drives patients who are susceptible to these types of conditions to utilize primary care more than they would have without the incentive, then Illinois should experience a reduction in ACSC ED visits of this nature.

In terms of policy action, this alternative would require the Illinois General Assembly to pass legislation authorizing DHFS to request federal permission to use Medicaid funds for this incentive program. IHFS would then need to apply for a section 1115 waiver with CMS. CMS has granted many section 1115 waivers to states seeking to incentivize healthy behaviors and preventive care utilization (Blumenthal et al., 2013). Therefore, this section 1115 waiver request from Illinois should be accepted.

The $25 cash incentive would be offered to all Illinois Medicaid enrollees who complete a primary care visit. In Illinois, Medicaid beneficiaries enroll in one of six available MCO Health Plans (Department of Healthcare & Family Services, 2019). Therefore, in practice, Medicaid enrollees would need to submit documentation confirming their primary care visit to their Health Plan. The Health Plan will issue the incentive to the enrollee. Billing personnel from the Medicaid Health Plans would then charge IHFS for the incentives using their existing payment infrastructure.

Evaluation

Cost-effectiveness

With a cost-effectiveness ratio of $1,327 per visit reduced, Option One ranks second among the three proposed alternatives in cost-effectiveness and hence receives two points for this criterion. The annual costs involved with this option include the $25 cash incentive, $10 per person for administrative costs, and an average of $46 per patient for the cost of the primary care appointment that is paid by the State of Illinois. The $46 estimate of the primary care appointment cost comes from the Illinois Medicaid reimbursement rates for the most common primary care services, as according to the Healthcare Common Procedure Coding System (Centers for Medicare & Medicaid Services, 2016).

On average, 74% of Illinois Medicaid enrollees complete a primary care visit annually (Kaiser Family Foundation, 2018). Bradley and Neumark (2017) also found that primary care cash incentives caused a 19-percentage point reduction in non-emergent ED visits. Assuming this effectiveness rate would hold with a state-wide rollout across Illinois' Medicaid program, this alternative would prevent nearly 154,000 Medicaid ACSC visits per year. Dividing the total annual cost to the State of Illinois by the projected number of annual prevented visits yields the cost-effectiveness ratio of $1,327 per visit reduced.

Reduction in Barriers to Primary Care

Option One receives one point for this criterion. Of the four specified categories of barriers to primary care, this alternative would only address the perception of financial cost. As mentioned previously, Medicaid enrollees in Illinois face co-payments of $3.90 for both primary care visits and non-emergent ED visits. The $25 cash incentive would shift the financial cost of the patient to where they would gain a net $21.10 if they choose the primary care route, whereas they would lose $3.90 for choosing the ED route. Assuming an $25 incentive will produce a six percentage point increase in the share of enrollees who complete primary care appointments—as was the case in the study by Bradley and Neumark (2017)—the State of Illinois can expect about 2.5 million primary care visits from Medicaid enrollees each year. However, some patients may still choose to seek care in the ED if convenience, perception of quality, and health literacy factors outweigh the benefit of the incentive. Since this alternative does not address these three factors, it receives a score of one point for this criterion.

Political Feasibility

Option One receives two points for political feasibility. This score was determined according to the political feasibility rubric described above. A deeper explanation of the political feasibility evaluation is provided below.

Does the alternative require a new piece of legislation to be passed by the Illinois General Assembly?

Yes (+0 points). Option One requires the Illinois General Assembly to pass legislation authorizing DHFS to request federal permission to use Medicaid funds for this incentive program. IHFS would then need to apply for a section 1115 waiver with CMS.

Based on political party affiliation, does voting history in other states on similar policies suggest that the current Illinois General Assembly would vote to pass this legislation?

Yes (+1 point). Many other states have voted to pass programs that incentivize healthy behaviors and preventive care. In 2007, Michigan passed S.B. 1, which authorized Medicaid behavior incentives. The program includes incentives for completing primary care visits (George, 2007). This bill passed the Michigan Senate with support from all 38 members who voted—17 Democrats and 21 Republicans. The bill also received substantial support in the House. 58 House Democrats and 49 House Republicans voted yes, while only two House members voted against the bill (both Republicans). The bill was passed in the House with a final vote of 107-2 (Mackinac Center for Public Policy, 2007). Based on this data, a small share of Republicans—at most—would vote against this bill. Given the Democratic control of the Illinois General Assembly, this alternative should pass.

Based on voting history of similar policies, is the alternative likely to garner bipartisan support?

Yes (+1 point). The voting history of Michigan's S.B. 1 (2007) suggests that this alternative would gain strong bipartisan support. Adoption of healthy behavior incentive programs in several states provide further evidence for this conclusion (Blumenthal et al., 2013).

OPTION TWO: Implement electronically-backed EDCC program.

Description

Option Two would establish a single state-wide technology solution that connects all EDs and Medicaid MCOs in Illinois via a HIE network. This alternative's design is based on Virginia's EDCC Program, implemented in June 2018 (Virginia Department of Health, 2017). This program would enable real-time communication and collaboration among ED and primary care physicians, other clinical providers, care management personnel, and MCO Health Plans. With this technology, providers and personnel across the care spectrum can receive and input patient health and visit information. Analytic capabilities would trigger real-time alerts to the provider regarding patient-specific risks, including whether he or she is a high-frequency ACSC ED utilizer. This exchange would allow a patient's entire care team (ED physicians, primary care physicians, and care coordination managers) to share one care plan and access all information regarding treatments, hospital admissions, transfers, and discharges. It allows all of the patient's providers and care managers to be on the same page and avoid duplicative tests and treatments, improving the quality of care the patient receives.

Option Two would also involve establishing an advisory council to advise and oversee the implementation of this program. The advisory council's responsibilities would also include selection of a technology vender. The council should be composed of representatives from MCO Health Plans, hospital EDs, and health systems, as well as physicians and state health officials.

In order to create this program in Illinois, the Illinois General Assembly would need to pass legislation establishing the program and appropriate the necessary funds in the F.Y. 2020 budget. IHFS would also need to apply to CMS for federal HITECH funds, which are reserved for state HIE activities. The HITECH Act provides a 90% federal match rate for qualifying health IT initiatives (Health Information Technology for Economic and Clinical Health Act, 2009). Virginia's plan met all requirements for the federal HITECH funds. As such, Illinois' plan should too.

Evaluation

Cost-effectiveness

Option Two yields a cost-effectiveness ratio of $60 per visit reduced. This alternative has the best cost-effectiveness ratio of all the options by far. Therefore, it receives three points for its cost-effectiveness score. Annual cost estimates for this criterion are based on Virginia's budget for its Emergency Department Care Coordination initiative, scaled up to account for Illinois' larger Medicaid population. Virginia appropriated $3.7 million dollars in the F.Y. 2018 budget to fully implement this program. Virginia's Medicaid population is about 32% smaller than Illinois' Medicaid population (Kasier Family Foundation, 2018). Therefore, when estimating Illinois' costs for this alternative, Virginia's appropriations were increased by 32%, resulting in a projected total cost to the State of Illinois of about $4.9 million. Note that this is likely an over-estimate of costs, since there would be some returns to scale. Not all cost elements of this alternative will be variably dependent on how many people use the program. Even so, Option Two is still the most cost-effective alternative.

Virginia has not yet been able to analyze program impact due to how recently this program was implemented. To estimate how effective this alternative would be at reducing Medicaid ACSC ED

visits in Illinois, this analysis utilizes results from Washington's ER is for Emergencies program. As discussed in the Literature Review section, Washington reduced ED visits by 10% in just one year with the ER is for Emergencies care coordination program. Applying this effectiveness estimate to Illinois' Medicaid population projects an annual reduction of 81,046 ACSC ED visits. Dividing the total annual cost by the projected number of visits prevented per year yields the cost-effectiveness estimate of $60 per visit reduced.

Reduction in Barriers to Primary Care

Option Two receives two points for this criterion. This alternative is expected to improve patients' perception of primary care quality and improve patients' health literacy as related to appropriate care settings. However, this alternative would not necessarily make accessing the primary care system more convenient or impact the patient's perception of financial costs. Option Two should lead patients to have more confidence in their primary care providers because this program provides primary care providers and ED physicians with the same information and leads to one consistent treatment plan among all parties. Eliminating any discrepancies in care plans and between providers, should equalize the perception of quality across EDs and primary care providers. Additionally, successful care coordination should lead the patient's health to improve. Experiencing tangible health improvements should lead patients to have a more favorable outlook on the quality of care they receive from primary care providers.

Political Feasibility

After evaluating Option Two using the political feasibility rubric, it receives a score of 2 points. Evaluation details are provided below.

Does the alternative require a new piece of legislation to be passed by the Illinois General Assembly?

Yes (+0 points). Option Two requires the Illinois General Assembly to pass legislation authorizing an ED care coordination program and appropriating the necessary $4.9 million in funds that this project would cost.

Based on political party affiliation, does voting history in other states on similar policies suggest that the current Illinois General Assembly would vote to pass this legislation?

Yes (+1 point). Virginia established its Emergency Department Care Coordination program in 2017 with the passage of H.B. 2209 (O'Bannon, 2017). The bill passed both chambers unanimously. The House of Delegates voted to adopt H.B. 2209 with a vote of 94-Y 0-N. There were 60 Republican and 34 Democratic affirmative votes in the Virginia House of Delegates. Additionally, the Emergency Department Care Coordination Program bill (S.B. 1561) passed the Virginia Senate with a 38-Y 0-N vote. The 38 favorable votes included 19 Republican votes and 19 Democratic votes (Virginia's Legislative Information System, 2017). Given the overwhelming support for this program, a similar bill should pass in the Illinois General Assembly.

Based on voting history of similar policies, is the alternative likely to garner bipartisan support?

Yes (+1 point). As discussed above, Virginia's H.B. 2209 and identical S.B. 1561 both passed the House of Delegates and Senate, respectively, without any votes in opposition. Therefore, this alternative is indeed likely to garner bipartisan support in Illinois.

OPTION THREE: Continue IHH implementation.

Description

Option Three takes a "wait and see" approach to the ACSC ED problem. Since Illinois is already in the process of launching this structural change to the state Medicaid program, Option Three proposes waiting to take further action until it is possible to evaluate whether the IHH program reduces ACSC ED visits. After one year of full implementation, the IHH program should be evaluated to determine impact on ACSC ED visits.

As described in the Background section earlier in this report, the IHH program is a form of coordinated care that links all Illinois Medicaid enrollees to an IHH provider based on their level of needs and health risks and the provider's ability and capacity to meet those needs. IHH providers are responsible for coordinating care across the patient's physical, behavioral, and social care needs.

Evaluation

Cost-effectiveness

Option Three bears a cost-effectiveness projection of $2,383 per visit reduced. Option Three has the worst cost-effectiveness ratio of all three alternatives, and therefore receives one point for this criterion. According to IHFS's Agency Analysis of Economic and Budgetary Effects of Proposed Rulemaking, the IHH program will yield annual costs of $309 million for the State of Illinois (Illinois Department of Healthcare and Family Services, 2018). This annual cost projection for the first year of the IHH program includes funds for evaluating program impact, as specified (and required) in the State Plan Amendment application to CMS (Centers for Medicare & Medicaid Services, 2018).

Projecting this alternative's ability to reduce ACSC ED visits forces the use of some strong assumptions. No other state has implemented a program exactly like this one. The Community Care of North Carolina program provides the closest comparison available. Community Care of North Carolina is another care coordination program. This program identifies patients with the most to gain from care coordination and matches them with care coordinators who work with physicians, nurses, social workers, pharmacists and other caregivers to develop the most appropriate care plans. These patients typically have chronic conditions. Trisolini et al. (2015) evaluated three-year program impact for this program and discovered no significant reduction in ACSC ED visits as a whole. However, when looking at specific chronic conditions, the researchers did find some significant reductions. For the purpose of estimating the impact of Illinois' IHH program, the analysis assumes the 16% reduction in asthma-related ED visits that resulted from Community Care of North Carolina can be generalized to ACSC visits in Illinois. This assumption likely overestimates the effectiveness of this alternative, and is reviewed in the sensitivity analysis discussion in Appendix B. Even with this over-stated effect size, Option Three is the least cost-effective approach to reducing ACSC ED visits among Illinois Medicaid enrollees. However, it is important to note that the policy was adopted with other outcomes in mind, as well.

Impact on Primary Care Barriers

Option Three scores two points for this criterion. This alternative should lead to improvements in the convenience and perception of quality related to primary care services, but would not likely change

the patient's perception of financial costs or health literacy. The IHH program should make the primary care system more convenient to access because patients and providers are matched based on patient needs and provider capacity to care for those needs. Additionally, the patient's IHH care coordinator is responsible for coordinating appointment scheduling that meets the patient's needs, which takes the burden off the patient. The tiered matching system based on patient health needs should also lead to increased patient confidence in the provider. This aspect of the program enables a more patient-centric approach and intentionally matches the patient with the provider who is best equipped to serve their health needs. Again, the patient would likely eventually notice tangible health improvements, which would also foster an affirmative attitude towards the patient-provider relationship.

Political Feasibility

Option Three receives a political feasibility score of three points. The questions in the political feasibility rubric seek to determine how likely a program is to be approved and implemented given the political climate. Since CMS approved Illinois' State Plan Amendment for this initiative and the IHH program is already being implemented, this alternative received the full three points that are possible under the political feasibility rubric.

Does the alternative require a new piece of legislation to be passed by the Illinois General Assembly?

No (+3 points). Implementation for the IHH program is already under-way.

Outcomes Matrix

		Alternative		
Evaluative Criteria	Weight	Cash Incentives	EDCC	IHH
Cost-effectiveness *Ratio* *Score*	60%	 $1,327/visit reduced 2	 $60/visit reduced 3	 $2,383/visit reduced 1
Impact on Primary Care Barriers	20%	1	2	2
Political Feasibility	20%	2	2	3
Total Score	100%	1.8	**2.6**	1.6

Summary of Tradeoffs

Option Two is clearly the most cost-effective approach considered, which is the most important criterion. However, Option Three provides guaranteed political feasibility, since the program is already authorized and in the process of being implemented, pending adoption of administrative rules. Option One's greatest strength is that it corrects the imbalance of financial incentives in a way that encourages using the primary care setting, but it does nothing to address convenience factors, confidence in primary care provider's ability, or patient understanding of appropriate ED use, which is likely why it has a poor cost-effectiveness ratio.

Recommendation

Based on the preceding analysis, I recommend that the Illinois Department of Public Health support Option Two: Implement an electronically-backed EDCC program. The most important factor to consider in a plan of action for Illinois is cost-effectiveness, which is why it is weighted at 60%. Option Two provides the most cost-effective approach to reducing ACSC ED visits among the Illinois Medicaid population by a substantial amount. The next best cost-effective alternative costs nearly $1,400 more per visit prevented. In light of Illinois' multi-billion-dollar fiscal crisis, Governor Pritzker has made it clear that all state programs must be cost-effective. Option Two clearly provides the best approach when considering these circumstances.

Option Two not only provides the most cost-effective option, but it also scores fairly well in terms of impact on barriers to primary care. The ability for primary care providers, ED physicians, and care coordinators to all share the same patient health information and treatment plans provides a powerful way to increase patients' confidence in their entire teams, and therefore be more willing to follow their providers' advice. Beyond that, the triggers that will alert providers to high-utilizers of the ED signal providers to engage the patient in a conversation about appropriate ED use. This opens up channels for the patient to discuss their confusion or unique challenges that keep them seeking care in the ED, which the provider can then address with the patient and remainder of the care team through the electronic exchange.

Option Two does require new legislation to be drafted and passed by the Illinois General Assembly. Fortunately, this does not seem to be a controversial policy considering the unanimous support that Virginia received for the same program design. The most critical political feasibility element of establishing this program will be receipt of federal HITECH funds. However, based on the requirements and purpose for HITECH funds and Virginia's success in securing funds for the same program design, it is highly probable that Illinois would also be granted the funds necessary to establish and implement this program.

This alternative is not without limitations. A technology-backed EDCC program does not address the fact that Illinois Medicaid enrollees pay the same price for primary care visits and non-emergent ED visits. This could backfire if the new capability of ED providers to access all patient health information and provide higher quality care renders the ED even more attractive than before. Research does not suggest this to be the case, but it is worthwhile to consider nonetheless.

Overall, Option Two provides a promising strategy to achieve significant reductions in ACSC ED visits among Illinois Medicaid enrollees. While there are several other approaches that could be taken, this one delivers the best combination of cost-effectiveness and political feasibility, all while addressing two key barriers to appropriate primary care use.

Considerations for Implementation

Buy-in from all ED physicians, primary care physicians serving Medicaid patients, and care coordinators will be critical to the successful implementation of an electronically-backed EDCC program. If these groups of stakeholders are begrudgingly forced to implement this program in their practices, they may not submit or consult all useful patient information, and the patient could suffer. For this reason, the EDCC Advisory Council will be important for gathering and communicating input from the groups they represent. Illinois' EDCC Advisory Council should also consult with Virginia's EDCC Advisory Council in order to learn from their own implementation process and preempt forthcoming challenges when possible.

Another important component of the implementation process will be selecting a vendor for the technology service. This responsibility will also fall to the EDCC Advisory Council. When selecting a vendor, the EDCC Advisory Council should consider models that could be expanded upon in the future to include other segments of the health care system, such as private-plan primary care physicians and specialty physicians. The vendor will also be responsible for visiting the EDs and other provider organizations to set-up the technology solution and train the relevant parties on using the exchange, so the EDCC Advisory Council should also take capacity and communication skills into account.

Finally, notice the cost-effectiveness discussion of this alternative only considers first-year costs. This is intentional, as the State of Illinois will only be responsible for getting this program up and running. From year two and on, the financing structure becomes the responsibility of the organizations utilizing the system: hospital EDs and Medicaid MCO networks. I recommend following Virginia's approach for future financing—a 50/50 split between hospital EDs and Medicaid Health Plans. Virginia's EDCC Advisory Council and the relevant groups of stakeholders determined this funding structure after careful consideration of other states' funding plans for similar programs (Virginia Department of Health, 2017). This funding plan provides financial sustainability so the EDCC program can be utilized in the long-term.

With successful implementation of an electronically-backed EDCC program, Illinois can significantly reduce ACSC ED use among Medicaid enrollees, which will lower the state's Medicaid costs and improve the health outcomes of one of Illinois' most vulnerable populations.

Appendix A: Virginia EDCC Program Capabilities

Virginia's 2017 H.B. 2209 outlines the following capabilities of the EDCC program:

- Receives real-time patient visit information from, and shares such information with, every hospital ED in the Commonwealth through integrations that enable receiving information from and delivering information into electronic health records systems utilized by such hospital EDs;

- Requires that all participants in the program have fully executed health care data exchange contracts that ensure that the secure and reliable exchange of patient information fully complies with patient privacy and security requirements of applicable state and federal laws and regulations, including the Health Insurance Portability and Accountability Act (HIPAA);

- Allows hospital EDs in the Commonwealth to receive real-time alerts triggered by analytics to identify patient-specific risks, to create and share care coordination plans and other care recommendations, and to access other clinically beneficial information related to patients receiving services in hospital EDs in the Commonwealth;

- Provides a patient's designated primary care physician and supporting clinical and care management personnel with treatment and care coordination information about a patient receiving services in a hospital ED in the Commonwealth, including care plans and hospital admissions, transfers, and discharges;

- Provides a patient's designated managed care organization and supporting clinical and care management personnel with care coordination plans and discharge and other treatment and care coordination information about a member receiving services in a hospital ED in the Commonwealth; and

- Integrates with the Prescription Monitoring Program and the Advance Health Care Directive Registry to enable automated query and automatic delivery of relevant information from such sources into the existing work flow of health care providers in the ED

(Virginia Department of Health, 2017).

Appendix B: Sensitivity Analysis Discussion

The alternatives evaluated in this report may not reap the exact reductions in ACSC ED visits as projected. However, the cost-effectiveness ratios for these alternatives are substantially different from one another. Accounting for a few percentage points more or less in regards to effectiveness does not change the recommendation that stems from this analysis. Option Two is twenty-two times as cost-effective as Option One and nearly forty times as cost-effective as Option Three. In conclusion, the analysis strongly favors Option Two. This recommendation is not sensitive to over or under estimates of effectiveness.

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