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Comparing Measures of Social Determinants of Health to Assess Population Risk

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Executive Summary

Social Determinants of Health (SDOH) include the social and physical conditions in which people are born, live and work on a daily basis. According to the County Health Rankings Model, these factors account for 50% of the modifiable contributors to health outcomes and include education, job status, income, social support, safety and the physical environment.[1] SDOH information is available from a variety of sources, which vary in terms of availability, standardization and precision. Census-derived neighborhood SDOH factors are broadly accessible but not necessarily representative of individual information. Direct person-level screening may be a gold standard of SDOH data but is not collected on all people or in consistent formats. How well do both sources of SDOH measures quantify and characterize patient risk status? This project addresses these issues and advances a growing body of literature to inform the ongoing optimization of population health and payment models.

This project examined a Colorado fee-for-service Medicaid population of 79,365 beneficiaries enrolled July 2018 through June 2019. The work began by combining data sources often considered in isolation into a unique dataset. Traditionally, payment models are based on enrollment and claims information, population health is driven by electronic health record (EHR) data, and policy is informed by publicly available data sources. This project combined these often-siloed data sources to create a comprehensive view of a patient.

This data asset was leveraged to produce several key findings. The first step investigated the efficacy of using neighborhood SDOH as a measure of the SDOH of individual residents. This work showed that broad, population-level data were not strong predictors of individual conditions. The second step examined the extent to which the different SDOH data sources predicted inpatient health care utilization and cost of a person, and it identified high-risk utilization and clinical characteristics (defined as having an inpatient admission, an emergency department visit or one of a few selected diseases noted in medical records). These efforts revealed that both individual and neighborhood SDOH data are modest predictors. The third step compared how the different SDOH data sources identified high-risk patients as characterized by hospital admission. Although the individual and neighborhood SDOH data sources predicted hospital admission with similar modest precision, they identified different patients as high-risk. The final step involved an initial assessment of the impact of incorporating SDOH measures from both possible data sources into a concurrent risk adjustment framework. Although this work did not improve the accuracy of the risk adjustment model studied, it can serve as a prototype for future enhanced work, ideally using a prospective risk adjustment model and more than one year of available claims and utilization data.

These research findings are relevant to highlight the limited but promising value in incorporating SDOH data into population health and payment models. Continued investigation is warranted to extend the work and address limitations that have been encountered. For instance, the lack of universal individual screening for SDOH and lack of standardization in data collection limited the sample sizes for several of the analyses. Also, although the data source created for this project was robust and comprehensive in scope, it included only a single year of claims experience and therefore limited risk adjustment analysis methods to a

concurrent rather than a prospective model. Further work will benefit from including a larger sample and other populations as proof of methods and findings developed with the study population.

In conclusion, as the study of SDOH as part of risk adjustment and risk stratification continues to evolve, both individual and neighborhood data sources for SDOH are likely to have a role in identifying resources to meet care needs both immediately and in the future.

Section 1: Introduction

1.1 RATIONALE

With the aging of the population and concomitant health care expenditure growth, international interest exists in improving quality of care and overall population health while reining in the cost of care.[2,3,4] Considerable experimentation is under way—patient-centered medical homes, accountable care organizations, accountable health communities, state innovation models, alternative payment models and other population health initiatives—seeking to optimize the organization and financing of health care services, especially for individuals with complex medical, behavioral and social needs.[5,6,7,8,9,10] Because a small percentage of the population accounts for a large share of overall health expenditures, refining traditional actuarial methods to predict which patients will be costly in the near future (predictive risk modeling) remains a core and key important strategy to target these efforts.

Historically, actuarial predictive risk models have been constrained to information available through medical claims and enrollment data, such as age, gender, diagnoses within the claim history, disability status and pharmacy use. However, the observation that "ZIP code is a better predictor of your health than your genetic code" is increasingly supported by interdisciplinary disparities research.[11,12,13,14] Federally Qualified Health Centers (FQHCs), in their role as federally funded, community-based providers of primary and preventive health care regardless of a patient's ability to pay, have been the subject of long-standing interest in community influences on health, now sometimes termed "Social Determinants of Health" (SDOH). SDOH are the social and physical conditions in which people are born, live and work on a daily basis. These include factors such as socioeconomic status, education, neighborhood and physical environment, employment, social support networks and access to health care.[2]

Prompted in part by external requirements, such as Meaningful Use phase 3, FQHCs and other clinical providers are expanding and formalizing processes to identify and respond to patient SDOH needs.[15] Some state Medicaid programs have also begun adjusting payments and/or quality measures for SDOH.[16] Despite this growing recognition that SDOH should be measured and incorporated into conceptualizations of patient and population risk, methods for doing so are far from standardized, and best practices are unclear.

Predictive risk models that incorporate SDOH measures have clinical and administrative utility, as well as actuarial relevance. Clinically, they can assist with "case finding," that is, identifying high-risk populations and individual patients appropriate for intensive intervention. Segmenting populations according to risk can also inform administrative planning decisions related to targeted outreach, delivery system design, performance assessment (e.g., disparities analysis) and resource allocation (e.g., staffing and community investment). Finally, SDOH-adjusted models may be used to more accurately risk adjust payments and/or clinical outcomes in actuarial, quality or research applications.
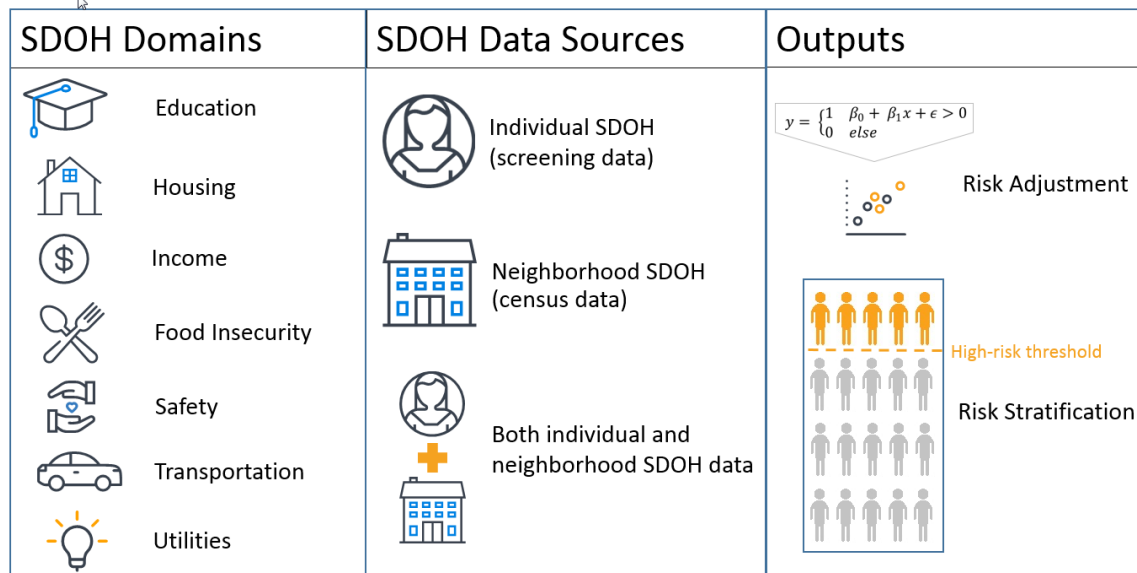
Beyond actuaries and FQHCs, SDOH-enhanced predictive risk models are useful to other organizations and individuals that are already seeking to leverage SDOH data to better serve lower income patients. These include other safety net providers, disparity researchers, health plans and federal, state and local

governments. Health plans with existing SDOH-focused programs include Kaiser,[17] Humana[18] and UnitedHealth.[19] State Medicaid agencies that participate in Delivery System Reform Incentive Payment (DSRIP) programs may be especially interested in this work.[20,21] Additionally, the U.S. Department of Health and Human Services has committed to "whole person care" through better addressing SDOH.[22]

1.2 SPECIFIC AIMS AND RESEARCH QUESTIONS

The overall aim of this project is to assess how well different measures of SDOH quantify and characterize patient risk status to optimize a variety of population health and payment purposes. Specifically, this project compared SDOH risk as defined via publicly available census data with individual-level information gathered from direct patient screening questionnaires administered at the time of medical encounters and tracked in patient electronic health records (EHRs). Using SDOH information from these sources, we then sought to quantify the predictive power gained by including SDOH variables along with more traditional demographic and medical claim-derived variables in predictive risk modeling. A simplified logic model is presented in Figure 1 as a summary of the project.

Figure 1
PROJECT LOGIC MODEL

This research addressed the following specific aims and research questions:

Aim 1: Determine whether measures of neighborhood SDOH risk from the public domain can be used as proxies for information collected through in-person screening processes given personal screening is not collected universally or standardized.

- Research Question 1: How closely does SDOH information at the census tract level correlate with known SDOH from patient screening questionnaires?

Aim 2: Determine whether measures of SDOH risk (individual, neighborhood, or both) improve prediction of cost and utilization outcomes as well as high-risk utilization and clinical characteristics for risk stratification purposes.

- Research Question 2: To what extent do SDOH measures from patient screening questionnaires and publicly available sources predict risk-adjusted hospital admission rates, inpatient medical expenditures, total inpatient days and clinical characteristics?

Aim 3: Describe the extent to which different approaches to modeling SDOH risk change who is identified as high-risk.

- Research Question 3: How does high-risk status defined using models that incorporate SDOH patient screening questionnaires compare to that defined using models that incorporate census-derived information?

Aim 4: Assess the impact of incorporating SDOH measures into a risk adjustment framework.

- Research Question 4: Does the incorporation of SDOH measures improve predictive power of risk adjustment?

1.3 BACKGROUND

Several systematic reviews confirm that a wide variety of SDOH are statistically associated with health-related conditions, behaviors, events and costs.[23,24,25] While many studies focus on SDOH measured at the individual level, neighborhood factors have been demonstrated to have effects independent of individual SDOH on the following: blood pressure in adolescents,[26] cardiovascular disease risk factors (diabetes, smoking, BMI),[27,28] depressive symptoms in Mexican-American adults,[29] heart failure incidence and readmissions,[30] and overall and homicide-related mortality.[31,32,33] These findings are consistent with social epidemiology theory that place-based (e.g., neighborhood) differences in outcomes derive from both compositional factors (characteristics of individuals) and contextual factors (neighborhood social or physical characteristics). Controlling for the former does not erase the impact of the latter; for example, relatively high-income persons living in low-income neighborhoods may still be exposed to health risks such as pollution, crime, stress and lack of local amenities.[34] While these research findings are not new, value-based payment models have refocused attention on individual and neighborhood SDOH as opportunities for intervention, with concomitant increases in governmental and private investments.[18,35, 36] Variously branded as population health or anchor mission initiatives, a growing literature is documenting individual and community-level interventions that "bridge social and medical care."[37,25]

The recognition that SDOH are significant drivers of health and health care utilization patterns has also prompted changes to screening practices and payment policy.[35] Professional medical organizations—such as the National Association of Community Health Centers and the American College of Physicians—now recommend screening for SDOH.[38,39] Additionally, both Medicare and Medicaid have strengthened requirements to screen and assess for social and behavioral risk factors. In Colorado, for example, the state Medicaid agency conducts a risk assessment with its new members that covers some SDOH domains; primary care providers are required to conduct risk-tailored assessments including social and behavioral risks and follow-up on identified needs.[40] Implementation research reveals that clinic-based screening adoption and resultant data quality are highly variable, depending on factors such as the screening scope (e.g., targeted or universal), integration with the electronic medical record, availability of referral options, and associated staff time and expense, all of which influence patient and provider buy-in.[15,38] Kaiser Permanente, Denver Health and other organizations have successfully implemented automated risk stratification methodologies, followed by more targeted clinical and SDOH assessments.[41,42,43] Yet, evidence on how best to conduct targeted screening is lacking.

Screening challenges notwithstanding, a handful of state Medicaid agencies have created, or are planning to implement, incentive structures to require and/or reward providers for addressing SDOH. For instance, Massachusetts's Medicaid and Children's Health Insurance Program (CHIP) uses a risk adjustment methodology that incorporates the Neighborhood Stress Score (NSS7), which is a "composite measure of economic stress which summarizes seven census variables that were identified in a principal components analysis of 2013 Massachusetts Medicaid data."[44,45] Similarly, Minnesota is adjusting its population-level Medicaid payments based on Metrics for Health Equity, which are SDOH-related performance measures.[7] The Rhode Island Medicaid program is planning to adjust the shared savings formula to account for the portion of Medicaid members who are screened for SDOH.[8] The necessity of adjusting for SDOH is supported by a 2013 report by the Society of Actuaries' Health Section that illustrated its potential to reduce prediction bias, especially in markets with pockets of concentrated SDOH risk.[12] This report showed that inclusion of non-traditional socioeconomic variables into risk adjustment models has minimal impact on the model's predictive accuracy and explanatory power. However, not including these variables results in a prediction bias for member cohorts described by these non-traditional variables.

National quality and regulatory agencies, such as the National Quality Forum (NQF), the Department of Health and Human Service (DHHS), and the National Academies of Sciences, Engineering, and Medicine, have also stepped into the fray.[46,35,47] In considering whether and how to risk-adjust performance measures for SDOH, several barriers were identified: theoretical limitations (e.g., causal mechanisms are complex and poorly understood), methodological challenges (e.g., lack of standardized SDOH data) and appropriateness concerns (e.g., that risk-adjustment could mask disparities in performance). Nonetheless, all three groups have acknowledged that SDOH adjustment is appropriate under certain circumstances. For example, the NQF Risk Adjustment Expert Panel recommended including social risk factors in risk-adjusted performance measurement when supported by conceptual and empirical evidence, and the NQF has since published a list of NQF-Endorsed Measures Adjusted for Social Risk.[48] Similarly, CMS has begun risk adjusting Medicare quality measures ("stars" ratings) for dual Medicare and Medicaid eligibility status, which captures some dimensions of socioeconomic status. These initial forays into SDOH-adjustment are intentionally cautious and have underlined the need for continued thoughtful research.[49]

Section 2: Methods

2.1 SETTING

Three large FQHCs in Colorado participated in the study: Denver Health (https://www.denverhealth.org), STRIDE Community Health Center (https://stridehc.org) and Clinica Family Health (https://www.clinica.org). These sites are located in and around the Denver metro area. All participants have missions to serve low-income populations, the majority of whom are at or below 200% of the federal poverty level, and these three are among the largest Medicaid providers in Colorado.

2.2 DATA SOURCES

The dataset for this project was derived primarily from a linked data warehouse that is managed on behalf of Colorado's FQHCs. The Colorado Community Managed Care Network (CCMCN) maintains an integrated data warehouse that combines attributed Medicaid Regional Accountable Entity (RAE) enrollment member files, SDOH screening data, EHR clinical data and claims from the Center for Improving Value in Health Care (CIVHC) All-Payer Claims Database (APCD). Data are aggregated by creating a unique identifier for patients through a Master Patient Index (MPI) system that identifies and links patients to each specific source.

FQHCs collect SDOH information through a variety of methods, including the following: program eligibility and enrollment processes (e.g., income, family size), patient outreach (e.g., health risk and clinical assessments), patient registration for services (e.g., housing status) and information gathering during health visits (e.g., health behaviors and social history). Additionally, all study partners have formal SDOH screening programs for at least a subset of their population. Two of the study partners participate in the Denver Regional Council of Governments Centers for Medicare and Medicaid Accountable Health Communities Model (AHCM; https://drcog.org/programs/area-agency-aging/accountable-health-communities) and utilize the AHCM SDOH assessment (see Appendix A). The third site utilizes the Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE; http://www.nachc.org/research-and-data/prapare/; see Appendix B). These two surveys assess similar domains but with some different questions and response values. The following domains were included in the analysis: education, housing, food insecurity, safety, transportation, income and utilities. Additional details are provided below related to survey metrics.

The study dataset also included the nine-digit zip code from the patient's most recent Medicaid enrollment file, which was used to link to the American Community Survey (ACS) data for neighborhood estimates of SDOH. The ACS five-year estimates for 2013–2017 were utilized for this study. Neighborhood SDOH characteristics include income, unemployment, home rental/ownership status, family size and other neighborhood descriptive information. The Area Deprivation Index (ADI) was also included as a singular measure of neighborhood disadvantage.[50]

CCMCN prepared a de-identified study dataset for the analysis. This study was reviewed by the Colorado Multiple Institution Review Board and was determined to meet the criteria for exemption under category 4, secondary research.

2.3 SURVEY DATA METRICS

Any affirmative survey responses were identified by the research team to characterize individuals with an SDOH need by domain on either the AHCM assessment or the PRAPARE. Survey domains were not entirely consistent between the two surveys, and SDOH domains that were included in one of the surveys but not the other were excluded. For example, the PRAPARE includes a question about recent incarceration, but a similar item does not exist on the AHCM assessment; therefore, incarceration was not included in this analysis. Survey items and responses were also not worded exactly the same between the two surveys but were mapped by the research team. For example, housing insecurity was identified based on one of the following responses on the AHCM question about living situation today: "I have a place to live today, but I am worried about losing it in the future" or "I do not have a steady place to live (I am temporarily staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, abandoned building, bus or train station, or in a park)." Housing insecurity was identified based on the following response on the PRAPARE about housing situation today: "I do not have housing (staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, or in a park)." Full details on the response values used to define affirmative SDOH responses are provided in Appendix C. Some individuals had both an AHCM assessment and a PRAPARE response. In this case, only the PRAPARE response was considered since the PRAPARE survey was generally more complete. Survey responses, overall and affirmative, are summarized by domain in Table 1.

Table 2

INDIVIDUAL SDOH RESPONSES BY DOMAIN (ADULTS VS. CHILDREN)

SDOH Domain	Affirmative		Any Response	
	N	%	N	%
Adults (N=7,154)				

Education	1,248	17.4%	4,492	62.8%
Housing	637	8.9%	6,893	96.4%
Food Insecurity	545	7.6%	5,699	79.7%
Safety	282	3.9%	5,181	72.4%
Transportation	434	6.1%	6,389	89.3%
Utilities	227	3.2%	5,666	79.2%
Children (N=6,109)				
Education	540	8.8%	1,227	20.1%
Housing	226	3.7%	6,070	99.4%
Food Insecurity	974	15.9%	5,889	96.4%
Safety	446	7.3%	4,786	78.3%
Transportation	414	6.8%	5,653	92.5%
Utilities	308	5.0%	5,877	96.2%

2.4 STUDY POPULATION

This study population started with 231,989 Medicaid fee-for-service members. The population was then limited for each research question (RQ) based on data completeness per analysis (i.e., analyses using survey data were limited to members with completed surveys). RQ1 was limited to the 13,263 patients with completed SDOH survey responses (Table 1) with geographic information for census-derived SDOH measures. Responses for patients with multiple completed surveys were consolidated, and individuals with disparate responses between surveys were removed from the sample. The base population for RQ2–RQ4 was limited to 79,365 members with claims data who were continuously enrolled from July 1, 2018, through June 30, 2019, with geographic information for census-derived SDOH measures. The RQ2–RQ4 study populations were further refined as models based on the different data sources were fit based on presence of SDOH survey data, census data and EHR clinical data. Demographics, average enrollment and utilization of the RQ2–RQ4 study population are summarized in Table 2.

Table 2

DEMOGRAPHICS, AVERAGE ENROLLMENT AND UTILIZATION OF RQ2–RQ4 STUDY POPULATION

	Census Only	Census + Survey Only	Census + Clinical Only	Census + Survey + Clinical	Total
N	25,399	377	41,168	12,421	79,365
% Male	53.4%	50.9%	46.6%	41.4%	48.0%
Average Age	32.7	11.0	28.0	32.1	30.1
Average Enrollment Months	12	12	12	12	12
Average Dual Eligible Months	0.71	0.02	0.54	0.64	0.61
Average Annual IP Allowed Costs (Not Risk Adjusted)	$371.64	$68.84	$420.18	$769.39	$457.63
Average Normalized MARA IP Score*	0.71	0.42	0.96	1.74	1.00
Average Normalized MARA Total Score*	0.66	0.64	0.98	1.76	1.00
Average IP Admits	0.04	0.01	0.05	0.09	0.05
Average IP Days	0.25	0.04	0.26	0.45	0.29

*MARA is a risk adjuster, which is a statistical process that produces a score that measures a member's expected health care costs. After normalization, a score of 1.0 represents a population average score, a score of less than 1.0 represents an expected cost lower than average, and a score higher than 1.0 represents an expected cost higher than average.

2.5 ANALYSIS PLAN

Using the aggregated dataset with individual-level SDOH from screening data and neighborhood-level SDOH from census data for the population described above, the following analysis plan was executed, presented below by RQ.

Research Question 1: How closely does SDOH information at the census tract level correlate with known SDOH from patient screening questionnaires?

For both theoretical and practical (data availability) reasons, separate analyses were conducted for adult and children populations. Elastic net regression models were used to calibrate models that predict individual SDOH response variables based on neighborhood SDOH risk factors. Elastic net regression models combine both the ability to shrink some predictor variable coefficients (a feature of ridge regression) and the ability to eliminate some predictor variables (a feature of lasso regression). This analysis consisted of separate models for social vulnerability across the following SDOH domains: education, housing, food insecurity, safety, transportation, utilities and income. Given a person's response to various survey questions, they were identified as either having a specific SDOH vulnerability or not. Logistic regressions were fit for most response variables given binary outcomes. Because many members of the population reported zero income, income was modeled, first, using logistic regression as a binary flag indicating the person had non-zero income and, second, using linear regression with total household income as a percent of federal poverty level (FPL) as the response variable for those with non-zero income. Possible predictor variables included patient age, sex, all ACS neighborhood variables and ADI national and state rank. Predictor variables were selected to remain in the model using elastic net regression techniques with fivefold cross-validation to optimize both alpha (α) and lambda (λ). Fit was assessed using the area under the curve (AUC) for the logistic models and R^2 for the linear models.[1]

Research Question 2: To what extent do SDOH measures from patient screening questionnaires and publicly available sources predict risk-adjusted hospital admission rates and inpatient medical expenditures as well as high-risk utilization and clinical characteristics?

This analysis utilized elastic net regression modeling to predict risk-adjusted annual cost and utilization of inpatient hospital services as well as high-risk utilization and EHR-based clinical characteristics, as defined below, based on three different sets of predictor variables: individual SDOH (screening data), neighborhood SDOH (census data) and both individual and neighborhood SDOH data. Elastic net regressions were used to calibrate predictive models.

The cost and utilization modeling were conducted in two steps. The first step utilized logistic regression to model the response variable as a binary flag based on the person having at least one inpatient admit. The second step utilized linear regression to model the continuous variables (severity) of inpatient costs and utilization in days and admits for those with at least one inpatient admit. Note that for the second step, a log transformation of the response variables was utilized so that they followed more of a normal distribution to be appropriately fit with linear regression.

The high-risk utilization and EHR-based clinical characteristics were modeled utilizing logistic regression similar to the first step for cost and utilizations. Binary flags were created to indicate if the person had the high-risk utilization or clinical characteristic. EHR and claims data within the one-year claims experience period (July 2018 to June 2019) were used to flag patient populations as high-risk based on five conditions:

1. Hypertension (individual diagnosed with hypertension in EHR clinical data)
2. Diabetes (individual diagnosed with diabetes or has an elevated hemoglobin A1c value indicating prediabetes or diabetes in EHR clinical data)
3. Depression (individual diagnosed with depression in EHR clinical data)
4. Hospital admits (individual has more than one inpatient admission for any cause)
5. Emergency department encounters (individual has more than one emergency department encounter without hospital admission)

Across all models fit for RQ2, the same demographic (age and sex) and individual and/or neighborhood SDOH variables from RQ1 were available as the possible predictor variables as well as benefit eligibility as defined by the number of Medicare dual eligible months in the experience period (July 2018 to June 2019). Also, as with RQ1, predictor variables were selected to remain in the model using elastic net regression techniques with fivefold cross-validation to optimize both alpha (α) and lambda (λ), and model fit was assessed using the area under the curve (AUC) for the logistic models and R^2 for the linear models.

Research Question 3: How does high-risk status defined using models that incorporate SDOH patient screening questionnaires compare to that defined using models that incorporate census-derived information?

This analysis leveraged the model of at least one hospital admission developed in RQ2 to define high-risk population segments (e.g., risk quintiles). For each of the three SDOH predictor variable sets, an individual's probability of at least one hospital admission was scored and quintiles were assigned. The three different models were then compared in terms of concordance and variance in risk quintile for hospital admission. The three models were also compared based on the EHR clinical characteristics from RQ2 to describe the percent of each risk quintile with the EHR clinical diagnoses.

Research Question 4: Does the incorporation of SDOH measures improve predictive power of risk adjustment?

While many risk adjustment models exist (both publicly and commercially available), the Milliman Advanced Risk Adjuster (MARA) was selected and used to calculate concurrent total risk scores for each individual. Use of different risk adjustment models would have produced different results in terms of fit and specific model parameters. Non-risk-adjusted claims-based inpatient annual allowed cost was the response variable. Cost was modeled first using logistic regression to predict whether a person had nonzero inpatient claims and then using linear regression to predict the log transformed annual allowed cost (severity) for those with non-zero cost. Models were built with the concurrent MARA risk score as the only predictor variable and then with the addition of variables in one of the SDOH domains of income, education, housing, food, safety, transportation and utilities using both individual and neighborhood SDOH data sources. For the models that used concurrent MARA risk score as the only predictor variable, simple logistic or linear regressions were used since there was no need to drop any predictor variables. For the rest of the models, elastic net regression techniques with fivefold cross validation were used to select SDOH variables to remain in the model to optimize both alpha (α) and lambda (λ). Model fit was assessed using the area under the curve (AUC) for the logistic models and R^2 for the linear models.

Section 3: Results

3.1 INDIVIDUAL VERSUS NEIGHBORHOOD VARIABLES

Overall, census-derived neighborhood SDOH variables were not strong predictors of individual SDOH needs. As seen in Table 3, AUC values ranged from 0.53 to 0.66 and lacked evidence of successful classification (slightly better than a flip of a coin) between persons with and without responses indicating issues present in a given SDOH domain. This pattern was consistent across adult and child populations and when using various SDOH domains as response variables. Details of the individual models including coefficients for each of the available predictor variables are available in Appendix D.

Table 3
RESEARCH QUESTION 1: REGRESSION RESULTS PREDICTING INDIVIDUAL SDOH BASED ON NEIGHBORHOOD

Model Type	Response Variable (SDOH Domain)	Population	N	Fit (AUC) * indicates R²	α	λ
Logistic Elastic Net Regression	Education	Adult	4,432	0.66	0.33	0.025
Logistic Elastic Net Regression	Education	Child	1,222	0.64	0.33	0.130
Logistic Elastic Net Regression	Housing	Adult	6,790	0.61	0.78	0.004
Logistic Elastic Net Regression	Housing	Child	6,037	0.63	0.22	0.001
Logistic Elastic Net Regression	Food	Adult	5,612	0.57	0.11	0.004
Logistic Elastic Net Regression	Food	Child	5,857	0.58	0.22	0.001
Logistic Elastic Net Regression	Safety	Adult	5,111	0.53	0.78	0.004
Logistic Elastic Net Regression	Safety	Child	4,756	0.60	0.11	0.000
Logistic Elastic Net Regression	Transportation	Adult	6,300	0.60	0.11	0.105
Logistic Elastic Net Regression	Transportation	Child	5,621	0.66	0.89	0.000
Logistic Elastic Net Regression	Utilities	Adult	5,580	0.56	0.11	0.043
Logistic Elastic Net Regression	Utilities	Child	5,845	0.58	0.56	0.000
Logistic Elastic Net Regression	Non-Zero Income Flag	Adult	3,337	0.55	0.56	0.032
Elastic Net Regression	Percent FPL (for those with non-zero income)	Adult	1,992	0.04*	0.11	0.112
Logistic Elastic Net Regression	Non-Zero Income Flag	Child	1,316	0.53	0.89	0.006
Elastic Net Regression	Percent FPL (for those with non-zero income)	Child	1,042	0.02*	0.11	0.214

3.2 INPATIENT COST AND UTILIZATION, HIGH-RISK UTILIZATION AND CLINICAL CHARACTERISTICS

Overall, the predictive power of models for risk-adjusted inpatient allowed cost and utilization based on SDOH factors was low and similar regardless of source of the SDOH data (Table 4). Models predicting the occurrence of an inpatient admission performed better than models predicting severity (cost, admits, days), which generally performed poorly. Individual screening data were slightly more predictive of risk-adjusted cost and utilization than neighborhood data. Most of the models also did not gain meaningful predictive power by including both individual and neighborhood data. Within the screening data models, evidence of SDOH was variably related to inpatient cost and utilization. For example, housing issues were positively related, but food insecurity was negatively associated with inpatient cost and utilization. Details of the individual models including coefficients for each of the available predictor variables are available in Appendix E.

Table 4
RESEARCH QUESTION 2: REGRESSION RESULTS PREDICTING RISK-ADJUSTED INPATIENT COST AND UTILIZATION BASED ON INDIVIDUAL AND NEIGHBORHOOD SDOH DATA SOURCES

Model Type	Response Variable	Predictor Variable Source	N	Fit (AUC) * indicates R²	α	λ
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening Data	12,786	0.71	0.78	0.002
Logistic Elastic Net Regression	Inpatient Admit Flag	Census Data	79,204	0.68	0.11	0.015
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening and Census Data	12,776	0.71	1.00	0.008
Elastic Net Regression	Log (Inpatient Total Allowed Cost)	Screening Data	900	0.03*	1.00	0.013
Elastic Net Regression	Log (Inpatient Total Allowed Cost)	Census Data	2,979	0.02*	0.11	0.236
Elastic Net Regression	Log (Inpatient Total Allowed Cost)	Screening and Census Data	898	0.03*	0.11	0.444

Elastic Net Regression	Log (Inpatient Total Admits)	Screening Data	900	0.14*	1.00	0.012
Elastic Net Regression	Log (Inpatient Total Admits)	Census Data	2,979	0.09*	1.00	0.031
Elastic Net Regression	Log (Inpatient Total Admits)	Screening and Census Data	898	0.08*	0.11	0.348
Elastic Net Regression	Log (Inpatient Total Days)	Screening Data	900	0.02*	1.00	0.021
Elastic Net Regression	Log (Inpatient Total Days)	Census Data	2,979	0.01*	0.11	0.253
Elastic Net Regression	Log (Inpatient Total Days)	Screening and Census Data	898	0.04*	1.00	0.079

Models predicting hypertension and diabetes high-risk patient populations based on SDOH factors performed well (AUC between 0.83 and 0.89). Models predicting high-risk populations with depression and patients with more than one hospital admissions performed more modestly, and models predicting patients with multiple emergency department encounters performed poorly (Table 5). The models performed similarly regardless of whether neighborhood SDOH variables were included as a supplement to individual-level SDOH data sources. Within the screening data models, evidence of SDOH was variably related to the different high-risk patient groups. For example, housing issues were positively associated with risk of being in the hypertension, depression or emergency department groups but negatively associated with being in the diabetes group and shown not to be significantly associated with hospital admissions through the model calibration process. The SDOH income domain as represented by percent of FPL was negatively associated with risk of being in the hypertension and hospital and emergency department admission groups. Therefore, lower FPL (less income) was associated with greater risk of being in these high-risk groups, but the FPL variable was shown not to be significantly associated through the calibration process in the diabetes or depression models. Details of the individual models including coefficients for each of the available predictor variables are available in Appendix F.

Table 5
RESEARCH QUESTION 2: REGRESSION RESULTS PREDICTING HIGH-RISK UTILIZATION AND CLINICAL CHARACTERISTICS BASED ON INDIVIDUAL AND NEIGHBORHOOD SDOH DATA SOURCES

Model Type	Response Variable	Predictor Variable Source	N	Fit (AUC)	α	λ
Logistic Elastic Net Regression	Hypertension Flag	Screening Data	12,409	0.89	0.11	0.011
Logistic Elastic Net Regression	Hypertension Flag	Census Data	53,471	0.85	0.11	0.013
Logistic Elastic Net Regression	Hypertension Flag	Screening and Census Data	12,399	0.87	0.89	0.006
Logistic Elastic Net Regression	Diabetes Flag	Screening Data	12,409	0.83	0.44	0.003
Logistic Elastic Net Regression	Diabetes Flag	Census Data	53,471	0.85	0.11	0.012
Logistic Elastic Net Regression	Diabetes Flag	Screening and Census Data	12,399	0.84	0.11	0.019
Logistic Elastic Net Regression	Depression Flag	Screening Data	12,409	0.75	0.33	0.017
Logistic Elastic Net Regression	Depression Flag	Census Data	53,471	0.74	1.00	0.002
Logistic Elastic Net Regression	Depression Flag	Screening and Census Data	12,399	0.75	0.89	0.004
Logistic Elastic Net Regression	>1 Hospital Admits	Screening Data	12,786	0.77	0.56	0.002
Logistic Elastic Net Regression	>1 Hospital Admits	Census Data	79,204	0.74	0.11	0.005
Logistic Elastic Net Regression	>1 Hospital Admits	Screening and Census Data	12,776	0.76	0.22	0.008
Logistic Elastic Net Regression	>1 ED Admits	Screening Data	12,786	0.61	0.78	0.002
Logistic Elastic Net Regression	>1 ED Admits	Census Data	79,204	0.59	0.22	0.002

| Logistic Elastic Net Regression | >1 ED Admits | Screening and Census Data | 12,776 | 0.62 | 0.11 | 0.040 |

3.3 HIGH-RISK PATIENT IDENTIFICATION

In answering RQ3, models were created to predict the risk-adjusted probability of an inpatient admit using individual and/or neighborhood SDOH data sources. Individuals were scored based on their probability of an inpatient admit using each of the three models. Scores were ordered from lowest to highest, and each individual was assigned a quintile for each model (Table 6). Quintile 1 contains the 20% of individuals with the lowest probability of an inpatient admission, and Quintile 5 contains the 20% of individuals with the highest probability of an inpatient admission. Risk quintile of hospital admission from the model of individual screening data was not relatively concordant with the model based on census data. Only 49.5% of patients were in the same risk quintile between the two models, and 10.6% varying risk by more than one quintile. The model of census data also had low concordance with the model based on screening and census data. These models had the lowest concordance with only 45.5% of patients falling into the same risk quintile, and 9.4% varying risk by more than one quintile. Comparatively, the highest concordance in risk of hospital admission was between the model sourced from individual screening data and the model from screening and census data. These models were fairly concordant with the 72.4% of patients falling into the same risk quintiles and only 1.3% of patients varying risk by more than one quintile.

Table 6
RESEARCH QUESTION 3: RISK QUINTILES OF RISK ADJUSTED PROBABILITY OF AN INPATIENT HOSPITAL ADMISSION BASED ON INDIVIDUAL AND/OR NEIGHBORHOOD SDOH DATA SOURCES

Predictor Variable Source	Quin-tile	Screening Data						Screening and Census Data				
		1	2	3	4	5	Total	1	2	3	4	5
Census Data	1	**1,964**	380	165	50	1	2,560	**1,739**	537	222	62	—
	2	473	**1,267**	444	331	44	2,559	777	**1,048**	369	342	23
	3	70	777	**946**	395	371	2,559	23	925	**869**	334	408
	4	21	137	872	**769**	761	2,560	1	43	1,021	**768**	727
	5	9	21	133	1,013	**1,384**	2,560	—	8	74	1,076	**1,402**
	Total	2,537	2,582	2,560	2,558	2,561	12,798	2,540	2,561	2,555	2,582	2,560
Screening and Census Data	1	**2,037**	483	20	—	—	2,540					
	2	442	**1,570**	515	34	—	2,561					
	3	48	498	**1,633**	348	28	2,555					
	4	7	31	391	**1,824**	329	2,582					
	5	3	—	1	352	**2,204**	2,560					

The percent of individuals identified as high-risk as defined in RQ2 using the EHR clinical data for hypertension, diabetes and depression was identified similarly within each of the probability of hospital admission quintiles when compared across the three different models based on SDOH data source (Table 7). For example, across all three SDOH data sources, the majority (51–56%) of the highest risk quintile are patients with the hypertension high-risk flag. Similarly, patients with the diabetes and depression high-risk flags represent large proportions (40–42% and 43–46%, respectively) of the patients with the highest risk of the hospital admission quintile.

Table 7
RESEARCH QUESTION 3: PERCENT OF INDIVIDUALS IDENTIFIED AS HIGH-RISK WITHIN RISK QUINTILES OF HOSPITAL ADMISSION BASED ON INDIVIDUAL AND NEIGHBORHOOD SDOH DATA SOURCES

Predictor Variable Source	High-Risk Flag	Quintile				
		1	2	3	4	5
Screening Data	Hypertension	2%	7%	17%	32%	51%

	Diabetes	2%	6%	12%	22%	40%
	Depression	6%	14%	29%	37%	43%
Census Data	Hypertension	1%	5%	16%	32%	56%
	Diabetes	2%	3%	12%	23%	41%
	Depression	4%	10%	30%	38%	46%
Screening and Census Data	Hypertension	1%	5%	16%	32%	54%
	Diabetes	1%	4%	12%	22%	42%
	Depression	4%	16%	28%	37%	43%

3.4 RISK ADJUSTMENT

When using a concurrent risk adjustment model, the incorporation of SDOH measures does not improve accuracy of risk adjustment. Across the various domains of SDOH (income, education, housing, food, safety, transportation and utilities), incorporation of the SDOH individual screening and neighborhood census measures had no impact on improving the prediction of inpatient costs based on the MARA concurrent risk score (Table 8). This pattern was consistent across the logistic models of costs as a flag and linear models of log transformed allowed costs as a continuous variable. Details of the individual models including coefficients for each of the available predictor variables are available in Appendix G.

Table 8
RESEARCH QUESTION 4: REGRESSION RESULTS PREDICTING COST AND UTILIZATION BASED ON INDIVIDUAL AND NEIGHBORHOOD DATA SOURCES BY SDOH DOMAIN

Model Type	Response Variable	Predictor Variable Source (+ MARA Risk Score)	N	Fit (AUC) * indicates R^2	α	λ
Logistic Regression	Inpatient Admit Flag	N/A	12,798	0.93	N/A	N/A
Linear Regression	Log (Inpatient Total Allowed Costs)	N/A	902	0.24*	N/A	N/A
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening and Census Income Variables	12,776	0.93	1.00	0.013
Elastic Net Regression	Log (Inpatient Total Allowed Costs)	Screening and Census Income Variables	898	0.19*	0.11	0.201
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening and Census Education Variables	12,798	0.93	0.11	0.270
Elastic Net Regression	Log (Inpatient Total Allowed Costs)	Screening and Census Education Variables	902	0.23*	0.22	0.127
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening and Census Housing Variables	12,788	0.93	0.89	0.010
Elastic Net Regression	Log (Inpatient Total Allowed Costs)	Screening and Census Housing Variables	900	0.23*	0.11	0.194
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening and Census Food Variables	12,788	0.93	1.00	0.022
Elastic Net Regression	Log (Inpatient Total Allowed Costs)	Screening and Census Food Variables	900	0.21*	0.56	0.056
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening Safety Variables	12,798	0.93	1.00	0.058
Elastic Net Regression	Log (Inpatient Total Allowed Costs)	Screening Safety Variables	902	0.23*	0.22	0.072
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening and Census Transportation Variables	12,788	0.93	0.11	0.115
Elastic Net Regression	Log (Inpatient Total Allowed Costs)	Screening and Census Transportation Variables	900	0.21*	0.00	0.051
Logistic Elastic Net Regression	Inpatient Admit Flag	Screening and Census Utilities Variables	12,788	0.93	1.00	0.082

| Elastic Net Regression | Log (Inpatient Total Allowed Costs) | Screening and Census Utilities Variables | 900 | 0.23* | 0.11 | 0.084 |

Section 4: Discussion

4.1 SUMMARY OF EVIDENCE

Several key findings were produced from this research. Overall, census-derived neighborhood SDOH variables were not strong predictors of individual SDOH needs identified by screening instruments. Furthermore, neighborhood and individual SDOH data sources also differed in terms of which patients were identified as high-risk. Despite this evidence that neighborhood SDOH is not a good proxy for identifying individual SDOH needs or identifying the same people as individual SDOH data, neighborhood SDOH did perform similarly to individual SDOH, albeit modestly, in prediction of inpatient cost and utilization, but neither data source produced improved accuracy of concurrent risk adjustment. Surprisingly, evidence of SDOH was not always associated with inpatient cost, inpatient utilization and high-risk patient status as would have been expected. Therefore, this research, which needs to be interpreted in light of the limitations discussed below, does not provide support for potentially difficult to implement policies to gather individual SDOH for the sole purpose of informing inpatient cost and utilization. There is an essential role for these data in the identification of specific needs of individual people. Given the current limitations in collection and standardization of individual SDOH, neighborhood SDOH is a more accessible option that could be considered for projects attempting to make an initial attempt at incorporating SDOH in predictions of inpatient cost and utilization.

4.2 LIMITATIONS

A number of key limitations should be considered when reviewing the results of this report. The first notable limitation involves the individual SDOH data. The data available produced a somewhat small sample size for modeling. Additionally, the response rates for survey questions related to education, income and household size were generally much lower than the rest of the survey questions. The SDOH domains were also limited to the areas in which there was subject matter overlap between the ACHM assessment and PRAPARE. In general, mapping responses across the two different surveys was not straightforward. The selection of patients to complete the individual SDOH screening was not universal and was differentially implemented across the three clinical sites. Within at least one site, sicker patients who potentially had more SDOH needs were targeted for screening. In general, as FQHCs, the three sites represent more socially disadvantaged populations even within the Medicaid population. Potentially, the impact of SDOH need on cost and utilization could have been better differentiated within a broader population, and findings could be significantly different for other groups. For example, as stated earlier, this project found a negative association between food insecurity and inpatient cost and utilization, but other research with a broader patient population has reported the opposite.[51] Individuals also could have underreported their SDOH needs given the sensitive nature of some of the domains. Additional uncertainty in the survey data exists because in some instances it is unclear whether a parent was responding for themselves or for their child.

The second notable limitation involves the limited experience window for the Medicaid enrollment and claims. For the research questions that relied on claims data, the sample size was limited to those who had a full year (July 2018 to June 2019) of Medicaid enrollment and potential claims. Additionally, there were challenges with processing the November 2018 enrollment since the data provided had incomplete enrollment for this month. Because of this, November 2018 enrollment was ignored; thus, if an individual

was enrolled July 2018 to October 2018 and December 2018 to June 2019, they were included in the sample. This assumption could have been inaccurate. The one-year experience window also necessitated a concurrent model for comparing risk scores with outcomes, whereas a prospective model compared to subsequent year costs would have been preferred. A prospective model is also more likely to have lower predictive power; thereby potentially the addition of SDOH data from either data source could have contributed to the model more so than within the already highly predictive concurrent model. This project also used the MARA risk adjuster; other risk score models and methodologies would produce different results in terms of fit and specific model parameters when fitted with SDOH data.

4.3 FUTURE RESEARCH RECOMMENDATIONS

The findings and limitations of this project can provide insights into future research. One potential focus of future work is how to best collect, standardize and share individual SDOH data. This data are being collected more regularly by health care systems, community-based organizations such as food banks, and state and local health and human services programs. As demonstrated in this project, sites utilize different instruments and different strategies for completing those instruments. Future research could help identify best practices and facilitate broader adoption and implementation. Standardized mechanisms to share individual SDOH needs may also obviate the utility of the more readily available but aggregated neighborhood SDOH data sources for the purposes of risk adjustment and stratification.

Related to risk adjustment, future research is recommended to explore a prospective risk adjustment framework with multiple years of claims data and potentially within a broader population. Widening the population would likely result in less availability of individual SDOH data, but neighborhood data would be accessible and may increase the model's predictive power of future costs.

In terms of risk stratification, a potential focus of future work is to investigate the differences in people identified as high-risk through the individual versus neighborhood SDOH data. Risk stratification involves calculating risk and then assigning a cutoff in the score to identify a high-risk group. Small changes in the risk score can be the difference between a person's falling above or below the cutoff. The practical implication of this could be someone's qualifying and being enrolled in a resource-intensive program, such as care management, or not. Future work could help to determine how SDOH data can improve the identification of people who can benefit from intervention.

4.4 CONCLUSIONS

This research contributes to a growing body of evidence about the importance of but difficulty in incorporating SDOH information in population health and payment models. Individual data are difficult to obtain and operationalize but are needed for identification of individual needs. Furthermore, identifying and addressing SDOH needs can play an important role in engaging a person in health care and improving health outcomes. For example, by removing barriers to care including out-of-pocket costs or transportation, a person may have better access to preventive services and avoid more costly emergency department and inpatient hospital utilization. In the absence of individual screening data, neighborhood data carry similar predictive power of cost and utilization and may be a viable option for large-scale efforts. Continued investigation is warranted to extend this work and address the limitations in data availability that have been encountered. As efforts to acknowledge SDOH in both population health and payment models continues to evolve, both individual and neighborhood data sources for SDOH are likely to have a role in identifying resources to meet care needs.

Section 5: Acknowledgments

Ben Schmudlach, Clinica Family Health

Margaret Tomcho, MD, Denver Health

Section 5: List of Participating Companies

Denver Health and Hospital Authority

Milliman

Colorado Community Managed Care Network

Appendix A: Accountable Health Communities Model (AHCM) SDOH Assessment

Health-Related Social Needs (HRSN) Screening Tool

[Clinic name] participates in the Accountable Health Communities (AHC) program funded by the Centers for Medicare and Medicaid Services. This program can help connect you to services in your community that may improve your health. Many of these services are low cost or free of charge. By answering these questions we may be able to provide you with connections to services or programs that may help you. Your information will be kept confidential. The information that you provide will not impact your Medicaid eligibility status. You should answer the questions in your own way. There are no right or wrong answers.

		For Clinic Use Only
Information	1. I am answering this survey about: ☐ Myself ☐ My child ☐ Other (describe your relationship) _____ For the rest of the survey, please think about the person you selected in Question 1 when answering the questions. Please select the option that best describes him or her.	
	2. How many times have you received care in an emergency room (ER) over the last 12 months? *Please do not count urgent care visits.* ☐ 0 times ☐ 1 time ☐ 2 or more times	
Please think about the person you selected in Question 1 (either yourself or another) when answering the questions. Please select the option that best describes him or her.	
Living Situation	3. What is your living situation today? ☐ I have a steady place to live ☐ I have a place to live today, but **I am worried** about losing it in the future ☐ I do not have a steady place to live (I am temporarily staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a care, abandoned building, bus or train station, or in a park). *	☐ Resources
	4. Think about a place you live. Do you have problems with any of the following? *CHOOSE ALL THAT APPLY.* * ☐ Pests such as bugs, ants, or mice ☐ Mold ☐ Lead paint or pipes ☐ Lack of heat ☐ Oven or stove not working ☐ Smoke detectors missing or not working ☐ Water leaks ☐ None of the above	☐ Declined
Food	Some people have made the following statements about their food situation. Please answer whether the statements were OFTEN, SOMETIMES, or NEVER true for <u>you and your household</u> in the last 12 months. 5. Within the past 12 months, you worried that your food would run out before you got money to buy more. ☐ Often true ☐ Sometimes true ☐ Never true	☐ Resources ☐ Declined
	6. Within the past 12 months, the food you bought just didn't last and you didn't have money to get more. ☐ Often true ☐ Sometimes true ☐ Never true	
Transportation	7. In the past 12 months has lack of reliable transportation kept you from medical appointments, meetings, work or from getting to things needed for daily living? ☐ Yes ☐ No	☐ Resources ☐ Declined
Utilities	8. In the past 12 months has the electric, gas, oil or water company threatened to shut off services in your home? ☐ Yes ☐ No ☐ Already shut off	☐ Resources ☐ Declined

Safety	Because violence and abuse happens to a lot of people and affects their health we are asking the following questions. 9. How often does anyone, including family and friends, physically hurt you? ☐ Never ☐ Rarely ☐ Sometimes ☐ Fairly often ☐ Frequently 10. How often does anyone, including family and friends, insult or talk down to you? ☐ Never ☐ Rarely ☐ Sometimes ☐ Fairly often ☐ Frequently 11. How often does anyone, including family and friends, threaten you with harm? ☐ Never ☐ Rarely ☐ Sometimes ☐ Fairly often ☐ Frequently 12. How often does anyone, including family and friends, scream or curse at you? ☐ Never ☐ Rarely ☐ Sometimes ☐ Fairly often ☐ Frequently	☐ Resources ☐ Declined

Background	Please think about the person you selected in the first question (either yourself or another) when answering the following. If you are answering for someone else, please select the option that best describes him or her. 13. **What is your sex?** ☐ Male ☐ Female 14. **Are you Hispanic, Latino/a, or of Spanish origin? CHOOSE ALL THAT APPLY.** ☐ No, not of Hispanic, Latino/a, or Spanish origin ☐ Yes, Mexican, Mexican-American, Chicano ☐ Yes, Puerto Rican ☐ Yes, Cuban ☐ Yes, another Hispanic, Latino, or Spanish origin 15. **Which one or more of the following would you say is your race? CHOOSE ALL THAT APPLY.** ☐ American Indian/Alaska Native ☐ Asian ☐ Black or African American ☐ Native Hawaiian/Other Pacific Islander ☐ White ☐ Other (specify) _____ 16. **What is the highest grade or year of school you completed?** *If you are answering this survey for a child under the age of 18, please answer this question about yourself. If you are answering for someone else who is 18 or older, please select the option that best describes him or her.* ☐ Never attended school or only attended kindergarten ☐ Grades 1 through 8 (Elementary) ☐ Grades 9 through 11 (Some high school) ☐ Grade 12 or GED (High school graduate, diploma, or alternative credential) ☐ College 1 year to 3 years (Some college, Associate's degree, trade, vocational or technical school) ☐ College 4 years or more (College graduate) 17. **How many people do you currently live with? Please count yourself, your spouse or partner, your children, and any other dependents. If you live alone, put 1.** Number of people _____ 18. **What is your annual household income from all sources?** *Please include your income as well as the income for everyone your counted above in your household.* ☐ Less than $10,000 ☐ $10,000 to less than $15,000 ☐ $15,000 to less than $20,000 ☐ $20,000 to less than $25,000 ☐ $25,000 to less than $35,000 ☐ $35,000 to less than $50,000 ☐ $50,000 to less than $75,000 ☐ $75,000 or more

Please provide your contact information
Phone Number:_____ E-Mail:_____

Thank you very much for answering these questions.

Appendix B: Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences (PRAPARE®)

THE KRESGE FOUNDATION   KAISER PERMANENTE.   blue of california foundation

NATIONAL ASSOCIATION OF Community Health Centers   AAPCHO   OPCA Oregon Primary Care Association   Institute for Alternative Futures

PRAPARE
Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences

PRAPARE®: Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences
Paper Version of PRAPARE® for Implementation as of September 2, 2016

Personal Characteristics

1. Are you Hispanic or Latino?

Yes	No	I choose not to answer this question

2. Which race(s) are you? Check all that apply.

Asian	Native Hawaiian
Pacific Islander	Black/African American
White	American Indian/Alaskan Native
Other (please write):	
I choose not to answer this question	

3. At any point in the past 2 years, has season or migrant farm work been your or your family's main source of income?

Yes	No	I choose not to answer this question

4. Have you been discharged from the armed forces of the United States?

Yes	No	I choose not to answer this question

5. What language are you most comfortable speaking?

English
Language other than English (please write)
I choose not to answer this question

Family & Home

6. How many family members, including yourself, do you currently live with? _____

I choose not to answer this question

7. What is your housing situation today?

I have housing
I do not have housing (staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, or in a park)
I choose not to answer this question

8. Are you worried about losing your housing?

Yes	No	I choose not to answer this question

9. What address do you live at?

Street:_____
City, State, Zipcode: _____

Money & Resources

10. What is the highest level of school that you have finished?

Less than high school degree	High school diploma or GED
More than high school	I choose not to answer this question

11. What is your current work situation?

Unemployed	Part-time or temporary work	Full-time work
Otherwise unemployed but not seeking work (ex: student, retired, disabled, unpaid primary care giver) Please write:		
I choose not to answer this question		

12. What is your main insurance?

None/uninsured	Medicaid
CHIP Medicaid	Medicare
Other public insurance (not CHIP)	Other Public Insurance (CHIP)
Private Insurance	

PRAPARE
Protocol for Responding to and Assessing
Patients' Assets, Risks, and Experiences

13. During the past year, what was the total combined income for you and the family members you live with? This information will help us determine if you are eligible for any benefits.

_____

I choose not to answer this question

14. In the past year, have you or any family members you live with been unable to get any of the following when it was really needed? Check all that apply.

Yes	No		Yes	No	
Yes	No	Food	Yes	No	Clothing
Yes	No	Utilities	Yes	No	Child Care
Yes	No	Medicine or Any Health Care (Medical, Dental, Mental Health, Vision)			
Yes	No	Phone	Yes	No	Other (please write):
I choose not to answer this question					

15. Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living? Check all that apply.

Yes, it has kept me from medical appointments or from getting my medications
Yes, it has kept me from non-medical meetings, appointments, work, or from getting things that I need
No
I choose not to answer this question

Social and Emotional Health

16. How often do you see or talk to people that that you care about and feel close to? (For example: talking to friends on the phone, visiting friends or family, going to church or club meetings)

Less than once a week	1 or 2 times a week
3 to 5 times a week	5 or more times a week
I choose not to answer this question	

17. Stress is when someone feels tense, nervous, anxious, or can't sleep at night because their mind is troubled. How stressed are you?

Not at all	A little bit
Somewhat	Quite a bit
Very much	I choose not to answer this question

Optional Additional Questions

18. In the past year, have you spent more than 2 nights in a row in a jail, prison, detention center, or juvenile correctional facility?

Yes	No	I choose not to answer this question

19. Are you a refugee?

Yes	No	I choose not to answer this question

20. Do you feel physically and emotionally safe where you currently live?

Yes	No	Unsure
I choose not to answer this question		

21. In the past year, have you been afraid of your partner or ex-partner?

Yes	No	Unsure
I have not had a partner in the past year		
I choose not to answer this question		

Appendix C: Mapping of AHCM and PRAPARE Survey Data Responses to SDOH Domain Affirmative Response Flags

	AHCM		PRAPARE	
Income	Combine Household Size and Income to create % of FPL (note that this may only be populated for those that overlap with PRAPARE) Continuous Variable		Combine **Household Size** and **Income** to create % of FPL Continuous Variable	
Education	**Education (note that this may only be populated for those that overlap with PRAPARE)** *What is the highest level of school that you have finished?* grade school Middle school middleschool junior high none-8th grade 9th-12th grade		**Education** *What is the highest level of school that you have finished?* grade school grade school 3rd Middle school junior high none-8th grade 9th 9th-12th grade 11 Less than a high school degree	
Housing	**Housing Q1** *What is your living situation today?* HSNG_UNSURE (I have a place to live today, but I am worried about losing it in the future) NO_STDY_HSN (I do not have a steady place to live)		**Housing** *Patient's current housing situation as defined by UDS* I do not have housing	**Housing_Status** *Are you worried about losing your housing?* Y
Food Insecurity	**Food Q1** *Within the past 12 months, you worried that your food would run out before you got money to buy more* OFTEN_TRUE SMTM_TRUE	**Food Q2** *Within the past 12 months, the food you bought just didn't last and you didn't have money to get more* OFTEN_TRUE SMTM_TRUE	**Material Security Food** *In the past year, have you or any family members you live with been unable to get any of the following when it was really needed?* Y	
Safety	**Safety1** *How often does anyone, including family and friends, physically hurt you?* RARELY SOMETIMES FRLY_OFTN FREQUENTLY **Safety3** How often does anyone, including family and friends, threaten you with harm RARELY SOMETIMES FRLY_OFTN FREQUENTLY	**Safety2** *How often does anyone, including family and friends, insult or talk down to you?* RARELY SOMETIMES FRLY_OFTN FREQUENTLY **Safety4** *How often does anyone, including family and friends, scream or curse at you?* RARELY SOMETIMES FRLY_OFTN FREQUENTLY	**Domestic Violence** *In the past year, has the patient been afraid of her/his partner or ex-partner?* Unsure Y	**Safety** *Does the patient feel physically and emotionally safe where s/he currently lives?* Unsure N
Transportation	**Transportation** *In the past 12 months, has lack of reliable transportation kept you from medical appointments, meetings, work or from getting to things needed for daily living?* YES		**Trasport Medical** *Has lack of transportation kept you from medical appointments?* Y	**Transport Other** *Has lack of transportation kept you from non-medical meetings, appointments, work, or from getting things that you need?* Y
Utilities	**Utilities** *In the past 12 months has the electric, gas, oil, or water company threatened to shut off services in your home?* ALRD_SHUT_OFF YES		**Material Security Utilities** *In the past year, have you or any family members you live with been unable to get any of the following when it was really needed?* Y	

Appendix D: Research Question 1: Coefficient Summaries by Model

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Education	Education	Housing	Housing	Food	Food
Explanatory Variables:	Adult	Child	Adult	Child	Adult	Child
Intercept	-10.63	-0.27	-4.20	-3.40	7.42	-7.59
Patient_Age	0.02	0.00	0.01	-0.01	0.00	0.03
GenderM	-0.10	0.00	0.42	0.00	-0.01	-0.07
ADI_STATERNK	0.00	0.01	-0.01	0.00	0.03	0.10
ADI_NATRANK	0.00	0.00	0.00	0.00	0.00	-0.01
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	0.07	0.00	0.00	0.00	0.00	0.23
B14001_Enrolled_in_nursery_school_preschool	5.78	0.00	0.00	0.00	11.04	9.16
B14001_Enrolled_in_kindergarten	5.00	0.00	-3.60	0.00	6.95	11.25
B14001_Enrolled_in_grade_1_to_grade_4	3.76	0.91	0.00	0.00	1.05	7.22
B14001_Enrolled_in_grade_5_to_grade_8	0.00	1.96	0.00	0.00	-2.64	-3.97
B14001_Enrolled_in_grade_9_to_grade_12	1.46	0.00	-2.89	-0.41	-6.12	1.35
B14001_Enrolled_in_college_undergraduate_years	0.00	0.00	0.00	0.00	4.02	-1.96
B14001_Graduate_or_professional_school	0.00	0.00	0.00	0.00	-6.35	18.44
B15003_No_schooling_completed	2.00	0.00	-53.09	0.00	1.62	-8.20
B15003_Nursery_school	0.00	0.00	0.00	55.26	110.59	-152.33
B15003_Kindergarten	0.00	0.00	0.00	0.00	55.18	41.07
B15003_1st_grade	0.00	13.78	0.00	-2.86	0.00	42.08
B15003_2nd_grade	0.00	5.89	0.00	0.00	14.38	17.38
B15003_3rd_grade	0.00	0.00	0.00	0.00	6.10	-0.32
B15003_4th_grade	0.00	0.00	-9.24	-4.16	0.00	9.19
B15003_5th_grade	1.99	0.00	9.90	0.00	1.55	-6.81
B15003_6th_grade	0.00	0.00	1.45	0.00	6.58	0.21
B15003_7th_grade	0.00	0.00	-1.86	6.53	-16.60	-8.22
B15003_8th_grade	0.00	0.00	2.23	0.00	8.45	-0.67
B15003_9th_grade	0.00	0.00	0.00	0.00	0.69	5.03
B15003_10th_grade	4.45	0.00	0.00	-1.08	2.10	1.99
B15003_11th_grade	0.00	0.00	0.00	0.00	0.00	2.95
B15003_12th_grade_no_diploma	0.00	0.00	0.00	0.00	-2.50	-12.31
B15003_Regular_high_school_diploma	0.11	0.00	0.00	0.00	-1.39	-2.21
B15003_GED_or_alternative_credential	-0.20	0.00	0.00	-0.95	0.25	3.77
B15003_Some_college_less_than_1_year	0.00	0.00	0.00	3.19	2.31	-0.20
B15003_Some_college_1_or_more_years_no_degree	0.00	0.00	1.10	0.00	-0.67	4.51
B15003_Associates_degree	0.00	0.00	-1.21	0.00	0.00	-2.61
B15003_Bachelors_degree	0.00	0.00	0.00	0.00	0.00	0.00
B15003_Masters_degree	0.00	0.00	0.00	0.00	0.00	4.54
B15003_Professional_school_degree	0.00	0.00	0.00	0.00	-3.14	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Food	Food	Housing	Housing	Education	Education
Explanatory Variables:	Child	Adult	Child	Adult	Child	Adult
B15003_Doctorate_degree	-6.83	-8.85	0.00	0.00	0.00	0.00
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	0.00	0.00	0.00	0.00	0.00
B23025_In_Civilian_labor_force_Employed	-0.16	0.62	0.06	0.00	0.00	0.00
B23025_In_Civilian_labor_force_Unemployed	4.14	-0.12	0.00	0.00	3.11	2.76
B23025_In_labor_force_Armed_Forces	-3.75	5.46	0.00	-6.60	0.00	9.56
B23025_Not_in_labor_force	0.00	-0.31	-0.53	0.00	0.00	-0.19
B25002_Vacant	5.49	0.00	0.00	0.00	0.00	0.00
B25014_Total_Owner_occupied	0.00	0.00	0.00	0.00	0.00	0.00
B25014_Owner_occupied_-_050_or_less_occupants_per_room	-0.30	-0.27	0.00	0.00	0.00	-0.21
B25014_Owner_occupied_-_051_to_100_occupants_per_room	1.31	-0.05	0.00	-0.44	0.00	0.00
B25014_Owner_occupied_-_101_to_150_occupants_per_room	-2.28	3.18	0.00	0.00	0.00	0.00
B25014_Owner_occupied_-_151_to_200_occupants_per_room	-6.06	-3.36	0.00	1.64	0.00	0.31
B25014_Owner_occupied_-_201_or_more_occupants_per_room	-11.75	-10.15	0.00	0.00	0.00	-3.42
B25014_Renter_occupied_-_050_or_less_occupants_per_room	-0.16	0.00	0.00	0.00	-0.70	-0.11
B25014_Renter_occupied_-_051_to_100_occupants_per_room	0.00	0.26	0.00	0.00	0.17	0.00
B25014_Renter_occupied_-_101_to_150_occupants_per_room	0.24	1.51	0.00	0.00	0.00	1.11
B25014_Renter_occupied_-_151_to_200_occupants_per_room	3.09	-0.91	2.98	0.00	0.00	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	-7.88	-4.91	0.00	0.00	0.00	0.00
B25040_Utility_gas	0.68	0.31	0.00	0.00	0.00	-0.06
B25040_Bottled_tank_or_LP_gas	-3.02	-1.47	0.00	0.00	0.00	0.00
B25040_Electricity	-0.57	-0.18	0.00	0.00	0.00	0.01
B25040_Fuel_oil_kerosene_etc	40.92	-18.87	0.00	-22.38	0.00	0.00
B25040_Coal_or_coke	-17.28	38.89	0.00	-36.64	0.00	0.00
B25040_Wood	1.94	3.33	0.00	0.33	0.00	0.00
B25040_Solar_energy	11.16	0.67	-2.72	0.00	0.00	3.34
B25040_Other_fuel	-4.32	3.10	0.00	3.21	0.00	0.00
B25040_No_fuel_used	8.81	-0.86	0.00	0.00	0.00	0.00
B25048_Complete_plumbing_facilities	2.04	-2.69	0.00	0.00	0.00	6.75
B25052_Complete_kitchen_facilities	0.54	-6.95	0.00	1.24	0.00	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	2.42	7.60	-8.27	-5.25	0.84	0.95
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	0.00	0.00	0.00	0.00	0.00	0.00
B28003_Has_a_computer_-_Without_an_Internet_subscription	2.86	1.80	0.00	0.00	0.00	0.00
B28003_No_computer	0.00	-1.24	0.00	0.03	0.00	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	14.50	-10.11	0.00	0.83	0.00	0.00
C24050_Construction	-2.23	0.84	0.00	0.00	0.00	0.00
C24050_Manufacturing	0.71	-2.14	0.00	3.50	0.00	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Education	Education	Housing	Housing	Food	Food
Explanatory Variables:	Adult	Child	Adult	Child	Adult	Child
C24050_Wholesale_trade	0.00	0.00	0.00	0.00	-0.86	2.88
C24050_Retail_trade	0.00	0.00	0.00	0.00	-1.81	-0.56
C24050_Transportation_and_warehousing_and_utilities	0.92	0.00	-0.43	-2.19	4.24	-4.52
C24050_Information	0.00	0.00	0.00	0.00	-0.51	-6.56
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	0.00	0.00	0.00	-1.24	0.00	-7.28
C24050_Professional_scientific_and_management_and_administrative_and_waste	0.00	0.00	0.29	0.00	1.69	0.90
C24050_Educational_services_and_health_care_and_social_assistance	0.00	0.00	0.54	1.46	0.65	-1.79
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	0.00	0.00	-2.37	0.03	-0.35	-0.01
C24050_Other_services_except_public_administration	0.00	0.00	0.00	0.00	0.00	0.68
B07204_Same_house_1_year_ago	0.00	0.00	1.35	0.00	0.00	0.45
B07204_Different_house_in_United_States_1_year_ago	0.00	0.00	-10.34	0.00	0.00	0.00
B07204_Abroad_1_year_ago	0.00	0.00	0.00	0.00	0.00	-7.69
B22001_Household_received_Food_Stamps SNAP_in_the_past_12_months	0.90	0.36	0.00	0.00	0.00	0.29
B25017_1_room	0.00	0.00	1.62	5.03	0.78	-3.11
B25017_2_rooms	0.00	0.00	2.18	0.23	3.68	3.67
B25017_3_rooms	0.00	0.00	0.00	0.00	0.00	2.05
B25017_4_rooms	0.00	0.00	0.00	0.00	-0.56	0.67
B25017_5_rooms	0.00	0.00	0.00	0.00	-3.33	0.22
B25017_6_rooms	0.00	0.00	0.00	0.00	1.52	-0.81
B25017_7_rooms	0.00	0.00	0.00	0.00	2.11	-1.39
B25017_8_rooms	-0.26	0.00	-0.13	0.00	-0.35	-1.57
B25017_9_or_more_rooms	0.00	0.00	0.00	0.00	0.00	-1.08
B25043_With_telephone_service_available	1.46	0.00	0.00	0.00	-0.45	1.35
B25024_1_detached	0.00	0.00	0.00	0.00	0.00	0.00
B25024_1_attached	-0.26	0.00	0.00	0.00	-0.18	1.76
B25024_2	0.00	0.00	1.18	0.00	-5.01	4.14
B25024_3_or_4	0.00	0.00	0.68	0.00	0.00	-3.38
B25024_5_to_9	-0.78	0.00	0.19	-0.09	1.49	-1.21
B25024_10_to_19	0.00	0.00	0.00	0.00	-1.51	1.12
B25024_20_to_49	0.04	0.00	-1.24	0.00	0.00	-1.75
B25024_50_or_more	0.00	0.00	0.31	0.00	0.20	1.90
B25024_Mobile_home	0.00	0.00	0.00	0.00	2.06	-4.26
B25024_Boat_RV_van_etc	0.00	0.00	0.00	0.66	0.00	0.58
B25075_Less_than_10000	0.00	0.00	0.00	0.00	-4.92	0.00
B25075_10000_to_14999	1.38	0.00	0.00	0.00	-0.42	3.45
B25075_15000_to_19999	0.00	0.00	1.99	0.00	2.27	11.60

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Education Adult	Education Child	Housing Adult	Housing Child	Food Adult	Food Child
Explanatory Variables:						
B25075_20000_to_24999	0.00	0.00	0.58	0.00	4.63	6.65
B25075_25000_to_29999	0.34	0.00	0.00	0.00	-9.13	8.19
B25075_30000_to_34999	0.00	0.00	0.00	0.00	-1.98	-10.26
B25075_35000_to_39999	0.00	0.00	0.00	0.00	9.76	10.29
B25075_40000_to_49999	0.70	0.00	0.00	0.00	6.53	-7.70
B25075_50000_to_59999	0.00	0.00	0.00	0.00	0.82	-3.89
B25075_60000_to_69999	0.00	0.00	0.00	0.00	-3.18	4.45
B25075_70000_to_79999	0.00	0.00	-0.19	-1.87	0.24	0.47
B25075_80000_to_89999	0.00	0.00	-0.86	0.00	0.00	2.21
B25075_90000_to_99999	0.00	0.00	0.00	0.00	-4.59	-7.94
B25075_100000_to_124999	0.00	0.00	-0.18	0.00	0.64	-3.84
B25075_125000_to_149999	0.00	0.00	-0.26	0.00	-1.82	1.01
B25075_150000_to_174999	0.00	0.00	-0.46	0.00	0.91	-0.30
B25075_175000_to_199999	0.00	0.00	0.00	0.00	-1.12	0.00
B25075_200000_to_249999	0.00	0.00	0.00	0.00	0.00	-1.14
B25075_250000_to_299999	0.00	0.00	0.00	0.00	-1.89	-0.53
B25075_300000_to_399999	0.00	-1.17	0.00	0.00	0.20	0.32
B25075_400000_to_499999	-0.67	0.00	0.22	0.81	0.00	-0.88
B25075_500000_to_749999	0.00	0.00	0.00	0.00	0.00	1.22
B25075_750000_to_999999	0.00	0.00	0.00	-2.35	-1.68	1.17
B25075_1000000_to_1499999	-1.65	0.00	0.00	0.00	3.17	-10.04
B25075_1500000_to_1999999	0.00	0.00	0.00	0.00	-0.01	21.14
B25075_2000000_or_more	-1.25	0.00	0.00	-2.95	2.09	9.65
B25038_Owner_occupied_Moved_in_2015_or_later	0.00	0.00	-2.19	0.00	2.14	1.38
B25038_Owner_occupied_Moved_in_2010_to_2014	0.00	0.00	-0.02	0.00	-0.33	1.09
B25038_Owner_occupied_Moved_in_2000_to_2009	0.00	0.00	0.00	0.00	-0.90	2.80
B25038_Owner_occupied_Moved_in_1990_to_1999	0.00	0.00	0.00	0.00	0.00	-1.84
B25038_Owner_occupied_Moved_in_1980_to_1989	0.00	0.00	0.00	0.00	2.87	3.39
B25038_Owner_occupied_Moved_in_1979_or_earlier	0.00	0.00	0.00	0.00	-0.82	-1.86
B25038_Renter_occupied_Moved_in_2015_or_later	0.00	0.00	0.00	0.07	0.00	-1.33
B25038_Renter_occupied_Moved_in_2010_to_2014	0.18	0.00	0.00	0.00	1.00	0.00
B25038_Renter_occupied_Moved_in_2000_to_2009	0.00	0.00	0.00	0.00	-5.21	-2.79
B25038_Renter_occupied_Moved_in_1990_to_1999	0.00	0.00	0.00	0.00	7.32	0.00
B25038_Renter_occupied_Moved_in_1980_to_1989	0.00	0.00	0.00	0.00	-8.72	0.36
B25038_Renter_occupied_Moved_in_1979_or_earlier	0.00	0.00	0.00	0.00	14.82	27.22
B25034_Built_2014_or_later	0.00	0.00	0.00	0.00	0.00	-3.37

Model Type:

Response Variable:

Explanatory Variables:

	Logistic Elastic Net Regression Education Adult	Logistic Elastic Net Regression Education Child	Logistic Elastic Net Regression Housing Adult	Logistic Elastic Net Regression Housing Child	Logistic Elastic Net Regression Food Adult	Logistic Elastic Net Regression Food Child
B25034_Built_2010_to_2013	0.00	0.00	0.00	1.20	-1.16	0.82
B25034_Built_2000_to_2009	0.00	0.00	-0.06	0.31	0.00	-0.08
B25034_Built_1990_to_1999	-0.01	0.00	0.00	0.00	-0.19	0.08
B25034_Built_1980_to_1989	0.00	0.00	0.00	0.00	0.10	0.00
B25034_Built_1970_to_1979	0.00	0.00	0.11	0.00	0.10	0.00
B25034_Built_1960_to_1969	0.00	0.00	0.00	0.00	0.00	0.85
B25034_Built_1950_to_1959	0.00	0.00	0.00	0.00	-0.26	1.35
B25034_Built_1940_to_1949	-0.44	0.00	0.00	0.00	0.31	-1.66
B25034_Built_1939_or_earlier	0.00	0.00	0.41	0.00	1.04	-2.38

Model Type: Logistic Elastic Net Regression

Explanatory Variables:	Logistic Elastic Net Regression Utilities Adult	Logistic Elastic Net Regression Transportation Child	Logistic Elastic Net Regression Transportation Adult	Logistic Elastic Net Regression Safety Child	Logistic Elastic Net Regression Safety Adult
Intercept	-3.34	-46.85	-2.69	26.21	-10.70
Patient_Age	0.00	-0.03	0.00	0.06	-0.01
GenderM	0.00	0.05	0.00	0.11	-0.24
ADI_STATERNK	0.00	-0.10	0.00	0.11	0.00
ADI_NATRANK	0.00	0.02	0.00	0.00	0.00
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	0.00	-0.18	0.00	0.57	0.00
B14001_Enrolled_in_nursery_school_preschool	0.00	-10.56	0.00	-12.27	0.00
B14001_Enrolled_in_kindergarten	0.00	3.04	0.00	-9.82	0.00
B14001_Enrolled_in_grade_1_to_grade_4	0.00	-1.59	0.00	6.83	0.00
B14001_Enrolled_in_grade_5_to_grade_8	0.00	-12.71	0.00	-5.52	0.00
B14001_Enrolled_in_grade_9_to_grade_12	0.00	11.75	0.00	-4.20	0.00
B14001_Enrolled_in_college_undergraduate_years	0.00	-0.05	0.00	-3.23	0.00
B14001_Graduate_or_professional_school	0.00	17.07	0.00	19.59	-2.99
B15003_No_schooling_completed	0.57	-0.15	0.00	6.51	0.00
B15003_Nursery_school	0.00	91.21	0.00	-655.65	0.00
B15003_Kindergarten	0.00	-111.80	8.58	27.83	28.21
B15003_1st_grade	0.00	44.95	0.00	41.28	0.00
B15003_2nd_grade	0.00	-50.11	0.00	15.49	-10.49
B15003_3rd_grade	0.00	-45.03	0.00	-10.27	4.80
B15003_4th_grade	0.00	-4.18	0.00	-27.07	-5.19
B15003_5th_grade	0.00	30.82	0.00	22.75	0.00
B15003_6th_grade	0.00	2.34	0.00	-7.59	0.31
B15003_7th_grade	0.00	-16.22	0.00	-3.04	0.00
B15003_8th_grade	0.00	-1.80	0.00	-16.84	0.00
B15003_9th_grade	0.00	0.00	0.00	-10.11	1.00
B15003_10th_grade	0.71	-2.15	0.00	1.31	0.00
B15003_11th_grade	0.00	-12.62	0.00	-3.61	0.00
B15003_12th_grade_no_diploma	0.00	-10.54	0.00	-1.88	-0.48
B15003_Regular_high_school_diploma	0.00	-9.55	0.00	1.17	0.00
B15003_GED_or_alternative_credential	1.94	0.71	0.00	11.93	0.00
B15003_Some_college_less_than_1_year	0.00	-7.16	0.00	-1.51	-0.46
B15003_Some_college_1_or_more_years_no_degree	0.00	2.64	0.00	-0.71	0.00
B15003_Associates_degree	0.00	1.11	0.00	-4.01	0.00
B15003_Bachelors_degree	0.00	1.65	0.00	0.27	0.00
B15003_Masters_degree	0.00	-4.82	0.00	5.59	0.00
B15003_Professional_school_degree	0.00	-20.27	0.00	-3.48	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Safety	Safety	Transportation	Transportation	Utilities
Explanatory Variables:	Adult	Child	Adult	Child	Adult
B15003_Doctorate_degree	0.00	3.49	0.00	-30.26	0.00
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	0.00	0.00	0.00	0.00
B23025_In_Civilian_labor_force_Employed	0.00	-0.84	0.00	-4.00	0.00
B23025_In_Civilian_labor_force_Unemployed	0.00	-1.37	0.00	0.39	0.00
B23025_In_labor_force_Armed_Forces	0.00	-58.16	0.00	-24.13	0.00
B23025_Not_in_labor_force	0.00	0.07	0.00	0.80	0.00
B25002_Vacant	0.00	2.10	0.00	-1.88	0.00
B25014_Total_Owner_occupied	0.00	-0.40	0.00	-0.23	0.00
B25014_Owner_occupied_-_050_or_less_occupants_per_room	0.00	0.58	0.00	2.77	0.00
B25014_Owner_occupied_-_051_to_100_occupants_per_room	0.00	-0.86	0.00	3.15	0.00
B25014_Owner_occupied_-_101_to_150_occupants_per_room	0.00	5.87	0.00	2.58	0.72
B25014_Owner_occupied_-_151_to_200_occupants_per_room	0.00	-4.07	0.00	8.21	0.00
B25014_Owner_occupied_-_201_or_more_occupants_per_room	0.00	-39.40	0.00	-18.89	0.00
B25014_Renter_occupied_-_050_or_less_occupants_per_room	0.00	-0.26	0.00	-0.04	-0.01
B25014_Renter_occupied_-_051_to_100_occupants_per_room	0.00	0.27	0.00	3.69	0.03
B25014_Renter_occupied_-_101_to_150_occupants_per_room	0.00	-1.79	0.00	-2.18	0.00
B25014_Renter_occupied_-_151_to_200_occupants_per_room	0.00	12.53	0.00	2.60	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	8.46	1.31	0.00	-7.54	0.00
B25040_Utility_gas	0.00	2.76	0.00	-0.52	0.00
B25040_Bottled_tank_or_LP_gas	-1.26	-3.19	0.00	-16.93	0.00
B25040_Electricity	0.00	-0.95	0.00	0.34	0.00
B25040_Fuel_oil_kerosene_etc	-6.88	21.65	0.00	74.06	0.00
B25040_Coal_or_coke	0.00	104.62	0.00	112.76	0.00
B25040_Wood	0.00	-32.85	0.00	-22.41	0.00
B25040_Solar_energy	2.52	81.40	0.00	28.76	0.00
B25040_Other_fuel	2.30	-23.00	0.00	-25.38	0.00
B25040_No_fuel_used	-10.49	-34.34	0.00	59.27	0.00
B25048_Complete_plumbing_facilities	0.00	-40.80	0.00	64.97	0.00
B25052_Complete_kitchen_facilities	0.00	7.11	0.00	-2.69	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	-6.22	-0.40	0.00	-17.02	0.00
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	0.00	-4.87	0.00	-0.85	0.00
B28003_Has_a_computer_-_Without_an_Internet_subscription	0.00	4.12	0.00	0.64	0.59
B28003_No_computer	0.00	0.86	0.00	2.84	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	3.38	-9.95	0.00	15.87	0.00
C24050_Construction	0.00	-0.71	0.00	6.23	0.00
C24050_Manufacturing	0.00	-0.82	0.00	-0.99	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Safety	Safety	Transportation	Transportation	Utilities
Explanatory Variables:	Adult	Child	Adult	Child	Adult
C24050_Wholesale_trade	0.00	15.97	0.00	-13.42	0.00
C24050_Retail_trade	0.00	8.63	0.00	-0.79	0.00
C24050_Transportation_and_warehousing_and_utilities	0.00	-12.79	0.00	0.14	0.00
C24050_Information	0.00	-1.13	0.00	-12.54	0.00
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	0.00	11.04	0.00	10.04	-1.19
C24050_Professional_scientific_and_management_and_administrative_and_waste	0.00	-2.47	0.00	-6.03	0.00
C24050_Educational_services_and_health_care_and_social_assistance	0.00	3.59	0.00	0.56	0.00
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	0.00	8.08	0.00	3.45	0.00
C24050_Other_services_except_public_administration	0.33	8.48	0.00	5.01	0.00
B07204_Same_house_1_year_ago	0.00	5.91	0.00	-0.58	0.00
B07204_Different_house_in_United_States_1_year_ago	0.00	-2.68	0.00	0.14	0.00
B07204_Abroad_1_year_ago	-4.33	-1.66	0.00	-13.77	0.00
B22001_Household_received_Food_Stamps SNAP_in_the_past_12_months	0.00	-0.83	0.00	-4.86	0.00
B25017_1_room	0.00	4.60	0.00	16.93	0.00
B25017_2_rooms	0.00	10.63	0.00	0.54	0.00
B25017_3_rooms	0.00	-9.56	0.14	-2.17	0.01
B25017_4_rooms	0.00	0.05	0.00	1.22	0.00
B25017_5_rooms	0.00	-1.77	0.00	-6.77	0.00
B25017_6_rooms	0.00	5.51	0.00	0.20	0.00
B25017_7_rooms	-1.92	-4.63	0.00	-2.12	0.00
B25017_8_rooms	-0.25	-6.17	0.00	5.90	0.00
B25017_9_or_more_rooms	8.29	6.67	0.00	0.08	-0.18
B25043_With_telephone_service_available	0.00	-0.86	0.00	-13.39	0.00
B25024_1_detached	0.00	-0.42	0.00	0.00	-0.01
B25024_1_attached	0.00	-0.25	0.00	1.62	0.00
B25024_2	0.00	4.58	0.00	18.99	0.00
B25024_3_or_4	0.00	1.78	0.00	0.89	0.00
B25024_5_to_9	0.43	-5.11	0.00	2.16	0.00
B25024_10_to_19	0.00	0.08	0.00	-0.84	0.00
B25024_20_to_49	0.29	-0.76	0.00	-6.67	0.11
B25024_50_or_more	0.97	3.46	0.00	0.00	0.00
B25024_Mobile_home	0.00	0.20	0.00	3.46	0.00
B25024_Boat_RV_van_etc	0.00	-11.18	0.00	14.22	0.00
B25075_Less_than_10000	0.00	-3.81	0.00	12.48	0.00
B25075_10000_to_14999	0.00	6.28	0.00	-18.68	0.00
B25075_15000_to_19999	0.11	15.51	0.00	14.83	1.55

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Safety	Safety	Transportation	Transportation	Utilities
Explanatory Variables:	Adult	Child	Adult	Child	Adult
B25075_20000_to_24999	0.00	11.29	0.00	-18.92	0.00
B25075_25000_to_29999	0.00	-26.69	0.00	-9.95	0.00
B25075_30000_to_34999	0.00	-47.61	0.00	-20.23	0.00
B25075_35000_to_39999	0.00	26.11	0.00	-8.94	0.00
B25075_40000_to_49999	0.00	10.24	0.00	-39.98	0.26
B25075_50000_to_59999	0.00	0.17	0.00	3.32	0.00
B25075_60000_to_69999	0.00	-15.35	0.00	-5.65	0.00
B25075_70000_to_79999	0.00	0.47	0.00	10.27	1.56
B25075_80000_to_89999	0.00	-0.69	0.00	-5.95	0.00
B25075_90000_to_99999	0.00	8.54	0.00	-4.26	0.00
B25075_100000_to_124999	0.66	-0.82	0.00	-2.57	0.00
B25075_125000_to_149999	0.00	1.54	0.00	3.34	0.00
B25075_150000_to_174999	0.00	2.52	0.00	-6.92	0.00
B25075_175000_to_199999	0.00	3.36	0.00	3.97	0.00
B25075_200000_to_249999	0.00	-1.47	0.00	-6.76	0.00
B25075_250000_to_299999	-0.97	3.89	0.00	-0.80	-0.09
B25075_300000_to_399999	0.00	0.23	0.00	-0.60	0.00
B25075_400000_to_499999	0.00	-1.57	0.00	-6.23	0.00
B25075_500000_to_749999	0.00	-1.55	0.00	3.18	0.00
B25075_750000_to_999999	0.00	-0.42	0.00	-1.04	0.00
B25075_1000000_to_1499999	0.00	-25.25	0.00	-11.05	0.00
B25075_1500000_to_1999999	0.00	14.29	0.00	-54.98	0.00
B25075_2000000_or_more	0.00	-3.36	0.00	17.55	0.00
B25038_Owner_occupied_Moved_in_2015_or_later	2.78	13.98	0.00	9.36	0.00
B25038_Owner_occupied_Moved_in_2010_to_2014	0.00	-1.15	0.00	-3.25	-0.09
B25038_Owner_occupied_Moved_in_2000_to_2009	0.00	-2.37	0.00	0.47	0.00
B25038_Owner_occupied_Moved_in_1990_to_1999	0.00	-3.36	0.00	0.00	0.00
B25038_Owner_occupied_Moved_in_1980_to_1989	-0.26	-8.20	0.00	-4.41	0.00
B25038_Owner_occupied_Moved_in_1979_or_earlier	0.00	-12.85	0.00	-3.46	0.00
B25038_Renter_occupied_Moved_in_2015_or_later	0.00	3.01	0.27	2.73	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	0.00	-1.25	0.00	0.26	0.00
B25038_Renter_occupied_Moved_in_2000_to_2009	0.00	-1.13	0.00	-2.83	0.00
B25038_Renter_occupied_Moved_in_1990_to_1999	0.00	-0.96	0.00	6.67	0.00
B25038_Renter_occupied_Moved_in_1980_to_1989	17.83	5.81	0.00	16.58	0.00
B25038_Renter_occupied_Moved_in_1979_or_earlier	0.00	35.13	0.00	0.80	10.06
B25034_Built_2014_or_later	1.81	-0.75	0.00	-18.25	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Safety	Safety	Transportation	Transportation	Utilities
Explanatory Variables:	Adult	Child	Adult	Child	Adult
B25034_Built_2010_to_2013	0.12	3.68	0.00	8.88	0.00
B25034_Built_2000_to_2009	0.00	-3.11	0.00	-1.80	0.00
B25034_Built_1990_to_1999	0.00	2.51	0.00	-2.89	0.00
B25034_Built_1980_to_1989	-0.58	-1.62	0.00	0.14	0.00
B25034_Built_1970_to_1979	0.00	1.29	0.00	0.39	0.00
B25034_Built_1960_to_1969	0.00	1.10	0.00	-1.10	0.00
B25034_Built_1950_to_1959	0.00	0.01	0.00	2.39	0.00
B25034_Built_1940_to_1949	0.00	-5.61	0.00	-8.69	0.00
B25034_Built_1939_or_earlier	0.00	1.84	0.00	-0.42	0.00

Explanatory Variables:	Logistic Elastic Net Regression / Utilities / Child	Logistic Elastic Net Regression / Non-Zero Income / Adult	Elastic Net Regession / Income Severity / Adult	Logistic Elastic Net Regression / Non-Zero Income / Child
Model Type:				
Response Variable:				
Intercept	33.88	0.08	0.23	15.65
Patient_Age	0.03	0.00	0.00	0.00
GenderM	0.10	-0.22	-0.03	0.25
ADI_STATERNK	-0.02	0.00	0.00	0.00
ADI_NATRANK	0.00	0.00	0.00	0.00
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	0.13	0.00	-0.07	0.20
B14001_Enrolled_in_nursery_school_preschool	20.06	0.00	0.00	0.00
B14001_Enrolled_in_kindergarten	6.70	0.00	0.00	-0.05
B14001_Enrolled_in_grade_1_to_grade_4	-17.91	0.00	0.00	0.00
B14001_Enrolled_in_grade_5_to_grade_8	-13.69	0.00	0.00	-9.47
B14001_Enrolled_in_grade_9_to_grade_12	-2.91	0.00	1.53	0.00
B14001_Enrolled_in_college_undergraduate_years	-10.87	0.00	0.00	0.00
B14001_Graduate_or_professional_school	20.09	0.00	0.00	1.55
B15003_No_schooling_completed	10.30	0.00	1.97	-3.19
B15003_Nursery_school	-490.69	0.00	0.00	-53.29
B15003_Kindergarten	0.00	0.00	-30.36	-125.91
B15003_1st_grade	-23.63	0.00	0.00	0.00
B15003_2nd_grade	19.42	0.00	5.35	13.24
B15003_3rd_grade	-11.03	0.00	0.00	18.08
B15003_4th_grade	0.00	0.00	0.00	0.00
B15003_5th_grade	7.90	0.00	0.00	-10.26
B15003_6th_grade	10.82	0.00	0.00	0.00
B15003_7th_grade	0.00	0.00	0.00	0.00
B15003_8th_grade	5.53	0.00	0.00	0.00
B15003_9th_grade	-2.46	0.00	-0.27	0.00
B15003_10th_grade	0.51	0.00	1.10	-7.10
B15003_11th_grade	7.93	0.00	0.00	-3.79
B15003_12th_grade_no_diploma	-14.74	0.00	3.01	0.00
B15003_Regular_high_school_diploma	-1.58	0.00	-0.04	0.00
B15003_GED_or_alternative_credential	-2.64	0.00	-0.54	6.66
B15003_Some_college_less_than_1_year	-4.23	0.00	0.00	0.00
B15003_Some_college_1_or_more_years_no_degree	3.83	0.00	-0.01	0.00
B15003_Associates_degree	0.00	3.24	-0.68	0.00
B15003_Bachelors_degree	0.00	0.00	0.00	0.00
B15003_Masters_degree	-4.01	0.00	0.09	0.00
B15003_Professional_school_degree	1.29	0.00	0.00	-19.26

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Utilities	Non-Zero Income	Income Severity	Non-Zero Income
Explanatory Variables:	Child	Adult	Adult	Child
B15003_Doctorate_degree	-15.31	0.00	2.86	11.92
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	0.00	0.00	0.00
B23025_In_Civilian_labor_force_Employed	5.60	0.00	0.04	2.72
B23025_In_Civilian_labor_force_Unemployed	-2.08	0.00	0.00	-1.96
B23025_In_labor_force_Armed_Forces	-24.74	0.00	0.00	0.00
B23025_Not_in_labor_force	-0.01	0.00	0.00	0.00
B25002_Vacant	6.83	0.00	0.00	0.00
B25014_Total_Owner_occupied	0.00	0.00	0.00	0.00
B25014_Owner_occupied_-_050_or_less_occupants_per_room	-0.47	0.00	0.09	0.00
B25014_Owner_occupied_-_051_to_100_occupants_per_room	-1.34	0.00	0.00	0.00
B25014_Owner_occupied_-_101_to_150_occupants_per_room	-9.54	0.00	0.19	0.00
B25014_Owner_occupied_-_151_to_200_occupants_per_room	-9.47	0.00	0.00	0.00
B25014_Owner_occupied_-_201_or_more_occupants_per_room	-46.88	-0.43	0.00	-5.43
B25014_Renter_occupied_-_050_or_less_occupants_per_room	0.00	0.00	0.00	0.00
B25014_Renter_occupied_-_051_to_100_occupants_per_room	1.36	0.00	0.00	0.00
B25014_Renter_occupied_-_101_to_150_occupants_per_room	-1.57	-0.11	0.00	-3.08
B25014_Renter_occupied_-_151_to_200_occupants_per_room	-7.96	0.00	-0.95	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	3.14	0.00	-0.14	0.00
B25040_Utility_gas	0.36	0.00	0.00	0.00
B25040_Bottled_tank_or_LP_gas	-17.97	0.00	0.00	0.00
B25040_Electricity	-0.43	0.00	-0.28	0.00
B25040_Fuel_oil_kerosene_etc	132.38	0.00	0.00	-16.65
B25040_Coal_or_coke	-76.80	0.00	0.00	-30.93
B25040_Wood	10.37	0.00	0.22	-14.91
B25040_Solar_energy	-16.54	0.00	0.48	-27.96
B25040_Other_fuel	-0.02	0.00	0.00	-26.23
B25040_No_fuel_used	5.50	0.00	-1.44	0.00
B25048_Complete_plumbing_facilities	-43.90	0.00	0.45	0.00
B25052_Complete_kitchen_facilities	-8.99	0.00	-0.98	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	-3.40	0.00	0.00	-3.22
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	-1.79	0.00	0.00	0.00
B28003_Has_a_computer_-_Without_an_Internet_subscription	0.00	0.00	0.00	0.00
B28003_No_computer	4.00	0.00	0.00	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	1.14	0.00	0.25	-3.55
C24050_Construction	0.00	0.00	0.00	7.19
C24050_Manufacturing	-0.16	0.00	1.51	-4.57

Explanatory Variables:	Logistic Elastic Net Regression / Utilities / Child	Logistic Elastic Net Regression / Non-Zero Income / Adult	Elastic Net Regression / Income Severity / Adult	Logistic Elastic Net Regression / Non-Zero Income / Child
C24050_Wholesale_trade	6.15	0.00	0.00	0.00
C24050_Retail_trade	-0.58	0.00	0.00	0.00
C24050_Transportation_and_warehousing_and_utilities	-3.49	0.00	0.00	0.00
C24050_Information	0.00	0.00	0.00	0.00
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	-6.32	0.00	-1.47	0.00
C24050_Professional_scientific_and_management_and_administrative_and_waste	-7.07	0.00	0.33	0.00
C24050_Educational_services_and_health_care_and_social_assistance	0.57	0.55	0.00	-0.50
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	0.00	0.00	0.00	-0.93
C24050_Other_services_except_public_administration	-4.26	0.00	-0.37	4.00
B07204_Same_house_1_year_ago	-1.76	0.00	0.00	0.00
B07204_Different_house_in_United_States_1_year_ago	0.00	0.00	0.00	-0.63
B07204_Abroad_1_year_ago	17.79	0.00	0.00	29.06
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	1.03	-0.11	0.00	0.00
B25017_1_room	-19.31	0.00	0.00	3.15
B25017_2_rooms	6.13	0.00	0.15	0.41
B25017_3_rooms	0.00	0.00	0.00	-2.21
B25017_4_rooms	-0.31	0.00	0.00	0.00
B25017_5_rooms	-1.03	0.00	0.00	0.00
B25017_6_rooms	0.00	0.00	0.00	0.72
B25017_7_rooms	1.22	0.00	0.00	0.00
B25017_8_rooms	3.57	0.00	0.11	0.00
B25017_9_or_more_rooms	0.00	0.00	-0.14	0.00
B25043_With_telephone_service_available	18.56	0.00	1.03	-15.34
B25024_1_detached	0.00	0.00	0.00	0.00
B25024_1_attached	-0.93	0.00	0.00	-2.09
B25024_2	12.65	0.00	0.00	3.84
B25024_3_or_4	-8.42	0.00	0.22	0.00
B25024_5_to_9	3.12	0.00	0.00	0.00
B25024_10_to_19	-3.50	0.00	0.00	0.00
B25024_20_to_49	-0.99	0.00	0.00	-0.03
B25024_50_or_more	1.26	0.00	0.00	0.00
B25024_Mobile_home	0.16	0.00	0.00	0.00
B25024_Boat_RV_van_etc	13.60	0.00	0.00	0.00
B25075_Less_than_10000	3.95	0.00	0.00	0.00
B25075_10000_to_14999	-3.65	0.53	-0.31	-5.41
B25075_15000_to_19999	2.19	0.00	0.42	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Utilities	Non-Zero Income	Income Severity	Non-Zero Income
Explanatory Variables:	Child	Adult	Adult	Child
B25075_20000_to_24999	5.89	4.73	-1.20	0.00
B25075_25000_to_29999	-5.75	0.00	0.00	0.00
B25075_30000_to_34999	-9.27	0.00	0.00	0.00
B25075_35000_to_39999	0.00	0.00	3.24	-17.10
B25075_40000_to_49999	16.27	0.00	0.32	0.00
B25075_50000_to_59999	7.31	0.00	0.00	0.00
B25075_60000_to_69999	0.00	0.00	1.31	17.55
B25075_70000_to_79999	-5.64	0.00	1.61	-8.53
B25075_80000_to_89999	-0.63	0.00	0.00	0.00
B25075_90000_to_99999	-5.02	0.00	0.00	0.00
B25075_100000_to_124999	0.63	0.00	0.00	0.50
B25075_125000_to_149999	-4.61	0.00	0.00	0.00
B25075_150000_to_174999	2.55	0.00	0.00	0.00
B25075_175000_to_199999	-2.54	0.00	0.79	0.00
B25075_200000_to_249999	-3.31	0.00	-0.09	0.00
B25075_250000_to_299999	-2.01	0.00	0.00	0.00
B25075_300000_to_399999	-0.21	0.00	-0.25	0.00
B25075_400000_to_499999	-4.10	0.00	0.00	-0.67
B25075_500000_to_749999	2.51	0.00	0.00	0.00
B25075_750000_to_999999	-11.73	0.00	0.00	0.00
B25075_1000000_to_1499999	1.72	0.00	0.00	-0.61
B25075_1500000_to_1999999	-4.27	0.00	1.52	0.00
B25075_2000000_or_more	19.38	0.00	0.00	0.00
B25038_Owner_occupied_Moved_in_2015_or_later	0.66	0.00	0.00	-1.54
B25038_Owner_occupied_Moved_in_2010_to_2014	-0.40	0.00	0.10	0.00
B25038_Owner_occupied_Moved_in_2000_to_2009	3.18	0.00	0.00	0.24
B25038_Owner_occupied_Moved_in_1990_to_1999	2.80	0.00	0.00	0.00
B25038_Owner_occupied_Moved_in_1980_to_1989	-7.79	0.00	0.00	-1.09
B25038_Owner_occupied_Moved_in_1979_or_earlier	-2.40	0.00	0.00	0.00
B25038_Renter_occupied_Moved_in_2015_or_later	-0.58	-0.11	0.00	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	0.00	0.00	0.00	0.00
B25038_Renter_occupied_Moved_in_2000_to_2009	1.88	0.00	0.00	0.00
B25038_Renter_occupied_Moved_in_1990_to_1999	-6.51	0.00	0.00	0.00
B25038_Renter_occupied_Moved_in_1980_to_1989	-17.50	0.00	0.00	13.55
B25038_Renter_occupied_Moved_in_1979_or_earlier	-8.12	0.00	0.00	0.00
B25034_Built_2014_or_later	-2.48	0.00	0.00	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Elastic Net Regession	Logistic Elastic Net Regression
Response Variable:	Utilities	Non-Zero Income	Income Severity	Non-Zero Income
Explanatory Variables:	Child	Adult	Adult	Child
B25034_Built_2010_to_2013	-0.22	0.00	0.00	0.72
B25034_Built_2000_to_2009	-1.61	0.00	0.00	0.59
B25034_Built_1990_to_1999	0.00	0.00	0.24	0.93
B25034_Built_1980_to_1989	0.00	0.00	0.00	0.00
B25034_Built_1970_to_1979	0.42	0.00	-0.02	0.00
B25034_Built_1960_to_1969	-0.13	0.00	0.00	0.00
B25034_Built_1950_to_1959	0.54	0.00	0.10	0.00
B25034_Built_1940_to_1949	2.18	0.00	-0.54	0.00
B25034_Built_1939_or_earlier	-2.59	0.00	0.00	-2.73

	Elastic Net Regession
Model Type:	
Response Variable:	Income Severity
Explanatory Variables:	Child
Intercept	-1.43
Patient_Age	0.00
GenderM	0.00
ADI_STATERNK	0.00
ADI_NATRANK	0.00
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	0.00
B14001_Enrolled_in_nursery_school_preschool	0.00
B14001_Enrolled_in_kindergarten	0.00
B14001_Enrolled_in_grade_1_to_grade_4	0.00
B14001_Enrolled_in_grade_5_to_grade_8	0.00
B14001_Enrolled_in_grade_9_to_grade_12	0.00
B14001_Enrolled_in_college_undergraduate_years	0.00
B14001_Graduate_or_professional_school	0.00
B15003_No_schooling_completed	0.00
B15003_Nursery_school	0.00
B15003_Kindergarten	0.00
B15003_1st_grade	0.00
B15003_2nd_grade	0.00
B15003_3rd_grade	-1.04
B15003_4th_grade	0.00
B15003_5th_grade	0.00
B15003_6th_grade	0.00
B15003_7th_grade	0.00
B15003_8th_grade	0.00
B15003_9th_grade	0.00
B15003_10th_grade	0.00
B15003_11th_grade	0.00
B15003_12th_grade_no_diploma	0.00
B15003_Regular_high_school_diploma	0.00
B15003_GED_or_alternative_credential	0.00
B15003_Some_college_less_than_1_year	0.00
B15003_Some_college_1_or_more_years_no_degree	0.00
B15003_Associates_degree	0.00
B15003_Bachelors_degree	0.00
B15003_Masters_degree	0.00
B15003_Professional_school_degree	-0.61

Model Type:	Elastic Net Regession
Response Variable:	Income Severity
Explanatory Variables:	Child
B15003_Doctorate_degree	0.00
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00
B23025_In_Civilian_labor_force_Employed	0.00
B23025_In_Civilian_labor_force_Unemployed	0.00
B23025_In_labor_force_Armed_Forces	0.00
B23025_Not_in_labor_force	0.00
B25002_Vacant	0.00
B25014_Total_Owner_occupied	0.00
B25014_Owener_occupied_-_050_or_less_occupants_per_room	0.00
B25014_Owener_occupied_-_051_to_100_occupants_per_room	0.00
B25014_Owener_occupied_-_101_to_150_occupants_per_room	0.00
B25014_Owener_occupied_-_151_to_200_occupants_per_room	0.00
B25014_Owener_occupied_-_201_or_more_occupants_per_room	0.00
B25014_Renter_occupied_-_050_or_less_occupants_per_room	0.00
B25014_Renter_occupied_-_051_to_100_occupants_per_room	0.00
B25014_Renter_occupied_-_101_to_150_occupants_per_room	0.00
B25014_Renter_occupied_-_151_to_200_occupants_per_room	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	0.00
B25040_Utility_gas	0.00
B25040_Bottled_tank_or_LP_gas	0.00
B25040_Electricity	0.00
B25040_Fuel_oil_kerosene_etc	0.00
B25040_Coal_or_coke	0.00
B25040_Wood	0.68
B25040_Solar_energy	0.00
B25040_Other_fuel	0.00
B25040_No_fuel_used	0.00
B25048_Complete_plumbing_facilities	1.22
B25052_Complete_kitchen_facilities	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	0.00
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	0.00
B28003_Has_a_computer_-_Without_an_Internet_subscription	0.00
B28003_No_computer	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	0.80
C24050_Construction	0.00
C24050_Manufacturing	0.00

	Elastic Net Regession
Model Type:	
Response Variable:	Income Severity
Explanatory Variables:	Child
C24050_Wholesale_trade	0.00
C24050_Retail_trade	-0.05
C24050_Transportation_and_warehousing_and_utilities	0.00
C24050_Information	0.00
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	0.00
C24050_Professional_scientific_and_management_and_administrative_and_waste	0.00
C24050_Educational_services_and_health_care_and_social_assistance	0.00
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	0.00
C24050_Other_services_except_public_administration	0.00
B07204_Same_house_1_year_ago	0.00
B07204_Different_house_in_United_States_1_year_ago	0.00
B07204_Abroad_1_year_ago	0.00
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	0.00
B25017_1_room	0.00
B25017_2_rooms	0.00
B25017_3_rooms	0.00
B25017_4_rooms	0.00
B25017_5_rooms	0.00
B25017_6_rooms	0.00
B25017_7_rooms	0.00
B25017_8_rooms	-0.36
B25017_9_or_more_rooms	0.00
B25043_With_telephone_service_available	1.02
B25024_1_detached	0.00
B25024_1_attached	0.00
B25024_2	-0.04
B25024_3_or_4	0.00
B25024_5_to_9	0.20
B25024_10_to_19	0.00
B25024_20_to_49	0.00
B25024_50_or_more	0.00
B25024_Mobile_home	0.00
B25024_Boat_RV_van_etc	0.00
B25075_Less_than_10000	0.00
B25075_10000_to_14999	0.00
B25075_15000_to_19999	0.00

	Elastic Net Regession
Model Type:	Income Severity
Response Variable:	Child
Explanatory Variables:	
B25075_20000_to_24999	0.00
B25075_25000_to_29999	0.28
B25075_30000_to_34999	0.00
B25075_35000_to_39999	0.00
B25075_40000_to_49999	0.30
B25075_50000_to_59999	0.00
B25075_60000_to_69999	0.00
B25075_70000_to_79999	0.00
B25075_80000_to_89999	0.07
B25075_90000_to_99999	0.00
B25075_100000_to_124999	0.00
B25075_125000_to_149999	0.00
B25075_150000_to_174999	0.00
B25075_175000_to_199999	0.00
B25075_200000_to_249999	0.00
B25075_250000_to_299999	0.00
B25075_300000_to_399999	0.00
B25075_400000_to_499999	0.00
B25075_500000_to_749999	0.00
B25075_750000_to_999999	0.00
B25075_1000000_to_1499999	0.00
B25075_1500000_to_1999999	0.00
B25075_2000000_or_more	0.00
B25038_Owner_occupied_Moved_in_2015_or_later	0.00
B25038_Owner_occupied_Moved_in_2010_to_2014	0.00
B25038_Owner_occupied_Moved_in_2000_to_2009	0.00
B25038_Owner_occupied_Moved_in_1990_to_1999	0.00
B25038_Owner_occupied_Moved_in_1980_to_1989	0.00
B25038_Owner_occupied_Moved_in_1979_or_earlier	0.00
B25038_Renter_occupied_Moved_in_2015_or_later	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	0.00
B25038_Renter_occupied_Moved_in_2000_to_2009	0.00
B25038_Renter_occupied_Moved_in_1990_to_1999	-0.73
B25038_Renter_occupied_Moved_in_1980_to_1989	0.00
B25038_Renter_occupied_Moved_in_1979_or_earlier	2.95
B25034_Built_2014_or_later	0.00

	Elastic Net Regession
Model Type:	
Response Variable:	Income Severity
Explanatory Variables:	Child
B25034_Built_2010_to_2013	0.00
B25034_Built_2000_to_2009	0.00
B25034_Built_1990_to_1999	0.00
B25034_Built_1980_to_1989	0.00
B25034_Built_1970_to_1979	0.00
B25034_Built_1960_to_1969	0.00
B25034_Built_1950_to_1959	-0.10
B25034_Built_1940_to_1949	0.00
B25034_Built_1939_or_earlier	-0.19

Appendix E: Research Question 2: Cost and Utilization Coefficient Summaries by Model

Model Type: Response Variable:	Logistic Elastic Net Regression Admit Flag	Logistic Elastic Net Regression Admit Flag	Logistic Elastic Net Regression Admit Flag	Elastic Net Regession Admit Cost	Elastic Net Regession Admit Cost
Explanatory Variables:	Screening (Survey) Data	Census Data	Screening and Census	Screening (Survey) Data	Census Data
Intercept	-2.65	-3.65	-2.61	7.13	6.76
Patient_Age	0.02	0.01	0.02	-0.01	0.00
Gender Male	-0.50	-0.32	-0.26	0.07	0.00
Number of Medicare Dual Eligible Months	0.00	0.04	0.00	-0.07	-0.04
No Response to Housing Questions	-0.99	N/A	-0.29	0.05	N/A
Presence of Housing Issues	0.00	N/A	0.00	0.33	N/A
No Response Food Questions	0.16	N/A	0.00	-0.14	N/A
Presence of Food Insecurity	-0.19	N/A	0.00	-0.26	N/A
No Response to Safety Questions	0.27	N/A	0.00	-0.06	N/A
Presence of Safety Issues	-0.09	N/A	0.00	0.00	N/A
No Response to Transportation Questions	0.00	N/A	0.00	0.32	N/A
Presence of Transportation Issues	-0.01	N/A	0.00	-0.03	N/A
No Response to Utilities Questions	0.36	N/A	0.00	-0.04	N/A
Presence of Utilities Issues	0.00	N/A	0.00	-0.52	N/A
No Response to Education Questions	-0.60	N/A	-0.46	0.00	N/A
No High School Diploma	-0.19	N/A	0.00	0.02	N/A
No Response to Income Questions	0.00	N/A	0.00	-0.02	N/A
Percent of FPL	-0.20	N/A	0.00	0.00	N/A
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	N/A	0.00	0.00	N/A	-0.04
B14001_Enrolled_in_nursery_school_preschool	N/A	0.00	0.00	N/A	0.00
B14001_Enrolled_in_kindergarten	N/A	0.00	0.00	N/A	0.00
B14001_Enrolled_in_grade_1_to_grade_4	N/A	0.00	0.00	N/A	0.00
B14001_Enrolled_in_grade_5_to_grade_8	N/A	0.00	0.00	N/A	-0.23
B14001_Enrolled_in_grade_9_to_grade_12	N/A	0.00	0.00	N/A	0.00
B14001_Enrolled_in_college_undergraduate_years	N/A	0.00	0.00	N/A	0.00
B14001_Graduate_or_professional_school	N/A	0.00	0.00	N/A	0.00
B15003_No_schooling_completed	N/A	0.00	0.00	N/A	0.00
B15003_Nursery_school	N/A	0.00	0.00	N/A	0.00
B15003_Kindergarten	N/A	0.00	0.00	N/A	0.00
B15003_1st_grade	N/A	0.00	0.00	N/A	-0.57
B15003_2nd_grade	N/A	0.00	0.00	N/A	0.00
B15003_3rd_grade	N/A	0.00	0.00	N/A	0.00
B15003_4th_grade	N/A	0.00	0.00	N/A	0.00
B15003_5th_grade	N/A	0.17	0.00	N/A	0.00

Model Type:

Explanatory Variables:	Logistic Elastic Net Regression Admit Flag — Screening (Survey) Data	Logistic Elastic Net Regression Admit Flag — Census Data	Logistic Elastic Net Regression Admit Flag — Screening and Census	Elastic Net Regression Admit Cost — Screening (Survey) Data	Elastic Net Regression Admit Cost — Census Data
B15003_6th_grade	N/A	0.00	0.00	N/A	0.00
B15003_7th_grade	N/A	0.00	0.00	N/A	0.00
B15003_8th_grade	N/A	0.00	0.00	N/A	0.00
B15003_9th_grade	N/A	0.00	0.00	N/A	0.00
B15003_10th_grade	N/A	0.00	0.00	N/A	0.00
B15003_11th_grade	N/A	0.00	0.00	N/A	0.00
B15003_12th_grade_no_diploma	N/A	0.00	0.00	N/A	0.00
B15003_Regular_high_school_diploma	N/A	0.29	0.00	N/A	0.00
B15003_GED_or_alternative_credential	N/A	0.00	0.00	N/A	0.00
B15003_Some_college_less_than_1_year	N/A	0.00	0.00	N/A	0.00
B15003_Some_college_1_or_more_years_no_degree	N/A	0.00	0.00	N/A	0.00
B15003_Associates_degree	N/A	0.00	0.00	N/A	0.00
B15003_Bachelors_degree	N/A	0.00	0.00	N/A	0.00
B15003_Masters_degree	N/A	0.00	0.00	N/A	0.00
B15003_Professional_school_degree	N/A	0.00	0.00	N/A	0.00
B15003_Doctorate_degree	N/A	-0.59	0.00	N/A	0.99
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-i	N/A	0.00	0.00	N/A	0.00
B23025_In_Civilian_labor_force_Employed	N/A	0.00	0.00	N/A	0.00
B23025_In_Civilian_labor_force_Unemployed	N/A	0.00	0.00	N/A	0.00
B23025_In_labor_force_Armed_Forces	N/A	0.00	0.00	N/A	0.00
B23025_Not_in_labor_force	N/A	0.00	0.00	N/A	0.00
B25002_Vacant	N/A	0.00	0.00	N/A	0.00
B25014_Total_Owner_occupied	N/A	0.00	0.00	N/A	0.00
B25014_Owener_occupied_-_050_or_less_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Owener_occupied_-_051_to_100_occupants_per_room	N/A	-0.01	0.00	N/A	0.00
B25014_Owener_occupied_-_101_to_150_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Owener_occupied_-_151_to_200_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Owener_occupied_-_201_or_more_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Renter_occupied_-_050_or_less_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Renter_occupied_-_051_to_100_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Renter_occupied_-_101_to_150_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Renter_occupied_-_151_to_200_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25040_Utility_gas	N/A	0.00	0.00	N/A	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Admit Flag	Admit Flag	Admit Flag	Admit Cost	Admit Cost
Explanatory Variables:	Screening (Survey) Data	Census Data	Screening and Census	Screening (Survey) Data	Census Data
B25040_Bottled_tank_or_LP_gas	N/A	0.00	0.00	N/A	0.00
B25040_Electricity	N/A	0.00	0.00	N/A	0.00
B25040_Fuel_oil_kerosene_etc	N/A	0.00	0.00	N/A	3.63
B25040_Coal_or_coke	N/A	0.00	0.00	N/A	0.00
B25040_Wood	N/A	0.00	0.00	N/A	1.05
B25040_Solar_energy	N/A	0.00	0.00	N/A	0.00
B25040_Other_fuel	N/A	0.00	0.00	N/A	0.00
B25040_No_fuel_used	N/A	0.00	0.00	N/A	0.00
B25048_Complete_plumbing_facilities	N/A	0.00	0.00	N/A	0.00
B25052_Complete_kitchen_facilities	N/A	0.00	0.00	N/A	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	N/A	0.00	0.00	N/A	0.36
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	N/A	0.00	0.00	N/A	0.00
B28003_Has_a_computer_-_Without_an_Internet_subscription	N/A	0.00	0.00	N/A	0.00
B28003_No_computer	N/A	0.00	0.00	N/A	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	N/A	0.00	0.00	N/A	0.00
C24050_Construction	N/A	0.00	0.00	N/A	0.00
C24050_Manufacturing	N/A	0.00	0.00	N/A	0.00
C24050_Wholesale_trade	N/A	0.00	0.00	N/A	0.00
C24050_Retail_trade	N/A	0.00	0.00	N/A	0.00
C24050_Transportation_and_warehousing_and_utilities	N/A	0.00	0.00	N/A	-0.06
C24050_Information	N/A	0.00	0.00	N/A	-1.37
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	N/A	0.00	0.00	N/A	-0.80
C24050_Professional_scientific_and_management_and_administrative_and_waste	N/A	0.00	0.00	N/A	0.04
C24050_Educational_services_and_health_care_and_social_assistance	N/A	0.00	0.00	N/A	0.00
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	N/A	0.00	0.00	N/A	0.13
C24050_Other_services_except_public_administration	N/A	0.00	0.00	N/A	0.19
B07204_Same_house_1_year_ago	N/A	0.00	0.00	N/A	0.00
B07204_Different_house_in_United_States_1_year_ago	N/A	0.00	0.00	N/A	0.01
B07204_Abroad_1_year_ago	N/A	0.00	0.00	N/A	0.00
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	N/A	0.00	0.00	N/A	0.00
B25017_1_room	N/A	0.00	0.00	N/A	0.00
B25017_2_rooms	N/A	0.00	0.00	N/A	0.00
B25017_3_rooms	N/A	0.00	0.00	N/A	0.00
B25017_4_rooms	N/A	0.00	0.00	N/A	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Admit Flag	Admit Flag	Admit Flag	Admit Cost	Admit Cost
	Screening (Survey) Data	Census Data	Screening and Census	Screening (Survey) Data	Census Data
Explanatory Variables:					
B25017_5_rooms	N/A	0.00	0.00	N/A	0.00
B25017_6_rooms	N/A	0.00	0.00	N/A	0.00
B25017_7_rooms	N/A	0.00	0.00	N/A	0.00
B25017_8_rooms	N/A	0.00	0.00	N/A	0.28
B25017_9_or_more_rooms	N/A	0.00	0.00	N/A	0.00
B25043_With_telephone_service_available	N/A	0.00	0.00	N/A	0.41
B25024_1_detached	N/A	0.00	0.00	N/A	0.00
B25024_1_attached	N/A	0.00	0.00	N/A	0.00
B25024_2	N/A	0.00	0.00	N/A	0.00
B25024_3_or_4	N/A	0.00	0.00	N/A	0.00
B25024_5_to_9	N/A	0.00	0.00	N/A	0.00
B25024_10_to_19	N/A	0.00	0.00	N/A	0.00
B25024_20_to_49	N/A	0.00	0.00	N/A	0.00
B25024_50_or_more	N/A	0.00	0.00	N/A	0.00
B25024_Mobile_home	N/A	0.00	0.00	N/A	0.00
B25024_Boat_RV_van_etc	N/A	0.00	0.00	N/A	0.00
B25075_Less_than_10000	N/A	0.00	0.00	N/A	0.00
B25075_10000_to_14999	N/A	0.00	0.00	N/A	0.00
B25075_15000_to_19999	N/A	0.00	0.00	N/A	0.00
B25075_20000_to_24999	N/A	0.00	0.00	N/A	0.00
B25075_25000_to_29999	N/A	0.00	0.00	N/A	0.00
B25075_30000_to_34999	N/A	0.00	0.00	N/A	0.00
B25075_35000_to_39999	N/A	0.00	0.00	N/A	0.00
B25075_40000_to_49999	N/A	0.00	0.00	N/A	-0.35
B25075_50000_to_59999	N/A	0.00	0.00	N/A	-0.20
B25075_60000_to_69999	N/A	0.00	0.00	N/A	0.00
B25075_70000_to_79999	N/A	0.00	0.00	N/A	-0.73
B25075_80000_to_89999	N/A	0.00	0.00	N/A	0.00
B25075_90000_to_99999	N/A	0.00	0.00	N/A	0.00
B25075_100000_to_124999	N/A	0.00	0.00	N/A	0.00
B25075_125000_to_149999	N/A	0.00	0.00	N/A	0.00
B25075_150000_to_174999	N/A	0.00	0.00	N/A	-0.27
B25075_175000_to_199999	N/A	0.00	0.00	N/A	0.00
B25075_200000_to_249999	N/A	0.00	0.00	N/A	0.00

Model Type:
Response Variable:

Explanatory Variables:	Logistic Elastic Net Regression Admit Flag — Screening (Survey) Data	Logistic Elastic Net Regression Admit Flag — Census Data	Logistic Elastic Net Regression Admit Flag — Screening and Census	Elastic Net Regression Admit Cost — Screening (Survey) Data	Elastic Net Regression Admit Cost — Census Data
B25075_250000_to_299999	N/A	0.00	0.00	N/A	0.00
B25075_300000_to_399999	N/A	0.00	0.00	N/A	0.00
B25075_400000_to_499999	N/A	0.00	0.00	N/A	0.18
B25075_500000_to_749999	N/A	0.00	0.00	N/A	0.00
B25075_750000_to_999999	N/A	0.00	0.00	N/A	0.00
B25075_1000000_to_1499999	N/A	-0.56	0.00	N/A	1.47
B25075_1500000_to_1999999	N/A	0.00	0.00	N/A	0.00
B25075_2000000_or_more	N/A	-0.95	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_2015_or_later	N/A	0.00	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_2010_to_2014	N/A	0.00	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_2000_to_2009	N/A	-0.04	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_1990_to_1999	N/A	0.00	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_1980_to_1989	N/A	0.00	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_1979_or_earlier	N/A	0.00	0.00	N/A	0.00
B25038_Renter_occupied_Moved_in_2015_or_later	N/A	0.00	0.00	N/A	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	N/A	0.00	0.00	N/A	0.00
B25038_Renter_occupied_Moved_in_2000_to_2009	N/A	0.00	0.00	N/A	0.00
B25038_Renter_occupied_Moved_in_1990_to_1999	N/A	0.00	0.00	N/A	0.00
B25038_Renter_occupied_Moved_in_1980_to_1989	N/A	0.00	0.00	N/A	0.00
B25038_Renter_occupied_Moved_in_1979_or_earlier	N/A	0.00	0.00	N/A	0.00
B25034_Built_2014_or_later	N/A	0.00	0.00	N/A	0.00
B25034_Built_2010_to_2013	N/A	0.00	0.00	N/A	0.00
B25034_Built_2000_to_2009	N/A	0.00	0.00	N/A	-0.17
B25034_Built_1990_to_1999	N/A	0.00	0.00	N/A	0.00
B25034_Built_1980_to_1989	N/A	0.00	0.00	N/A	0.01
B25034_Built_1970_to_1979	N/A	0.00	0.00	N/A	0.00
B25034_Built_1960_to_1969	N/A	0.00	0.00	N/A	0.00
B25034_Built_1950_to_1959	N/A	0.00	0.00	N/A	0.00
B25034_Built_1940_to_1949	N/A	0.00	0.00	N/A	0.00
B25034_Built_1939_or_earlier	N/A	0.00	0.00	N/A	0.00

Model Type:	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Admit Cost	Admit Count	Admit Count	Admit Count	Admit Days
Explanatory Variables:	Screening and Census	Screening (Survey) Data	Census Data	Screening and Census	Screening (Survey) Data
Intercept	6.32	-1.00	-1.21	-3.91	-0.25
Patient_Age	0.00	-0.02	-0.01	-0.01	-0.01
Gender_Male	0.00	-0.13	-0.15	-0.06	0.00
Number of Medicare Dual Eligible Months	-0.05	0.00	0.00	0.00	0.00
No Response to Housing Questions	0.01	0.07	N/A	0.03	0.00
Presence of Housing Issues	0.00	0.27	N/A	0.07	0.27
No Response Food Questions	0.00	0.00	N/A	0.01	-0.03
Presence of Food Insecurity	0.00	-0.09	N/A	-0.06	-0.05
No Response to Safety Questions	0.00	-0.18	N/A	-0.03	-0.12
Presence of Safety Issues	0.00	0.00	N/A	0.00	0.00
No Response to Transportation Questions	0.10	0.30	N/A	0.02	0.21
Presence of Transportation Issues	0.00	0.10	N/A	0.00	0.12
No Response to Utilities Questions	0.00	0.00	N/A	0.01	-0.04
Presence of Utilities Issues	-0.13	-0.58	N/A	-0.25	-0.43
No Response to Education Questions	0.00	-0.10	N/A	0.00	0.02
No High School Diploma	0.00	-0.05	N/A	0.00	-0.03
No Response to Income Questions	0.00	-0.04	N/A	0.00	0.00
Percent of FPL	0.00	0.09	N/A	0.02	0.00
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	0.00	N/A	0.00	0.02	N/A
B14001_Enrolled_in_nursery_school_preschool	0.00	N/A	0.00	0.00	N/A
B14001_Enrolled_in_kindergarten	0.00	N/A	0.00	0.00	N/A
B14001_Enrolled_in_grade_1_to_grade_4	0.00	N/A	0.00	0.00	N/A
B14001_Enrolled_in_grade_5_to_grade_8	-0.17	N/A	0.00	0.00	N/A
B14001_Enrolled_in_grade_9_to_grade_12	0.00	N/A	0.00	0.00	N/A
B14001_Enrolled_in_college_undergraduate_years	0.22	N/A	0.35	0.15	N/A
B14001_Graduate_or_professional_school	0.00	N/A	0.00	0.00	N/A
B15003_No_schooling_completed	0.00	N/A	0.00	0.00	N/A
B15003_Nursery_school	0.00	N/A	30.88	0.00	N/A
B15003_Kindergarten	0.00	N/A	0.00	0.00	N/A
B15003_1st_grade	0.00	N/A	0.00	0.00	N/A
B15003_2nd_grade	0.00	N/A	-1.68	0.00	N/A
B15003_3rd_grade	0.00	N/A	0.00	0.00	N/A
B15003_4th_grade	0.00	N/A	0.00	-3.70	N/A
B15003_5th_grade	0.00	N/A	0.00	0.00	N/A

Model Type:
Response Variable:

Explanatory Variables:	Elastic Net Regession Admit Cost — Screening and Census	Elastic Net Regession Admit Count — Screening (Survey) Data	Elastic Net Regession Admit Count — Census Data	Elastic Net Regession Admit Count — Screening and Census	Elastic Net Regession Admit Days — Screening (Survey) Data
B15003_6th_grade	0.00	N/A	0.00	0.00	N/A
B15003_7th_grade	0.00	N/A	0.00	0.00	N/A
B15003_8th_grade	0.00	N/A	0.00	0.00	N/A
B15003_9th_grade	0.00	N/A	0.00	0.00	N/A
B15003_10th_grade	0.00	N/A	0.00	0.00	N/A
B15003_11th_grade	0.00	N/A	0.00	0.00	N/A
B15003_12th_grade_no_diploma	0.00	N/A	0.00	-0.25	N/A
B15003_Regular_high_school_diploma	0.00	N/A	0.00	0.00	N/A
B15003_GED_or_alternative_credential	0.00	N/A	0.00	0.00	N/A
B15003_Some_college_less_than_1_year	0.00	N/A	0.00	-0.40	N/A
B15003_Some_college_1_or_more_years_no_degree	0.00	N/A	0.00	0.00	N/A
B15003_Associates_degree	0.00	N/A	0.00	0.00	N/A
B15003_Bachelors_degree	0.00	N/A	0.00	0.00	N/A
B15003_Masters_degree	0.00	N/A	0.00	0.12	N/A
B15003_Professional_school_degree	0.00	N/A	0.00	0.00	N/A
B15003_Doctorate_degree	0.00	N/A	0.00	0.29	N/A
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	N/A	0.00	0.00	N/A
B23025_In_Civilian_labor_force_Employed	0.00	N/A	0.00	0.00	N/A
B23025_In_Civilian_labor_force_Unemployed	0.00	N/A	0.00	0.00	N/A
B23025_In_labor_force_Armed_Forces	0.00	N/A	0.00	0.00	N/A
B23025_Not_in_labor_force	0.00	N/A	0.00	0.00	N/A
B25002_Vacant	0.00	N/A	0.00	0.00	N/A
B25014_Total_Owner_occupied	0.00	N/A	0.00	0.00	N/A
B25014_Owener_occupied_-_050_or_less_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Owener_occupied_-_051_to_100_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Owener_occupied_-_101_to_150_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Owener_occupied_-_151_to_200_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Owener_occupied_-_201_or_more_occupants_per_room	0.00	N/A	0.00	-0.16	N/A
B25014_Renter_occupied_-_050_or_less_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Renter_occupied_-_051_to_100_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Renter_occupied_-_101_to_150_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Renter_occupied_-_151_to_200_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Renter_occupied_-_201_or_more_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25040_Utility_gas	0.00	N/A	0.00	0.00	N/A

Model Type:	Elastic Net Regession	Elastic Net Regession	Elastic Net Regession	Elastic Net Regession	Elastic Net Regession
Response Variable:	Admit Cost	Admit Count	Admit Count	Admit Count	Admit Days
Explanatory Variables:	Screening and Census	Screening (Survey) Data	Census Data	Screening and Census	Screening (Survey) Data
B25040_Bottled_tank_or_LP_gas	0.00	N/A	0.00	0.00	N/A
B25040_Electricity	0.00	N/A	0.00	0.00	N/A
B25040_Fuel_oil_kerosene_etc	0.00	N/A	0.00	0.00	N/A
B25040_Coal_or_coke	0.00	N/A	0.00	0.00	N/A
B25040_Wood	1.08	N/A	0.00	0.00	N/A
B25040_Solar_energy	-0.63	N/A	0.00	0.00	N/A
B25040_Other_fuel	0.00	N/A	0.00	0.00	N/A
B25040_No_fuel_used	-1.09	N/A	0.00	-1.01	N/A
B25048_Complete_plumbing_facilities	0.00	N/A	0.00	1.50	N/A
B25052_Complete_kitchen_facilities	0.00	N/A	0.00	0.00	N/A
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	0.00	N/A	0.00	0.00	N/A
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	0.00	N/A	0.00	0.00	N/A
B28003_Has_a_computer_-_Without_an_Internet_subscription	0.00	N/A	0.00	0.00	N/A
B28003_No_computer	0.00	N/A	0.00	0.00	N/A
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	0.00	N/A	-0.33	0.00	N/A
C24050_Construction	0.00	N/A	0.00	-0.29	N/A
C24050_Manufacturing	0.00	N/A	0.00	0.00	N/A
C24050_Wholesale_trade	-0.71	N/A	0.00	0.00	N/A
C24050_Retail_trade	0.00	N/A	0.00	0.00	N/A
C24050_Transportation_and_warehousing_and_utilities	0.00	N/A	-0.54	0.00	N/A
C24050_Information	0.00	N/A	0.00	0.00	N/A
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	0.00	N/A	-0.03	0.00	N/A
C24050_Professional_scientific_and_management_and_administrative_and_waste	0.00	N/A	0.00	0.13	N/A
C24050_Educational_services_and_health_care_and_social_assistance	0.00	N/A	0.00	0.00	N/A
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	0.00	N/A	0.00	0.00	N/A
C24050_Other_services_except_public_administration	0.00	N/A	0.00	0.59	N/A
B07204_Same_house_1_year_ago	0.00	N/A	0.00	0.00	N/A
B07204_Different_house_in_United_States_1_year_ago	0.00	N/A	0.00	0.00	N/A
B07204_Abroad_1_year_ago	0.00	N/A	0.00	0.00	N/A
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	0.00	N/A	0.00	0.00	N/A
B25017_1_room	0.00	N/A	0.00	0.00	N/A
B25017_2_rooms	0.00	N/A	0.00	0.00	N/A
B25017_3_rooms	0.00	N/A	0.00	0.00	N/A
B25017_4_rooms	0.00	N/A	0.00	0.00	N/A

Model Type: Response Variable:	Elastic Net Regession Admit Cost	Elastic Net Regession Admit Count	Elastic Net Regression Admit Count	Elastic Net Regression Admit Count	Elastic Net Regression Admit Days
Explanatory Variables:	Screening and Census	Screening (Survey) Data	Census Data	Screening and Census	Screening (Survey) Data
B25017_5_rooms	0.00	N/A	0.00	0.00	N/A
B25017_6_rooms	0.00	N/A	0.00	0.00	N/A
B25017_7_rooms	0.00	N/A	0.00	0.00	N/A
B25017_8_rooms	0.00	N/A	0.00	0.00	N/A
B25017_9_or_more_rooms	0.00	N/A	0.00	0.00	N/A
B25043_With_telephone_service_available	0.65	N/A	0.00	1.23	N/A
B25024_1_detached	0.00	N/A	0.00	0.00	N/A
B25024_1_attached	0.00	N/A	0.00	0.00	N/A
B25024_2	0.00	N/A	0.00	0.00	N/A
B25024_3_or_4	0.00	N/A	0.00	0.00	N/A
B25024_5_to_9	0.00	N/A	0.00	0.00	N/A
B25024_10_to_19	0.00	N/A	0.00	0.00	N/A
B25024_20_to_49	0.00	N/A	0.00	0.00	N/A
B25024_50_or_more	0.00	N/A	0.00	0.00	N/A
B25024_Mobile_home	0.00	N/A	0.00	0.00	N/A
B25024_Boat_RV_van_etc	0.00	N/A	0.00	4.18	N/A
B25075_Less_than_10000	0.00	N/A	0.00	0.00	N/A
B25075_10000_to_14999	0.00	N/A	0.00	0.00	N/A
B25075_15000_to_19999	0.00	N/A	0.00	-0.49	N/A
B25075_20000_to_24999	0.00	N/A	0.00	0.00	N/A
B25075_25000_to_29999	0.00	N/A	0.00	0.00	N/A
B25075_30000_to_34999	0.00	N/A	0.00	0.00	N/A
B25075_35000_to_39999	0.00	N/A	0.93	1.44	N/A
B25075_40000_to_49999	0.00	N/A	0.00	0.00	N/A
B25075_50000_to_59999	0.00	N/A	0.00	0.00	N/A
B25075_60000_to_69999	0.00	N/A	0.00	0.00	N/A
B25075_70000_to_79999	-0.45	N/A	0.00	0.00	N/A
B25075_80000_to_89999	0.00	N/A	-0.34	-0.30	N/A
B25075_90000_to_99999	0.00	N/A	0.00	-0.43	N/A
B25075_100000_to_124999	0.00	N/A	0.00	0.00	N/A
B25075_125000_to_149999	0.00	N/A	0.00	0.00	N/A
B25075_150000_to_174999	0.00	N/A	-0.26	0.00	N/A
B25075_175000_to_199999	0.00	N/A	0.00	0.00	N/A
B25075_200000_to_249999	0.00	N/A	0.00	0.00	N/A

Model Type:
Response Variable:

Explanatory Variables:	Elastic Net Regession Admit Cost — Screening and Census	Elastic Net Regession Admit Count — Screening (Survey) Data	Elastic Net Regession Admit Count — Census Data	Elastic Net Regession Admit Count — Screening and Census	Elastic Net Regession Admit Days — Screening (Survey) Data
B25075_250000_to_299999	0.00	N/A	0.00	0.00	N/A
B25075_300000_to_399999	0.00	N/A	0.00	0.00	N/A
B25075_400000_to_499999	0.00	N/A	0.00	0.00	N/A
B25075_500000_to_749999	0.00	N/A	0.00	0.00	N/A
B25075_750000_to_999999	0.12	N/A	0.00	0.00	N/A
B25075_1000000_to_1499999	1.40	N/A	2.25	1.21	N/A
B25075_1500000_to_1999999	0.00	N/A	0.00	0.00	N/A
B25075_2000000_or_more	0.00	N/A	0.00	0.00	N/A
B25038_Owner_occupied_Moved_in_2015_or_later	0.00	N/A	0.00	0.00	N/A
B25038_Owner_occupied_Moved_in_2010_to_2014	0.00	N/A	0.00	0.00	N/A
B25038_Owner_occupied_Moved_in_2000_to_2009	0.00	N/A	0.00	-0.08	N/A
B25038_Owner_occupied_Moved_in_1990_to_1999	0.00	N/A	0.00	0.00	N/A
B25038_Owner_occupied_Moved_in_1980_to_1989	0.00	N/A	0.00	0.00	N/A
B25038_Owner_occupied_Moved_in_1979_or_earlier	0.00	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_2015_or_later	0.00	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_2010_to_2014	0.00	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_2000_to_2009	0.00	N/A	0.00	-0.33	N/A
B25038_Renter_occupied_Moved_in_1990_to_1999	0.00	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_1980_to_1989	0.00	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_1979_or_earlier	0.00	N/A	1.44	0.00	N/A
B25034_Built_2014_or_later	0.00	N/A	0.00	0.00	N/A
B25034_Built_2010_to_2013	0.00	N/A	0.00	0.00	N/A
B25034_Built_2000_to_2009	-0.07	N/A	0.00	0.00	N/A
B25034_Built_1990_to_1999	0.00	N/A	0.00	0.00	N/A
B25034_Built_1980_to_1989	0.11	N/A	0.10	0.00	N/A
B25034_Built_1970_to_1979	0.00	N/A	0.14	0.00	N/A
B25034_Built_1960_to_1969	0.00	N/A	0.00	0.00	N/A
B25034_Built_1950_to_1959	0.00	N/A	0.00	0.00	N/A
B25034_Built_1940_to_1949	0.00	N/A	0.00	0.00	N/A
B25034_Built_1939_or_earlier	0.00	N/A	0.00	0.00	N/A

Model Type:	Elastic Net Regession	Elastic Net Regession
Response Variable:	Admit Days	Admit Days
		Screening
Explanatory Variables:	Census Data	and Census
Intercept	-1.68	-0.36
Patient_Age	-0.01	-0.01
Gender Male	-0.03	0.00
Number of Medicare Dual Eligible Months	0.00	0.00
No Response to Housing Questions	N/A	0.00
Presence of Housing Issues	N/A	0.00
No Response Food Questions	N/A	0.00
Presence of Food Insecurity	N/A	0.00
No Response to Safety Questions	N/A	0.00
Presence of Safety Issues	N/A	0.00
No Response to Transportation Questions	N/A	0.00
Presence of Transportation Issues	N/A	0.00
No Response to Utilities Questions	N/A	0.00
Presence of Utilities Issues	N/A	0.00
No Response to Education Questions	N/A	0.00
No High School Diploma	N/A	0.00
No Response to Income Questions	N/A	0.00
Percent of FPL	N/A	0.00
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	0.00	0.00
B14001_Enrolled_in_nursery_school_preschool	0.00	0.00
B14001_Enrolled_in_kindergarten	0.00	0.00
B14001_Enrolled_in_grade_1_to_grade_4	0.00	0.00
B14001_Enrolled_in_grade_5_to_grade_8	0.00	-0.05
B14001_Enrolled_in_grade_9_to_grade_12	0.00	0.00
B14001_Enrolled_in_college_undergraduate_years	0.00	0.00
B14001_Graduate_or_professional_school	0.00	0.00
B15003_No_schooling_completed	0.00	0.00
B15003_Nursery_school	0.00	0.00
B15003_Kindergarten	0.00	0.00
B15003_1st_grade	0.00	0.00
B15003_2nd_grade	-1.72	0.00
B15003_3rd_grade	0.00	0.00
B15003_4th_grade	0.00	0.00
B15003_5th_grade	0.00	0.00

Model Type:

Response Variable:

Explanatory Variables:	Elastic Net Regession Admit Days — Census Data	Elastic Net Regession Admit Days — Screening and Census
B15003_6th_grade	0.00	0.00
B15003_7th_grade	0.00	0.00
B15003_8th_grade	0.00	0.00
B15003_9th_grade	0.00	0.00
B15003_10th_grade	-0.36	0.00
B15003_11th_grade	0.00	0.00
B15003_12th_grade_no_diploma	0.00	0.00
B15003_Regular_high_school_diploma	0.00	0.00
B15003_GED_or_alternative_credential	0.00	0.00
B15003_Some_college_less_than_1_year	0.00	0.00
B15003_Some_college_1_or_more_years_no_degree	0.00	0.00
B15003_Associates_degree	0.00	0.00
B15003_Bachelors_degree	0.00	0.00
B15003_Masters_degree	0.00	0.11
B15003_Professional_school_degree	0.00	0.00
B15003_Doctorate_degree	0.00	0.23
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	0.00
B23025_In_Civilian_labor_force_Employed	0.00	0.00
B23025_In_Civilian_labor_force_Unemployed	0.00	0.00
B23025_In_labor_force_Armed_Forces	0.00	0.00
B23025_Not_in_labor_force	0.00	0.00
B25002_Vacant	0.00	0.00
B25014_Total_Owner_occupied	0.00	0.00
B25014_Owener_occupied_-_050_or_less_occupants_per_room	0.00	0.00
B25014_Owener_occupied_-_051_to_100_occupants_per_room	0.00	0.00
B25014_Owener_occupied_-_101_to_150_occupants_per_room	0.00	0.00
B25014_Owener_occupied_-_151_to_200_occupants_per_room	0.00	0.00
B25014_Owener_occupied_-_201_or_more_occupants_per_room	0.00	0.00
B25014_Renter_occupied_-_050_or_less_occupants_per_room	0.00	0.00
B25014_Renter_occupied_-_051_to_100_occupants_per_room	0.00	0.00
B25014_Renter_occupied_-_101_to_150_occupants_per_room	0.00	0.00
B25014_Renter_occupied_-_151_to_200_occupants_per_room	0.00	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	0.00	0.11
B25040_Utility_gas	0.00	0.00

Model Type:

Response Variable:

Explanatory Variables:	Elastic Net Regression Admit Days — Census Data	Elastic Net Regession Admit Days — Screening and Census
B25040_Bottled_tank_or_LP_gas	0.00	0.00
B25040_Electricity	0.00	0.00
B25040_Fuel_oil_kerosene_etc	14.85	0.00
B25040_Coal_or_coke	0.00	0.00
B25040_Wood	0.39	0.00
B25040_Solar_energy	1.91	0.00
B25040_Other_fuel	0.00	0.00
B25040_No_fuel_used	0.00	0.00
B25048_Complete_plumbing_facilities	0.00	0.00
B25052_Complete_kitchen_facilities	0.00	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	0.00	0.00
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	0.00	0.00
B28003_Has_a_computer_-_Without_an_Internet_subscription	0.00	0.00
B28003_No_computer	-0.10	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	0.00	0.00
C24050_Construction	-0.17	0.00
C24050_Manufacturing	0.00	0.00
C24050_Wholesale_trade	0.00	0.00
C24050_Retail_trade	0.00	0.00
C24050_Transportation_and_warehousing_and_utilities	-0.02	-0.18
C24050_Information	0.00	0.03
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	-0.30	0.00
C24050_Professional_scientific_and_management_and_administrative_and_waste	0.00	0.00
C24050_Educational_services_and_health_care_and_social_assistance	0.27	0.00
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	0.36	0.00
C24050_Other_services_except_public_administration	0.00	0.00
B07204_Same_house_1_year_ago	0.00	0.00
B07204_Different_house_in_United_States_1_year_ago	0.00	0.00
B07204_Abroad_1_year_ago	0.00	0.00
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	0.00	0.00
B25017_1_room	0.00	0.00
B25017_2_rooms	0.00	0.00
B25017_3_rooms	0.00	0.00
B25017_4_rooms	0.00	0.00

Model Type:
Response Variable:

Explanatory Variables:	Elastic Net Regession Admit Days — Census Data	Elastic Net Regession Admit Days — Screening and Census
B25017_5_rooms	0.00	-0.16
B25017_6_rooms	0.00	0.00
B25017_7_rooms	0.00	0.00
B25017_8_rooms	0.00	0.00
B25017_9_or_more_rooms	0.00	0.00
B25043_With_telephone_service_available	1.27	0.00
B25024_1_detached	0.00	0.00
B25024_1_attached	0.00	0.00
B25024_2	0.00	0.00
B25024_3_or_4	0.00	0.00
B25024_5_to_9	0.00	0.00
B25024_10_to_19	0.00	0.00
B25024_20_to_49	0.00	0.00
B25024_50_or_more	0.00	0.00
B25024_Mobile_home	0.00	0.00
B25024_Boat_RV_van_etc	0.00	0.00
B25075_Less_than_10000	0.00	0.00
B25075_10000_to_14999	0.00	0.00
B25075_15000_to_19999	0.00	0.00
B25075_20000_to_24999	0.00	0.00
B25075_25000_to_29999	0.00	0.00
B25075_30000_to_34999	0.00	0.00
B25075_35000_to_39999	0.00	0.00
B25075_40000_to_49999	-1.37	0.00
B25075_50000_to_59999	0.00	0.00
B25075_60000_to_69999	0.00	0.00
B25075_70000_to_79999	-0.34	0.00
B25075_80000_to_89999	-0.86	-1.04
B25075_90000_to_99999	-0.08	0.00
B25075_100000_to_124999	0.00	0.00
B25075_125000_to_149999	0.00	0.00
B25075_150000_to_174999	-0.29	0.00
B25075_175000_to_199999	0.00	0.00
B25075_200000_to_249999	0.00	0.00

Model Type:
Response Variable:

Explanatory Variables:	Elastic Net Regession Admit Days — Census Data	Elastic Net Regession Admit Days — Screening and Census
B25075_250000_to_299999	0.00	0.00
B25075_300000_to_399999	0.00	0.00
B25075_400000_to_499999	0.00	0.00
B25075_500000_to_749999	0.00	0.00
B25075_750000_to_999999	0.00	0.00
B25075_1000000_to_1499999	1.03	0.00
B25075_1500000_to_1999999	0.00	0.00
B25075_2000000_or_more	0.00	0.00
B25038_Owner_occupied_Moved_in_2015_or_later	0.00	0.00
B25038_Owner_occupied_Moved_in_2010_to_2014	0.00	0.00
B25038_Owner_occupied_Moved_in_2000_to_2009	0.00	0.00
B25038_Owner_occupied_Moved_in_1990_to_1999	0.00	0.00
B25038_Owner_occupied_Moved_in_1980_to_1989	0.00	0.00
B25038_Owner_occupied_Moved_in_1979_or_earlier	0.00	0.00
B25038_Renter_occupied_Moved_in_2015_or_later	0.00	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	0.00	0.00
B25038_Renter_occupied_Moved_in_2000_to_2009	0.00	0.00
B25038_Renter_occupied_Moved_in_1990_to_1999	0.00	0.00
B25038_Renter_occupied_Moved_in_1980_to_1989	1.83	0.00
B25038_Renter_occupied_Moved_in_1979_or_earlier	4.74	0.00
B25034_Built_2014_or_later	0.00	0.00
B25034_Built_2010_to_2013	0.00	0.00
B25034_Built_2000_to_2009	0.00	0.00
B25034_Built_1990_to_1999	0.00	0.00
B25034_Built_1980_to_1989	0.04	0.00
B25034_Built_1970_to_1979	0.05	0.00
B25034_Built_1960_to_1969	0.00	0.00
B25034_Built_1950_to_1959	0.00	0.00
B25034_Built_1940_to_1949	0.00	0.00
B25034_Built_1939_or_earlier	0.00	0.00

Appendix F: Research Question 3: High-Risk Coefficient Summaries by Model

Model Type:

	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Hypertension Screening (Survey) Data	Hypertension Screening and Census	Hypertension Census Data	Diabetes Screening (Survey) Data	Diabetes Screening and Census
Explanatory Variables:					
Intercept	-3.75	-4.40	-4.07	-3.70	-2.54
Patient_Age	0.07	0.08	0.06	0.07	0.05
Gender Male	0.24	0.27	0.15	0.05	0.08
Number of Medicare Dual Eligible Months	0.04	0.01	-0.02	0.00	0.02
No Response to Housing Questions	-0.19	-0.25	N/A	-0.50	-0.26
Presence of Housing Issues	0.07	0.00	N/A	-0.11	0.00
No Response Food Questions	0.00	0.00	N/A	0.37	0.07
Presence of Food Insecurity	0.00	0.00	N/A	0.25	0.04
No Response to Safety Questions	-0.12	-0.01	N/A	-0.29	-0.15
Presence of Safety Issues	0.00	0.00	N/A	0.17	0.01
No Response to Transportation Questions	-0.02	0.00	N/A	-0.16	-0.10
Presence of Transportation Issues	0.00	0.00	N/A	-0.38	-0.22
No Response to Utilities Questions	0.00	0.00	N/A	0.10	0.05
Presence of Utilities Issues	0.28	0.00	N/A	0.43	0.31
No Response to Education Questions	-0.47	-0.45	N/A	-0.43	-0.44
No High School Diploma	0.00	0.00	N/A	-0.12	-0.11
No Response to Income Questions	-0.09	0.00	N/A	-0.09	-0.02
Percent of FPL	-0.03	0.00	N/A	0.00	0.00
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	N/A	0.00	0.00	N/A	0.00
B14001_Enrolled_in_nursery_school_preschool	N/A	0.00	-0.58	N/A	0.27
B14001_Enrolled_in_kindergarten	N/A	0.00	-0.86	N/A	0.00
B14001_Enrolled_in_grade_1_to_grade_4	N/A	0.00	0.00	N/A	0.00
B14001_Enrolled_in_grade_5_to_grade_8	N/A	0.00	0.00	N/A	0.00
B14001_Enrolled_in_grade_9_to_grade_12	N/A	0.00	0.91	N/A	0.00
B14001_Enrolled_in_college_undergraduate_years	N/A	0.00	0.23	N/A	0.00
B14001_Graduate_or_professional_school	N/A	0.00	0.00	N/A	0.00
B15003_No_schooling_completed	N/A	0.00	-1.54	N/A	0.10
B15003_Nursery_school	N/A	0.00	0.00	N/A	-27.16
B15003_Kindergarten	N/A	0.00	0.00	N/A	0.00
B15003_1st_grade	N/A	0.00	1.25	N/A	0.00
B15003_2nd_grade	N/A	0.00	0.00	N/A	0.00
B15003_3rd_grade	N/A	0.00	0.00	N/A	0.00
B15003_4th_grade	N/A	0.00	-4.15	N/A	1.32
B15003_5th_grade	N/A	0.00	-1.12	N/A	0.00
B15003_6th_grade	N/A	0.00	0.00	N/A	0.00

Model Type:

Response Variable:

Explanatory Variables:	Logistic Elastic Net Regression Hypertension Screening (Survey) Data	Logistic Elastic Net Regression Hypertension Screening and Census	Logistic Elastic Net Regression Hypertension Census Data	Logistic Elastic Net Regression Diabetes Screening (Survey) Data	Logistic Elastic Net Regression Diabetes Screening and Census
B15003_7th_grade	N/A	0.00	0.59	N/A	0.00
B15003_8th_grade	N/A	0.00	0.00	N/A	0.82
B15003_9th_grade	N/A	0.00	-1.22	N/A	0.00
B15003_10th_grade	N/A	1.53	0.00	N/A	1.17
B15003_11th_grade	N/A	0.00	0.00	N/A	0.00
B15003_12th_grade_no_diploma	N/A	0.00	0.40	N/A	0.69
B15003_Regular_high_school_diploma	N/A	0.00	1.32	N/A	0.00
B15003_GED_or_alternative_credential	N/A	0.00	2.86	N/A	1.37
B15003_Some_college_less_than_1_year	N/A	0.00	0.17	N/A	0.00
B15003_Some_college_1_or_more_years_no_degree	N/A	0.00	1.14	N/A	0.00
B15003_Associates_degree	N/A	0.00	0.00	N/A	0.87
B15003_Bachelors_degree	N/A	0.00	0.00	N/A	-0.21
B15003_Masters_degree	N/A	-0.26	0.00	N/A	-1.20
B15003_Professional_school_degree	N/A	0.00	-2.13	N/A	-0.21
B15003_Doctorate_degree	N/A	-1.26	0.00	N/A	-1.39
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-ε	N/A	0.00	0.00	N/A	0.00
B23025_In_Civilian_labor_force_Employed	N/A	0.00	-0.01	N/A	0.00
B23025_In_Civilian_labor_force_Unemployed	N/A	0.00	0.09	N/A	2.25
B23025_In_labor_force_Armed_Forces	N/A	0.00	0.00	N/A	0.00
B23025_Not_in_labor_force	N/A	0.00	0.00	N/A	-0.55
B25002_Vacant	N/A	0.00	-0.31	N/A	0.00
B25014_Total_Owner_occupied	N/A	0.00	0.00	N/A	0.00
B25014_Owener_occupied_-_050_or_less_occupants_per_room	N/A	0.18	0.03	N/A	0.14
B25014_Owener_occupied_-_051_to_100_occupants_per_room	N/A	0.00	-0.24	N/A	-0.51
B25014_Owener_occupied_-_101_to_150_occupants_per_room	N/A	0.00	0.00	N/A	-0.04
B25014_Owener_occupied_-_151_to_200_occupants_per_room	N/A	0.00	0.27	N/A	0.00
B25014_Owener_occupied_-_201_or_more_occupants_per_room	N/A	0.00	-4.78	N/A	0.00
B25014_Renter_occupied_-_050_or_less_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Renter_occupied_-_051_to_100_occupants_per_room	N/A	0.03	0.00	N/A	0.47
B25014_Renter_occupied_-_101_to_150_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Renter_occupied_-_151_to_200_occupants_per_room	N/A	0.00	0.00	N/A	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	N/A	0.00	1.04	N/A	-0.95
B25040_Utility_gas	N/A	0.00	0.00	N/A	0.00
B25040_Bottled_tank_or_LP_gas	N/A	0.00	0.00	N/A	0.00
B25040_Electricity	N/A	0.00	0.00	N/A	0.00

Model Type:

Response Variable:	Logistic Elastic Net Regression Hypertension Screening (Survey) Data	Logistic Elastic Net Regression Hypertension Screening and Census	Logistic Elastic Net Regression Hypertension Census Data	Logistic Elastic Net Regression Diabetes Screening (Survey) Data	Logistic Elastic Net Regression Diabetes Screening and Census
Explanatory Variables:					
B25040_Fuel_oil_kerosene_etc	N/A	0.00	0.00	N/A	0.00
B25040_Coal_or_coke	N/A	0.00	0.00	N/A	0.00
B25040_Wood	N/A	0.00	0.45	N/A	0.00
B25040_Solar_energy	N/A	-2.36	-0.42	N/A	0.00
B25040_Other_fuel	N/A	0.00	0.00	N/A	0.00
B25040_No_fuel_used	N/A	0.00	-0.87	N/A	1.38
B25048_Complete_plumbing_facilities	N/A	0.00	0.00	N/A	-0.78
B25052_Complete_kitchen_facilities	N/A	0.00	-0.10	N/A	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	N/A	0.00	0.00	N/A	0.00
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	N/A	0.00	0.00	N/A	0.00
B28003_Has_a_computer_-_Without_an_Internet_subscription	N/A	0.00	0.24	N/A	0.00
B28003_No_computer	N/A	0.00	-0.51	N/A	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	N/A	0.00	0.00	N/A	0.00
C24050_Construction	N/A	0.00	0.00	N/A	-0.32
C24050_Manufacturing	N/A	0.00	0.80	N/A	0.00
C24050_Wholesale_trade	N/A	0.00	0.40	N/A	0.00
C24050_Retail_trade	N/A	0.48	1.49	N/A	0.28
C24050_Transportation_and_warehousing_and_utilities	N/A	0.00	0.00	N/A	0.00
C24050_Information	N/A	0.00	0.00	N/A	0.00
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	N/A	0.00	-1.84	N/A	0.00
C24050_Professional_scientific_and_management_and_administrative_and_waste	N/A	0.00	0.00	N/A	0.00
C24050_Educational_services_and_health_care_and_social_assistance	N/A	0.00	0.00	N/A	0.00
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	N/A	0.00	0.00	N/A	0.00
C24050_Other_services_except_public_administration	N/A	0.00	0.51	N/A	0.10
B07204_Same_house_1_year_ago	N/A	0.00	-0.19	N/A	-0.07
B07204_Different_house_in_United_States_1_year_ago	N/A	0.00	0.05	N/A	0.00
B07204_Abroad_1_year_ago	N/A	0.00	2.66	N/A	0.00
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	N/A	0.00	-0.21	N/A	0.00
B25017_1_room	N/A	0.00	-0.70	N/A	0.00
B25017_2_rooms	N/A	0.00	0.00	N/A	0.41
B25017_3_rooms	N/A	0.00	0.00	N/A	0.00
B25017_4_rooms	N/A	0.00	0.00	N/A	-0.02
B25017_5_rooms	N/A	0.00	0.00	N/A	0.00
B25017_6_rooms	N/A	0.00	0.00	N/A	-0.02
B25017_7_rooms	N/A	0.00	0.00	N/A	0.00

Model Type:

Response Variable:	Logistic Elastic Net Regression Hypertension Screening (Survey) Data	Logistic Elastic Net Regression Hypertension Screening and Census	Logistic Elastic Net Regression Hypertension Census Data	Logistic Elastic Net Regression Diabetes Screening (Survey) Data	Logistic Elastic Net Regression Diabetes Screening and Census
Explanatory Variables:					
B25017_8_rooms	N/A	0.23	0.34	N/A	0.66
B25017_9_or_more_rooms	N/A	0.00	0.00	N/A	0.00
B25043_With_telephone_service_available	N/A	0.00	-0.30	N/A	0.00
B25024_1_detached	N/A	0.00	0.00	N/A	0.00
B25024_1_attached	N/A	0.00	0.00	N/A	0.00
B25024_2	N/A	0.00	-0.50	N/A	0.00
B25024_3_or_4	N/A	0.00	0.00	N/A	-0.34
B25024_5_to_9	N/A	0.00	0.00	N/A	-0.39
B25024_10_to_19	N/A	0.00	0.00	N/A	0.00
B25024_20_to_49	N/A	0.00	0.00	N/A	0.11
B25024_50_or_more	N/A	0.00	-0.37	N/A	0.00
B25024_Mobile_home	N/A	0.00	0.00	N/A	0.00
B25024_Boat_RV_van_etc	N/A	-0.09	0.00	N/A	0.00
B25075_Less_than_10000	N/A	0.00	0.00	N/A	0.01
B25075_10000_to_14999	N/A	0.00	0.00	N/A	1.45
B25075_15000_to_19999	N/A	0.00	0.00	N/A	0.00
B25075_20000_to_24999	N/A	0.00	0.00	N/A	0.77
B25075_25000_to_29999	N/A	0.00	0.00	N/A	0.00
B25075_30000_to_34999	N/A	0.00	0.00	N/A	0.25
B25075_35000_to_39999	N/A	0.00	1.20	N/A	-1.68
B25075_40000_to_49999	N/A	0.00	0.00	N/A	1.11
B25075_50000_to_59999	N/A	0.00	0.59	N/A	0.00
B25075_60000_to_69999	N/A	0.00	0.00	N/A	0.00
B25075_70000_to_79999	N/A	0.00	0.41	N/A	1.53
B25075_80000_to_89999	N/A	0.00	0.00	N/A	0.76
B25075_90000_to_99999	N/A	0.00	0.01	N/A	-1.21
B25075_100000_to_124999	N/A	0.00	0.00	N/A	-0.07
B25075_125000_to_149999	N/A	0.00	0.00	N/A	-0.08
B25075_150000_to_174999	N/A	0.00	0.00	N/A	0.00
B25075_175000_to_199999	N/A	0.00	0.00	N/A	0.00
B25075_200000_to_249999	N/A	0.00	0.00	N/A	0.05
B25075_250000_to_299999	N/A	0.00	-0.03	N/A	0.00
B25075_300000_to_399999	N/A	0.00	0.00	N/A	0.00
B25075_400000_to_499999	N/A	0.00	0.03	N/A	0.00
B25075_500000_to_749999	N/A	0.00	0.00	N/A	0.00

Model Type:

Response Variable:	Logistic Elastic Net Regression Hypertension Screening (Survey) Data	Logistic Elastic Net Regression Hypertension Screening and Census	Logistic Elastic Net Regression Hypertension Census Data	Logistic Elastic Net Regression Diabetes Screening (Survey) Data	Logistic Elastic Net Regression Diabetes Screening and Census
Explanatory Variables:					
B25075_750000_to_999999	N/A	0.00	0.00	N/A	-0.34
B25075_1000000_to_1499999	N/A	-2.03	0.00	N/A	-1.58
B25075_1500000_to_1999999	N/A	0.00	0.00	N/A	0.00
B25075_2000000_or_more	N/A	0.00	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_2015_or_later	N/A	0.00	-0.21	N/A	0.00
B25038_Owner_occupied_Moved_in_2010_to_2014	N/A	0.00	0.00	N/A	-0.45
B25038_Owner_occupied_Moved_in_2000_to_2009	N/A	0.00	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_1990_to_1999	N/A	0.00	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_1980_to_1989	N/A	0.00	0.00	N/A	0.00
B25038_Owner_occupied_Moved_in_1979_or_earlier	N/A	0.00	0.15	N/A	0.00
B25038_Renter_occupied_Moved_in_2015_or_later	N/A	0.00	0.00	N/A	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	N/A	0.00	0.00	N/A	0.05
B25038_Renter_occupied_Moved_in_2000_to_2009	N/A	0.00	-0.38	N/A	-0.76
B25038_Renter_occupied_Moved_in_1990_to_1999	N/A	0.00	-0.02	N/A	0.00
B25038_Renter_occupied_Moved_in_1980_to_1989	N/A	0.00	-2.55	N/A	8.00
B25038_Renter_occupied_Moved_in_1979_or_earlier	N/A	0.00	-6.74	N/A	2.85
B25034_Built_2014_or_later	N/A	0.00	0.00	N/A	0.00
B25034_Built_2010_to_2013	N/A	-0.33	0.00	N/A	0.09
B25034_Built_2000_to_2009	N/A	0.00	0.00	N/A	-0.01
B25034_Built_1990_to_1999	N/A	0.00	0.12	N/A	0.18
B25034_Built_1980_to_1989	N/A	0.00	0.00	N/A	0.02
B25034_Built_1970_to_1979	N/A	0.00	0.14	N/A	0.00
B25034_Built_1960_to_1969	N/A	0.00	0.00	N/A	0.00
B25034_Built_1950_to_1959	N/A	0.00	0.00	N/A	0.00
B25034_Built_1940_to_1949	N/A	0.00	-0.68	N/A	-0.38
B25034_Built_1939_or_earlier	N/A	0.00	-1.01	N/A	-0.34

Model Type:

Response Variable:	Logistic Elastic Net Regression: Diabetes	Logistic Elastic Net Regression Depression Screening (Survey) Data	Logistic Elastic Net Regression Depression Screening and Census	Logistic Elastic Net Regression Depression Census Data	Logistic Elastic Net Regression >1 Admits Screening (Survey) Data
Explanatory Variables:	Census Data				
Intercept	-4.14	-1.80	-1.81	-2.87	-5.32
Patient_Age	0.06	0.03	0.03	0.03	0.03
Gender Male	0.00	-0.55	-0.68	-0.62	-0.03
Number of Medicare Dual Eligible Months	0.01	-0.02	-0.03	-0.07	0.00
No Response to Housing Questions	N/A	0.00	0.00	N/A	-0.36
Presence of Housing Issues	N/A	0.67	0.57	N/A	0.00
No Response Food Questions	N/A	0.04	0.00	N/A	0.00
Presence of Food Insecurity	N/A	0.00	0.00	N/A	-0.18
No Response to Safety Questions	N/A	0.00	0.00	N/A	0.25
Presence of Safety Issues	N/A	0.05	0.26	N/A	0.00
No Response to Transportation Questions	N/A	0.00	0.00	N/A	0.00
Presence of Transportation Issues	N/A	0.00	0.00	N/A	0.00
No Response to Utilities Questions	N/A	0.00	0.04	N/A	0.00
Presence of Utilities Issues	N/A	0.00	0.00	N/A	0.00
No Response to Education Questions	N/A	-0.22	-0.28	N/A	-0.47
No High School Diploma	N/A	-0.21	-0.15	N/A	0.04
No Response to Income Questions	N/A	-0.15	-0.11	N/A	0.12
Percent of FPL	N/A	0.00	0.00	N/A	-0.30
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	0.00	N/A	0.00	0.00	N/A
B14001_Enrolled_in_nursery_school_preschool	0.00	N/A	0.00	-0.73	N/A
B14001_Enrolled_in_kindergarten	2.09	N/A	-2.30	-3.04	N/A
B14001_Enrolled_in_grade_1_to_grade_4	0.00	N/A	-0.16	0.00	N/A
B14001_Enrolled_in_grade_5_to_grade_8	0.00	N/A	-2.50	0.00	N/A
B14001_Enrolled_in_grade_9_to_grade_12	0.11	N/A	-0.25	0.36	N/A
B14001_Enrolled_in_college_undergraduate_years	0.00	N/A	0.25	0.56	N/A
B14001_Graduate_or_professional_school	0.00	N/A	0.00	0.00	N/A
B15003_No_schooling_completed	1.34	N/A	0.00	-1.44	N/A
B15003_Nursery_school	0.00	N/A	-73.51	-11.41	N/A
B15003_Kindergarten	1.82	N/A	0.00	-2.45	N/A
B15003_1st_grade	0.00	N/A	0.00	0.00	N/A
B15003_2nd_grade	5.07	N/A	0.00	0.00	N/A
B15003_3rd_grade	0.00	N/A	0.00	0.00	N/A
B15003_4th_grade	2.87	N/A	-3.33	-0.73	N/A
B15003_5th_grade	0.32	N/A	-0.99	0.00	N/A
B15003_6th_grade	0.00	N/A	0.00	-0.55	N/A

Model Type: Logistic Elastic Net Regression

Response Variable:

Explanatory Variables:	Diabetes — Census Data	Depression Screening (Survey) Data	Depression Screening and Census	Depression — Census Data	>1 Admits Screening (Survey) Data
B15003_7th_grade	0.00	N/A	0.00	0.00	N/A
B15003_8th_grade	0.59	N/A	1.86	0.00	N/A
B15003_9th_grade	0.00	N/A	0.00	0.00	N/A
B15003_10th_grade	0.00	N/A	0.00	0.00	N/A
B15003_11th_grade	0.00	N/A	0.00	0.00	N/A
B15003_12th_grade_no_diploma	0.11	N/A	0.00	0.00	N/A
B15003_Regular_high_school_diploma	0.00	N/A	-0.66	0.00	N/A
B15003_GED_or_alternative_credential	0.00	N/A	0.95	0.66	N/A
B15003_Some_college_less_than_1_year	-1.12	N/A	0.00	2.02	N/A
B15003_Some_college_1_or_more_years_no_degree	-0.08	N/A	-1.32	0.00	N/A
B15003_Associates_degree	0.00	N/A	0.00	0.00	N/A
B15003_Bachelors_degree	0.00	N/A	0.00	0.00	N/A
B15003_Masters_degree	-0.69	N/A	0.00	0.00	N/A
B15003_Professional_school_degree	0.71	N/A	0.00	-2.29	N/A
B15003_Doctorate_degree	-3.84	N/A	0.28	4.30	N/A
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	N/A	0.00	0.00	N/A
B23025_In_Civilian_labor_force_Employed	0.00	N/A	0.00	0.00	N/A
B23025_In_Civilian_labor_force_Unemployed	0.00	N/A	-0.66	0.00	N/A
B23025_In_labor_force_Armed_Forces	-1.44	N/A	-3.70	-1.69	N/A
B23025_Not_in_labor_force	0.00	N/A	0.00	0.00	N/A
B25002_Vacant	-0.10	N/A	0.00	0.00	N/A
B25014_Total_Owner_occupied	0.00	N/A	0.00	0.00	N/A
B25014_Owener_occupied_-_050_or_less_occupants_per_room	0.00	N/A	0.38	0.35	N/A
B25014_Owener_occupied_-_051_to_100_occupants_per_room	0.00	N/A	-0.18	-0.44	N/A
B25014_Owener_occupied_-_101_to_150_occupants_per_room	-0.25	N/A	0.00	0.00	N/A
B25014_Owener_occupied_-_151_to_200_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Owener_occupied_-_201_or_more_occupants_per_room	3.12	N/A	-1.09	-2.58	N/A
B25014_Renter_occupied_-_050_or_less_occupants_per_room	0.00	N/A	0.25	0.13	N/A
B25014_Renter_occupied_-_051_to_100_occupants_per_room	0.00	N/A	0.00	0.00	N/A
B25014_Renter_occupied_-_101_to_150_occupants_per_room	0.00	N/A	-0.45	0.00	N/A
B25014_Renter_occupied_-_151_to_200_occupants_per_room	0.43	N/A	-0.23	-0.23	N/A
B25014_Renter_occupied_-_201_or_more_occupants_per_room	0.25	N/A	0.00	-1.36	N/A
B25040_Utility_gas	0.00	N/A	0.00	0.00	N/A
B25040_Bottled_tank_or_LP_gas	0.00	N/A	0.00	0.00	N/A
B25040_Electricity	0.00	N/A	0.00	-0.03	N/A

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Diabetes	Depression Screening (Survey) Data	Depression Screening and Census	Depression	>1 Admits Screening (Survey) Data
Explanatory Variables:	Census Data		Census	Census Data	
B25040_Fuel_oil_kerosene_etc	0.00	N/A	0.00	0.00	N/A
B25040_Coal_or_coke	0.00	N/A	0.00	0.00	N/A
B25040_Wood	-1.01	N/A	0.00	0.00	N/A
B25040_Solar_energy	0.00	N/A	0.00	0.00	N/A
B25040_Other_fuel	0.00	N/A	0.00	-1.19	N/A
B25040_No_fuel_used	0.47	N/A	0.00	0.00	N/A
B25048_Complete_plumbing_facilities	0.00	N/A	0.68	0.00	N/A
B25052_Complete_kitchen_facilities	0.00	N/A	0.00	-0.09	N/A
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	0.00	N/A	0.00	0.00	N/A
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	0.00	N/A	0.00	0.00	N/A
B28003_Has_a_computer_-_Without_an_Internet_subscription	0.00	N/A	0.00	0.00	N/A
B28003_No_computer	0.16	N/A	0.00	0.00	N/A
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	0.00	N/A	0.00	0.00	N/A
C24050_Construction	0.00	N/A	0.00	0.00	N/A
C24050_Manufacturing	-1.92	N/A	3.41	2.53	N/A
C24050_Wholesale_trade	0.00	N/A	0.00	0.00	N/A
C24050_Retail_trade	-0.42	N/A	2.16	2.27	N/A
C24050_Transportation_and_warehousing_and_utilities	1.05	N/A	-0.40	-0.93	N/A
C24050_Information	0.00	N/A	1.00	0.00	N/A
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	1.52	N/A	-0.25	-2.88	N/A
C24050_Professional_scientific_and_management_and_administrative_and_waste	0.00	N/A	0.00	-0.18	N/A
C24050_Educational_services_and_health_care_and_social_assistance	0.15	N/A	0.00	0.00	N/A
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	0.00	N/A	0.00	0.01	N/A
C24050_Other_services_except_public_administration	0.07	N/A	0.00	0.00	N/A
B07204_Same_house_1_year_ago	0.00	N/A	0.00	0.00	N/A
B07204_Different_house_in_United_States_1_year_ago	0.00	N/A	0.00	0.00	N/A
B07204_Abroad_1_year_ago	0.00	N/A	0.00	0.00	N/A
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	0.00	N/A	-0.50	-0.39	N/A
B25017_1_room	-0.21	N/A	0.72	0.00	N/A
B25017_2_rooms	0.00	N/A	0.00	0.00	N/A
B25017_3_rooms	0.00	N/A	0.00	-0.12	N/A
B25017_4_rooms	0.00	N/A	0.00	0.00	N/A
B25017_5_rooms	0.02	N/A	0.00	0.00	N/A
B25017_6_rooms	0.00	N/A	0.00	0.00	N/A
B25017_7_rooms	0.00	N/A	0.00	0.00	N/A

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Diabetes	Depression Screening (Survey) Data	Depression Screening and Census	Depression	> 1 Admits Screening (Survey) Data
Explanatory Variables:	Census Data		Census	Census Data	
B25017_8_rooms	0.00	N/A	0.00	0.00	N/A
B25017_9_or_more_rooms	0.00	N/A	0.00	0.00	N/A
B25043_With_telephone_service_available	0.00	N/A	-1.03	-0.07	N/A
B25024_1_detached	0.00	N/A	0.00	0.00	N/A
B25024_1_attached	0.00	N/A	-0.31	-0.14	N/A
B25024_2	0.86	N/A	0.00	-0.26	N/A
B25024_3_or_4	0.00	N/A	0.00	0.00	N/A
B25024_5_to_9	-0.31	N/A	0.00	0.67	N/A
B25024_10_to_19	0.00	N/A	0.00	0.00	N/A
B25024_20_to_49	0.00	N/A	0.00	0.00	N/A
B25024_50_or_more	0.00	N/A	0.00	-0.08	N/A
B25024_Mobile_home	0.00	N/A	0.00	0.00	N/A
B25024_Boat_RV_van_etc	0.00	N/A	0.00	0.00	N/A
B25075_Less_than_10000	0.00	N/A	1.80	0.84	N/A
B25075_10000_to_14999	0.00	N/A	0.00	0.00	N/A
B25075_15000_to_19999	-0.31	N/A	1.38	0.00	N/A
B25075_20000_to_24999	0.00	N/A	0.00	0.00	N/A
B25075_25000_to_29999	0.00	N/A	0.00	-0.11	N/A
B25075_30000_to_34999	0.00	N/A	0.00	0.00	N/A
B25075_35000_to_39999	-1.58	N/A	0.00	0.00	N/A
B25075_40000_to_49999	0.00	N/A	-1.74	0.00	N/A
B25075_50000_to_59999	0.00	N/A	0.00	0.00	N/A
B25075_60000_to_69999	0.00	N/A	0.00	0.00	N/A
B25075_70000_to_79999	0.35	N/A	0.00	-0.01	N/A
B25075_80000_to_89999	0.41	N/A	0.00	0.00	N/A
B25075_90000_to_99999	0.00	N/A	-0.64	-1.96	N/A
B25075_100000_to_124999	0.00	N/A	0.00	0.00	N/A
B25075_125000_to_149999	0.00	N/A	0.00	0.00	N/A
B25075_150000_to_174999	0.00	N/A	-0.49	-0.21	N/A
B25075_175000_to_199999	0.00	N/A	0.00	-0.22	N/A
B25075_200000_to_249999	0.34	N/A	0.00	-0.10	N/A
B25075_250000_to_299999	0.00	N/A	0.00	0.00	N/A
B25075_300000_to_399999	0.34	N/A	0.09	0.16	N/A
B25075_400000_to_499999	0.00	N/A	0.00	0.00	N/A
B25075_500000_to_749999	0.00	N/A	0.00	0.06	N/A

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	Diabetes	Depression Screening (Survey) Data	Depression Screening and Census	Depression	> 1 Admits Screening (Survey) Data
Explanatory Variables:	Census Data		Census	Census Data	
B25075_750000_to_999999	-0.24	N/A	0.12	0.00	N/A
B25075_1000000_to_1499999	-1.30	N/A	0.00	0.00	N/A
B25075_1500000_to_1999999	0.00	N/A	-0.41	0.00	N/A
B25075_2000000_or_more	-1.08	N/A	0.00	0.68	N/A
B25038_Owner_occupied_Moved_in_2015_or_later	0.00	N/A	0.00	-0.67	N/A
B25038_Owner_occupied_Moved_in_2010_to_2014	-0.03	N/A	0.00	0.00	N/A
B25038_Owner_occupied_Moved_in_2000_to_2009	0.00	N/A	0.00	0.00	N/A
B25038_Owner_occupied_Moved_in_1990_to_1999	0.00	N/A	0.00	0.25	N/A
B25038_Owner_occupied_Moved_in_1980_to_1989	-0.40	N/A	0.00	1.03	N/A
B25038_Owner_occupied_Moved_in_1979_or_earlier	0.00	N/A	0.15	0.00	N/A
B25038_Renter_occupied_Moved_in_2015_or_later	-0.24	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_2010_to_2014	0.01	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_2000_to_2009	0.21	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_1990_to_1999	0.00	N/A	0.00	0.00	N/A
B25038_Renter_occupied_Moved_in_1980_to_1989	0.00	N/A	0.00	-1.31	N/A
B25038_Renter_occupied_Moved_in_1979_or_earlier	0.00	N/A	-3.38	0.00	N/A
B25034_Built_2014_or_later	0.00	N/A	0.00	0.00	N/A
B25034_Built_2010_to_2013	0.00	N/A	0.00	0.00	N/A
B25034_Built_2000_to_2009	0.00	N/A	0.00	0.00	N/A
B25034_Built_1990_to_1999	0.00	N/A	0.00	0.00	N/A
B25034_Built_1980_to_1989	0.00	N/A	0.00	0.00	N/A
B25034_Built_1970_to_1979	-0.02	N/A	0.00	0.04	N/A
B25034_Built_1960_to_1969	0.00	N/A	0.00	0.00	N/A
B25034_Built_1950_to_1959	0.00	N/A	0.00	0.00	N/A
B25034_Built_1940_to_1949	0.20	N/A	0.00	-0.45	N/A
B25034_Built_1939_or_earlier	0.00	N/A	0.00	-0.46	N/A

Model Type:

	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	> 1 Admits Screening and Census	> 1 Admits	> 1 ER Screening	> 1 ER Screening and Census	> 1 ER
Explanatory Variables:	Census	Census Data	(Survey) Data	Census	Census Data
Intercept	-4.84	-5.90	-1.22	-2.46	-3.28
Patient_Age	0.02	0.02	0.00	0.00	0.01
Gender Male	0.00	-0.02	-0.24	-0.17	-0.30
Number of Medicare Dual Eligible Months	0.00	0.09	-0.01	0.00	-0.01
No Response to Housing Questions	-0.21	N/A	-0.55	-0.13	N/A
Presence of Housing Issues	0.00	N/A	0.46	0.42	N/A
No Response Food Questions	0.00	N/A	0.00	0.00	N/A
Presence of Food Insecurity	0.00	N/A	-0.15	-0.01	N/A
No Response to Safety Questions	0.00	N/A	0.40	0.13	N/A
Presence of Safety Issues	0.00	N/A	0.07	0.00	N/A
No Response to Transportation Questions	-0.01	N/A	0.00	0.00	N/A
Presence of Transportation Issues	0.00	N/A	0.43	0.26	N/A
No Response to Utilities Questions	0.00	N/A	0.29	0.01	N/A
Presence of Utilities Issues	0.00	N/A	0.14	0.00	N/A
No Response to Education Questions	-0.36	N/A	-0.43	-0.29	N/A
No High School Diploma	0.09	N/A	-0.05	0.00	N/A
No Response to Income Questions	0.00	N/A	-0.13	-0.06	N/A
Percent of FPL	-0.12	N/A	-0.23	-0.14	N/A
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	0.03	0.00	N/A	0.00	0.00
B14001_Enrolled_in_nursery_school_preschool	0.00	0.00	N/A	0.00	0.00
B14001_Enrolled_in_kindergarten	0.00	0.00	N/A	-0.32	-0.20
B14001_Enrolled_in_grade_1_to_grade_4	0.00	0.00	N/A	0.00	0.00
B14001_Enrolled_in_grade_5_to_grade_8	0.00	0.00	N/A	0.00	0.26
B14001_Enrolled_in_grade_9_to_grade_12	0.00	0.00	N/A	0.00	-1.18
B14001_Enrolled_in_college_undergraduate_years	0.00	0.00	N/A	0.00	0.00
B14001_Graduate_or_professional_school	0.62	0.00	N/A	0.00	0.00
B15003_No_schooling_completed	0.00	0.00	N/A	0.00	-0.36
B15003_Nursery_school	11.66	0.00	N/A	0.00	-10.24
B15003_Kindergarten	0.00	14.44	N/A	0.00	8.45
B15003_1st_grade	0.00	0.00	N/A	0.00	0.00
B15003_2nd_grade	0.00	0.00	N/A	0.00	1.32
B15003_3rd_grade	0.00	0.00	N/A	-2.56	0.00
B15003_4th_grade	0.00	0.00	N/A	-1.88	-1.47
B15003_5th_grade	0.00	0.00	N/A	0.00	2.09
B15003_6th_grade	0.00	0.00	N/A	0.00	0.42

Model Type:

Explanatory Variables:	Logistic Elastic Net Regression > 1 Admits Screening and Census / Census	Logistic Elastic Net Regression > 1 Admits / Census Data	Logistic Elastic Net Regression > 1 ER Screening (Survey) Data	Logistic Elastic Net Regression > 1 ER Screening and Census / Census	Logistic Elastic Net Regression > 1 ER / Census Data
B15003_7th_grade	0.00	0.00	N/A	0.00	0.00
B15003_8th_grade	0.00	0.00	N/A	0.49	0.00
B15003_9th_grade	0.00	0.00	N/A	-0.21	-0.09
B15003_10th_grade	0.00	0.00	N/A	0.00	0.26
B15003_11th_grade	0.00	0.00	N/A	0.00	0.01
B15003_12th_grade_no_diploma	0.00	0.00	N/A	0.23	0.47
B15003_Regular_high_school_diploma	0.00	0.44	N/A	0.00	0.46
B15003_GED_or_alternative_credential	0.00	0.00	N/A	0.00	0.65
B15003_Some_college_less_than_1_year	0.00	0.00	N/A	0.50	-1.00
B15003_Some_college_1_or_more_years_no_degree	0.00	0.66	N/A	0.00	1.24
B15003_Associates_degree	0.66	0.00	N/A	0.94	-0.22
B15003_Bachelors_degree	0.00	0.00	N/A	0.00	0.00
B15003_Masters_degree	0.00	-0.22	N/A	0.00	-1.30
B15003_Professional_school_degree	0.00	0.00	N/A	0.00	2.29
B15003_Doctorate_degree	0.00	0.00	N/A	0.00	-1.01
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	0.00	N/A	0.00	0.00
B23025_In_Civilian_labor_force_Employed	0.00	-0.10	N/A	0.00	0.00
B23025_In_Civilian_labor_force_Unemployed	0.00	0.00	N/A	0.00	0.32
B23025_In_labor_force_Armed_Forces	0.00	0.00	N/A	0.00	-1.19
B23025_Not_in_labor_force	0.00	0.27	N/A	0.00	-0.12
B25002_Vacant	0.00	0.00	N/A	0.00	-0.20
B25014_Total_Owner_occupied	0.00	0.00	N/A	0.00	0.00
B25014_Owner_occupied_-_050_or_less_occupants_per_room	0.00	0.00	N/A	0.00	0.32
B25014_Owner_occupied_-_051_to_100_occupants_per_room	0.00	0.00	N/A	0.00	0.00
B25014_Owner_occupied_-_101_to_150_occupants_per_room	0.00	0.00	N/A	0.05	0.58
B25014_Owner_occupied_-_151_to_200_occupants_per_room	0.00	0.00	N/A	0.00	2.39
B25014_Owner_occupied_-_201_or_more_occupants_per_room	0.00	0.00	N/A	0.00	-1.21
B25014_Renter_occupied_-_050_or_less_occupants_per_room	0.00	0.00	N/A	0.00	0.00
B25014_Renter_occupied_-_051_to_100_occupants_per_room	0.00	0.00	N/A	0.00	0.00
B25014_Renter_occupied_-_101_to_150_occupants_per_room	0.00	0.00	N/A	0.00	0.41
B25014_Renter_occupied_-_151_to_200_occupants_per_room	0.00	0.00	N/A	0.00	1.33
B25014_Renter_occupied_-_201_or_more_occupants_per_room	0.00	0.00	N/A	0.00	-1.25
B25040_Utility_gas	0.00	0.00	N/A	-0.03	0.12
B25040_Bottled_tank_or_LP_gas	0.00	0.00	N/A	0.00	-0.25
B25040_Electricity	0.00	0.00	N/A	0.00	0.00

Model Type: Logistic Elastic Net Regression

Explanatory Variables:	> 1 Admits Screening and Census — Census	> 1 Admits Census Data	> 1 ER Screening (Survey) Data	> 1 ER Screening and Census — Census	> 1 ER Census Data
B25040_Fuel_oil_kerosene_etc	0.00	0.00	N/A	0.00	-2.04
B25040_Coal_or_coke	25.13	36.61	N/A	0.00	0.00
B25040_Wood	0.00	0.00	N/A	0.00	0.00
B25040_Solar_energy	0.00	0.00	N/A	0.00	2.91
B25040_Other_fuel	0.00	0.00	N/A	0.00	-0.81
B25040_No_fuel_used	0.00	0.00	N/A	0.00	-3.57
B25048_Complete_plumbing_facilities	0.00	0.00	N/A	1.42	1.30
B25052_Complete_kitchen_facilities	0.00	0.00	N/A	0.00	-0.62
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	0.00	0.00	N/A	0.81	0.00
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	0.00	0.00	N/A	0.00	-0.05
B28003_Has_a_computer_-_Without_an_Internet_subscription	0.00	0.00	N/A	0.00	0.23
B28003_No_computer	0.00	0.00	N/A	0.00	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	0.00	0.00	N/A	0.00	0.00
C24050_Construction	0.00	0.00	N/A	0.00	0.00
C24050_Manufacturing	0.16	0.00	N/A	0.00	-0.66
C24050_Wholesale_trade	0.00	0.00	N/A	0.22	0.52
C24050_Retail_trade	0.00	0.00	N/A	0.16	0.45
C24050_Transportation_and_warehousing_and_utilities	0.00	0.00	N/A	0.00	1.03
C24050_Information	0.00	0.00	N/A	-0.84	-0.92
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	0.00	0.00	N/A	-1.80	0.00
C24050_Professional_scientific_and_management_and_administrative_and_waste	0.00	0.00	N/A	-0.18	0.00
C24050_Educational_services_and_health_care_and_social_assistance	0.00	0.00	N/A	0.00	1.20
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	0.00	0.00	N/A	0.00	-0.29
C24050_Other_services_except_public_administration	0.00	0.00	N/A	0.00	-0.41
B07204_Same_house_1_year_ago	0.00	0.00	N/A	-0.22	-0.27
B07204_Different_house_in_United_States_1_year_ago	0.00	0.00	N/A	0.10	0.26
B07204_Abroad_1_year_ago	0.00	0.00	N/A	0.19	0.00
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	0.00	0.00	N/A	0.00	0.18
B25017_1_room	1.56	0.00	N/A	0.00	0.37
B25017_2_rooms	0.00	0.00	N/A	0.00	0.49
B25017_3_rooms	0.00	0.00	N/A	0.00	0.00
B25017_4_rooms	0.00	0.00	N/A	0.00	-0.48
B25017_5_rooms	-0.20	0.00	N/A	0.00	0.00
B25017_6_rooms	0.00	0.00	N/A	-0.15	-0.09
B25017_7_rooms	0.00	0.00	N/A	0.00	-0.39

Model Type: Logistic Elastic Net Regression

Response Variable:	> 1 Admits Screening and Census	> 1 Admits	> 1 ER Screening (Survey) Data	> 1 ER Screening and Census	> 1 ER
Explanatory Variables:	Census	Census Data		Census	Census Data
B25017_8_rooms	0.00	0.00	N/A	0.00	0.51
B25017_9_or_more_rooms	0.00	0.00	N/A	0.00	0.00
B25043_With_telephone_service_available	0.00	0.00	N/A	0.00	0.00
B25024_1_detached	0.00	0.00	N/A	0.00	0.00
B25024_1_attached	0.00	0.00	N/A	0.07	0.00
B25024_2	0.00	0.00	N/A	0.00	0.72
B25024_3_or_4	0.00	0.00	N/A	0.00	0.00
B25024_5_to_9	0.00	0.00	N/A	0.00	0.03
B25024_10_to_19	0.00	0.00	N/A	0.00	0.00
B25024_20_to_49	0.00	0.00	N/A	0.00	-0.11
B25024_50_or_more	0.00	0.00	N/A	0.00	0.00
B25024_Mobile_home	0.00	0.00	N/A	0.00	0.00
B25024_Boat_RV_van_etc	0.00	0.00	N/A	0.00	-4.21
B25075_Less_than_10000	0.00	0.00	N/A	0.00	0.00
B25075_10000_to_14999	0.00	0.00	N/A	0.00	0.93
B25075_15000_to_19999	0.00	0.00	N/A	0.00	0.00
B25075_20000_to_24999	0.00	-0.96	N/A	-0.31	0.00
B25075_25000_to_29999	0.00	0.00	N/A	0.00	0.00
B25075_30000_to_34999	0.00	0.00	N/A	0.00	-0.71
B25075_35000_to_39999	0.00	0.00	N/A	-0.21	-0.51
B25075_40000_to_49999	0.00	0.00	N/A	0.00	0.64
B25075_50000_to_59999	0.00	0.00	N/A	0.00	1.54
B25075_60000_to_69999	0.00	0.00	N/A	0.00	0.00
B25075_70000_to_79999	0.00	0.00	N/A	0.00	0.00
B25075_80000_to_89999	0.00	0.00	N/A	0.00	-0.02
B25075_90000_to_99999	0.00	0.00	N/A	0.18	-0.05
B25075_100000_to_124999	0.00	0.00	N/A	0.00	-0.90
B25075_125000_to_149999	0.00	0.00	N/A	0.20	0.17
B25075_150000_to_174999	0.00	0.00	N/A	0.00	0.25
B25075_175000_to_199999	0.00	0.00	N/A	0.00	0.06
B25075_200000_to_249999	0.00	0.05	N/A	0.00	0.00
B25075_250000_to_299999	0.00	0.11	N/A	0.00	0.00
B25075_300000_to_399999	0.00	0.16	N/A	0.00	0.00
B25075_400000_to_499999	0.00	0.00	N/A	0.00	0.00
B25075_500000_to_749999	0.00	0.00	N/A	0.00	0.00

Model Type: Logistic Elastic Net Regression

Response Variable:

Explanatory Variables:	> 1 Admits Screening and Census	> 1 Admits Census Data	> 1 ER Screening (Survey) Data	> 1 ER Screening and Census	> 1 ER Census Data
B25075_750000_to_999999	0.00	0.00	N/A	0.00	0.96
B25075_1000000_to_1499999	0.00	-0.56	N/A	0.00	-1.16
B25075_1500000_to_1999999	0.00	0.00	N/A	-2.51	-2.23
B25075_2000000_or_more	-0.24	-3.26	N/A	0.00	-1.77
B25038_Owner_occupied_Moved_in_2015_or_later	0.00	0.00	N/A	-0.05	-0.37
B25038_Owner_occupied_Moved_in_2010_to_2014	0.00	0.00	N/A	0.00	0.00
B25038_Owner_occupied_Moved_in_2000_to_2009	0.00	0.00	N/A	0.00	-0.60
B25038_Owner_occupied_Moved_in_1990_to_1999	0.00	0.00	N/A	0.00	-0.03
B25038_Owner_occupied_Moved_in_1980_to_1989	0.00	0.00	N/A	0.00	-0.33
B25038_Owner_occupied_Moved_in_1979_or_earlier	0.00	0.00	N/A	0.00	0.00
B25038_Renter_occupied_Moved_in_2015_or_later	0.00	0.00	N/A	0.00	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	0.00	0.00	N/A	0.00	0.26
B25038_Renter_occupied_Moved_in_2000_to_2009	0.00	0.00	N/A	0.00	0.00
B25038_Renter_occupied_Moved_in_1990_to_1999	0.00	0.00	N/A	0.00	0.98
B25038_Renter_occupied_Moved_in_1980_to_1989	0.00	0.00	N/A	0.00	-0.31
B25038_Renter_occupied_Moved_in_1979_or_earlier	0.00	0.00	N/A	0.00	0.00
B25034_Built_2014_or_later	0.00	0.00	N/A	0.00	0.00
B25034_Built_2010_to_2013	0.00	0.00	N/A	0.00	0.00
B25034_Built_2000_to_2009	0.00	0.00	N/A	0.00	0.06
B25034_Built_1990_to_1999	0.00	0.00	N/A	0.00	-0.14
B25034_Built_1980_to_1989	0.00	0.00	N/A	0.00	0.13
B25034_Built_1970_to_1979	0.00	0.00	N/A	0.00	0.00
B25034_Built_1960_to_1969	0.00	0.00	N/A	0.18	0.00
B25034_Built_1950_to_1959	0.00	0.00	N/A	-0.15	-0.13
B25034_Built_1940_to_1949	0.00	0.00	N/A	-0.11	0.00
B25034_Built_1939_or_earlier	0.00	-0.27	N/A	0.00	0.00

Appendix G: Research Question 4: Coefficient Summaries by Model

Model Type:	Logistic Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag
	MARA Risk Score	MARA Risk Score and Screening and Census Income Variables	MARA Risk Score and Screening and Census Education Variables	MARA Risk Score and Screening and Census Housing Variables
Explanatory Variables:				
Intercept	-3.52	-3.37	-2.74	-3.41
MARA Total Risk Score	0.30	0.26	0.07	0.28
Patient_Age	N/A	N/A	N/A	N/A
Gender_Male	N/A	N/A	N/A	N/A
Number of Medicare Dual Eligible Months	N/A	N/A	N/A	N/A
No Response to Housing Questions	N/A	N/A	N/A	-0.08
Presence of Housing Issues	N/A	N/A	N/A	0.00
No Response Food Questions	N/A	N/A	N/A	N/A
Presence of Food Insecurity	N/A	N/A	N/A	N/A
No Response to Safety Questions	N/A	N/A	N/A	N/A
Presence of Safety Issues	N/A	N/A	N/A	N/A
No Response to Transportation Questions	N/A	N/A	N/A	N/A
Presence of Transportation Issues	N/A	N/A	N/A	N/A
No Response to Utilities Questions	N/A	N/A	N/A	N/A
Presence of Utilities Issues	N/A	N/A	N/A	N/A
No Response to Education Questions	N/A	N/A	-0.01	N/A
No High School Diploma	N/A	N/A	0.00	N/A
No Response to Income Questions	N/A	0.00	N/A	N/A
Percent of FPL	N/A	0.00	N/A	N/A
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	N/A	N/A	N/A	N/A
B14001_Enrolled_in_nursery_school_preschool	N/A	N/A	0.00	N/A
B14001_Enrolled_in_kindergarten	N/A	N/A	0.00	N/A
B14001_Enrolled_in_grade_1_to_grade_4	N/A	N/A	0.00	N/A
B14001_Enrolled_in_grade_5_to_grade_8	N/A	N/A	0.00	N/A
B14001_Enrolled_in_grade_9_to_grade_12	N/A	N/A	0.00	N/A
B14001_Enrolled_in_college_undergraduate_years	N/A	N/A	0.00	N/A
B14001_Graduate_or_professional_school	N/A	N/A	0.00	N/A
B15003_No_schooling_completed	N/A	N/A	0.00	N/A
B15003_Nursery_school	N/A	0.00	0.00	N/A
B15003_Kindergarten	N/A	0.00	0.00	N/A

Model Type:

Response Variable:

Explanatory Variables:	Logistic Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Income Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Education Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Housing Variables
B15003_1st_grade	N/A	0.00	0.00	N/A
B15003_2nd_grade	N/A	0.00	0.00	N/A
B15003_3rd_grade	N/A	0.00	0.00	N/A
B15003_4th_grade	N/A	0.00	0.00	N/A
B15003_5th_grade	N/A	0.00	0.00	N/A
B15003_6th_grade	N/A	0.00	0.00	N/A
B15003_7th_grade	N/A	0.00	0.00	N/A
B15003_8th_grade	N/A	0.00	0.00	N/A
B15003_9th_grade	N/A	0.00	0.00	N/A
B15003_10th_grade	N/A	0.00	0.00	N/A
B15003_11th_grade	N/A	0.00	0.00	N/A
B15003_12th_grade_no_diploma	N/A	0.00	0.00	N/A
B15003_Regular_high_school_diploma	N/A	0.00	0.00	N/A
B15003_GED_or_alternative_credential	N/A	0.00	0.00	N/A
B15003_Some_college_less_than_1_year	N/A	0.00	0.00	N/A
B15003_Some_college_1_or_more_years_no_degree	N/A	0.00	0.00	N/A
B15003_Associates_degree	N/A	0.00	0.00	N/A
B15003_Bachelors_degree	N/A	0.00	0.00	N/A
B15003_Masters_degree	N/A	0.00	0.00	N/A
B15003_Professional_school_degree	N/A	0.00	0.00	N/A
B15003_Doctorate_degree	N/A	0.00	0.00	N/A
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-c	N/A	0.00	N/A	0.00
B23025_In_Civilian_labor_force_Employed	N/A	0.00	N/A	N/A
B23025_In_Civilian_labor_force_Unemployed	N/A	0.00	N/A	N/A
B23025_In_labor_force_Armed_Forces	N/A	0.00	N/A	N/A
B23025_Not_in_labor_force	N/A	0.00	N/A	N/A
B25002_Vacant	N/A	N/A	N/A	0.00
B25014_Total_Owner_occupied	N/A	N/A	N/A	0.00
B25014_Owner_occupied_-_050_or_less_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Owner_occupied_-_051_to_100_occupants_per_room	N/A	N/A	N/A	0.00

Model Type:

Response Variable:

Explanatory Variables:	Logistic Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag
	MARA Risk Score	MARA Risk Score and Screening and Census Income Variables	MARA Risk Score and Screening and Census Education Variables	MARA Risk Score and Screening and Census Housing Variables
B25014_Owener_occupied_-_101_to_150_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Owener_occupied_-_151_to_200_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Owener_occupied_-_201_or_more_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_050_or_less_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_051_to_100_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_101_to_150_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_151_to_200_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	N/A	N/A	N/A	0.00
B25040_Utility_gas	N/A	N/A	N/A	N/A
B25040_Bottled_tank_or_LP_gas	N/A	N/A	N/A	N/A
B25040_Electricity	N/A	N/A	N/A	N/A
B25040_Fuel_oil_kerosene_etc	N/A	N/A	N/A	N/A
B25040_Coal_or_coke	N/A	N/A	N/A	N/A
B25040_Wood	N/A	N/A	N/A	N/A
B25040_Solar_energy	N/A	N/A	N/A	N/A
B25040_Other_fuel	N/A	N/A	N/A	N/A
B25040_No_fuel_used	N/A	N/A	N/A	N/A
B25048_Complete_plumbing_facilities	N/A	N/A	N/A	0.00
B25052_Complete_kitchen_facilities	N/A	N/A	N/A	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	N/A	N/A	0.00	N/A
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	N/A	N/A	0.00	N/A
B28003_Has_a_computer_-_Without_an_Internet_subscription	N/A	N/A	0.00	N/A
B28003_No_computer	N/A	N/A	0.00	N/A
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	N/A	0.00	N/A	N/A
C24050_Construction	N/A	0.00	N/A	N/A
C24050_Manufacturing	N/A	0.00	N/A	N/A
C24050_Wholesale_trade	N/A	0.00	N/A	N/A
C24050_Retail_trade	N/A	0.00	N/A	N/A
C24050_Transportation_and_warehousing_and_utilities	N/A	0.00	N/A	N/A
C24050_Information	N/A	0.00	N/A	N/A

Explanatory Variables:	Logistic Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Income Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Education Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Housing Variables
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	N/A	0.00	N/A	N/A
C24050_Professional_scientific_and_management_and_administrative_and_waste	N/A	0.00	N/A	N/A
C24050_Educational_services_and_health_care_and_social_assistance	N/A	0.00	N/A	N/A
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	N/A	0.00	N/A	N/A
C24050_Other_services_except_public_administration	N/A	0.00	N/A	N/A
B07204_Same_house_1_year_ago	N/A	N/A	N/A	0.00
B07204_Different_house_in_United_States_1_year_ago	N/A	N/A	N/A	0.00
B07204_Abroad_1_year_ago	N/A	N/A	N/A	0.00
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	N/A	0.00	0.00	N/A
B25017_1_room	N/A	N/A	N/A	0.00
B25017_2_rooms	N/A	N/A	N/A	0.00
B25017_3_rooms	N/A	N/A	N/A	0.00
B25017_4_rooms	N/A	N/A	N/A	0.00
B25017_5_rooms	N/A	N/A	N/A	0.00
B25017_6_rooms	N/A	N/A	N/A	0.00
B25017_7_rooms	N/A	N/A	N/A	0.00
B25017_8_rooms	N/A	N/A	N/A	0.00
B25017_9_or_more_rooms	N/A	N/A	N/A	0.00
B25043_With_telephone_service_available	N/A	N/A	N/A	N/A
B25024_1_detached	N/A	N/A	N/A	0.00
B25024_1_attached	N/A	N/A	N/A	0.00
B25024_2	N/A	N/A	N/A	0.00
B25024_3_or_4	N/A	N/A	N/A	0.00
B25024_5_to_9	N/A	N/A	N/A	0.00
B25024_10_to_19	N/A	N/A	N/A	0.00
B25024_20_to_49	N/A	N/A	N/A	0.00
B25024_50_or_more	N/A	N/A	N/A	0.00
B25024_Mobile_home	N/A	N/A	N/A	0.00
B25024_Boat_RV_van_etc	N/A	N/A	N/A	0.00
B25075_Less_than_10000	N/A	0.00	0.00	0.00

Model Type:	Logistic Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag
Response Variable:	MARA Risk Score	MARA Risk Score and Screening and Census Income Variables	MARA Risk Score and Screening and Census Education Variables	MARA Risk Score and Screening and Census Housing Variables
Explanatory Variables:				
B25075_10000_to_14999	N/A	0.00	0.00	0.00
B25075_15000_to_19999	N/A	0.00	0.00	0.00
B25075_20000_to_24999	N/A	0.00	0.00	0.00
B25075_25000_to_29999	N/A	0.00	0.00	0.00
B25075_30000_to_34999	N/A	0.00	0.00	0.00
B25075_35000_to_39999	N/A	0.00	0.00	0.00
B25075_40000_to_49999	N/A	0.00	0.00	0.00
B25075_50000_to_59999	N/A	0.00	0.00	0.00
B25075_60000_to_69999	N/A	0.00	0.00	0.00
B25075_70000_to_79999	N/A	0.00	0.00	0.00
B25075_80000_to_89999	N/A	0.00	0.00	0.00
B25075_90000_to_99999	N/A	0.00	0.00	0.00
B25075_100000_to_124999	N/A	0.00	0.00	0.00
B25075_125000_to_149999	N/A	0.00	0.00	0.00
B25075_150000_to_174999	N/A	0.00	0.00	0.00
B25075_175000_to_199999	N/A	0.00	0.00	0.00
B25075_200000_to_249999	N/A	0.00	0.00	0.00
B25075_250000_to_299999	N/A	0.00	0.00	0.00
B25075_300000_to_399999	N/A	0.00	0.00	0.00
B25075_400000_to_499999	N/A	0.00	0.00	0.00
B25075_500000_to_749999	N/A	0.00	0.00	0.00
B25075_750000_to_999999	N/A	0.00	0.00	0.00
B25075_1000000_to_1499999	N/A	0.00	0.00	0.00
B25075_1500000_to_1999999	N/A	0.00	0.00	0.00
B25075_2000000_or_more	N/A	0.00	0.00	0.00
B25038_Owner_occupied_Moved_in_2015_or_later	N/A	N/A	N/A	0.00
B25038_Owner_occupied_Moved_in_2010_to_2014	N/A	N/A	N/A	0.00
B25038_Owner_occupied_Moved_in_2000_to_2009	N/A	N/A	N/A	0.00
B25038_Owner_occupied_Moved_in_1990_to_1999	N/A	N/A	N/A	0.00
B25038_Owner_occupied_Moved_in_1980_to_1989	N/A	N/A	N/A	0.00

	Logistic Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Model Type:				
Response Variable:	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag
Explanatory Variables:	MARA Risk Score	MARA Risk Score and Screening and Census Income Variables	MARA Risk Score and Screening and Census Education Variables	MARA Risk Score and Screening and Census Housing Variables
B25038_Owner_occupied_Moved_in_1979_or_earlier	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_2015_or_later	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_2000_to_2009	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_1990_to_1999	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_1980_to_1989	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_1979_or_earlier	N/A	N/A	N/A	0.00
B25034_Built_2014_or_later	N/A	N/A	N/A	0.00
B25034_Built_2010_to_2013	N/A	N/A	N/A	0.00
B25034_Built_2000_to_2009	N/A	N/A	N/A	0.00
B25034_Built_1990_to_1999	N/A	N/A	N/A	0.00
B25034_Built_1980_to_1989	N/A	N/A	N/A	0.00
B25034_Built_1970_to_1979	N/A	N/A	N/A	0.00
B25034_Built_1960_to_1969	N/A	N/A	N/A	0.00
B25034_Built_1950_to_1959	N/A	N/A	N/A	0.00
B25034_Built_1940_to_1949	N/A	N/A	N/A	0.00
B25034_Built_1939_or_earlier	N/A	N/A	N/A	0.00

Model Type:	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag
Explanatory Variables:	MARA Risk Score and Screening and Census Food Variables	MARA Risk Score and Screening Safety Variables	MARA Risk Score and Screening and Census Transportation Variables	MARA Risk Score and Screening and Census Utilities Variables
Intercept	-3.30	-2.94	-2.93	-2.82
MARA Total Risk Score	0.23	0.13	0.13	0.09
Patient_Age	N/A	N/A	N/A	N/A
Gender Male	N/A	N/A	N/A	N/A
Number of Medicare Dual Eligible Months	N/A	N/A	N/A	N/A
No Response to Housing Questions	N/A	N/A	N/A	N/A
Presence of Housing Issues	N/A	N/A	N/A	N/A
No Response Food Questions	0.00	N/A	N/A	N/A
Presence of Food Insecurity	0.00	N/A	N/A	N/A
No Response to Safety Questions	N/A	0.00	N/A	N/A
Presence of Safety Issues	N/A	0.00	N/A	N/A
No Response to Transportation Questions	N/A	N/A	-0.02	N/A
Presence of Transportation Issues	N/A	N/A	0.00	N/A
No Response to Utilities Questions	N/A	N/A	N/A	0.00
Presence of Utilities Issues	N/A	N/A	N/A	0.00
No Response to Education Questions	N/A	N/A	N/A	N/A
No High School Diploma	N/A	N/A	N/A	N/A
No Response to Income Questions	N/A	N/A	N/A	N/A
Percent of FPL	N/A	N/A	N/A	N/A
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	N/A	N/A	N/A	N/A
B14001_Enrolled_in_nursery_school_preschool	N/A	N/A	N/A	N/A
B14001_Enrolled_in_kindergarten	N/A	N/A	N/A	N/A
B14001_Enrolled_in_grade_1_to_grade_4	N/A	N/A	N/A	N/A
B14001_Enrolled_in_grade_5_to_grade_8	N/A	N/A	N/A	N/A
B14001_Enrolled_in_grade_9_to_grade_12	N/A	N/A	N/A	N/A
B14001_Enrolled_in_college_undergraduate_years	N/A	N/A	N/A	N/A
B14001_Graduate_or_professional_school	N/A	N/A	N/A	N/A
B15003_No_schooling_completed	N/A	N/A	N/A	N/A
B15003_Nursery_school	N/A	N/A	N/A	N/A
B15003_Kindergarten	N/A	N/A	N/A	N/A

Model Type:

Response Variable:

Explanatory Variables:

	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag
	MARA Risk Score and Screening and Census Food Variables	MARA Risk Score and Screening Safety Variables	MARA Risk Score and Screening and Census Transportation Variables	MARA Risk Score and Screening and Census Utilities Variables
B15003_1st_grade	N/A	N/A	N/A	N/A
B15003_2nd_grade	N/A	N/A	N/A	N/A
B15003_3rd_grade	N/A	N/A	N/A	N/A
B15003_4th_grade	N/A	N/A	N/A	N/A
B15003_5th_grade	N/A	N/A	N/A	N/A
B15003_6th_grade	N/A	N/A	N/A	N/A
B15003_7th_grade	N/A	N/A	N/A	N/A
B15003_8th_grade	N/A	N/A	N/A	N/A
B15003_9th_grade	N/A	N/A	N/A	N/A
B15003_10th_grade	N/A	N/A	N/A	N/A
B15003_11th_grade	N/A	N/A	N/A	N/A
B15003_12th_grade_no_diploma	N/A	N/A	N/A	N/A
B15003_Regular_high_school_diploma	N/A	N/A	N/A	N/A
B15003_GED_or_alternative_credential	N/A	N/A	N/A	N/A
B15003_Some_college_less_than_1_year	N/A	N/A	N/A	N/A
B15003_Some_college_1_or_more_years_no_degree	N/A	N/A	N/A	N/A
B15003_Associates_degree	N/A	N/A	N/A	N/A
B15003_Bachelors_degree	N/A	N/A	N/A	N/A
B15003_Masters_degree	N/A	N/A	N/A	N/A
B15003_Professional_school_degree	N/A	N/A	N/A	N/A
B15003_Doctorate_degree	N/A	N/A	N/A	N/A
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	N/A	0.00	0.00
B23025_In_Civilian_labor_force_Employed	N/A	N/A	N/A	N/A
B23025_In_Civilian_labor_force_Unemployed	N/A	N/A	N/A	N/A
B23025_In_labor_force_Armed_Forces	N/A	N/A	N/A	N/A
B23025_Not_in_labor_force	N/A	N/A	N/A	N/A
B25002_Vacant	N/A	N/A	N/A	N/A
B25014_Total_Owner_occupied	N/A	N/A	N/A	N/A
B25014_Owner_occupied_-_050_or_less_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Owner_occupied_-_051_to_100_occupants_per_room	N/A	N/A	N/A	N/A

Explanatory Variables:	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Food Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening Safety Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Transportation Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Utilities Variables
B25014_Owener_occupied_-_101_to_150_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Owener_occupied_-_151_to_200_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Owener_occupied_-_201_or_more_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_050_or_less_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_051_to_100_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_101_to_150_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_151_to_200_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_201_or_more_occupants_per_room	N/A	N/A	N/A	N/A
B25040_Utility_gas	N/A	N/A	N/A	0.00
B25040_Bottled_tank_or_LP_gas	N/A	N/A	N/A	0.00
B25040_Electricity	N/A	N/A	N/A	0.00
B25040_Fuel_oil_kerosene_etc	N/A	N/A	N/A	0.00
B25040_Coal_or_coke	N/A	N/A	N/A	0.00
B25040_Wood	N/A	N/A	N/A	0.00
B25040_Solar_energy	N/A	N/A	N/A	0.00
B25040_Other_fuel	N/A	N/A	N/A	0.00
B25040_No_fuel_used	N/A	N/A	N/A	0.00
B25048_Complete_plumbing_facilities	N/A	N/A	N/A	0.00
B25052_Complete_kitchen_facilities	N/A	N/A	N/A	N/A
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	N/A	N/A	N/A	0.00
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	N/A	N/A	N/A	0.00
B28003_Has_a_computer_-_Without_an_Internet_subscription	N/A	N/A	N/A	0.00
B28003_Has_a_computer	N/A	N/A	N/A	0.00
B28003_No_computer	N/A	N/A	N/A	0.00
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	N/A	N/A	N/A	N/A
C24050_Construction	N/A	N/A	N/A	N/A
C24050_Manufacturing	N/A	N/A	N/A	N/A
C24050_Wholesale_trade	N/A	N/A	N/A	N/A
C24050_Retail_trade	N/A	N/A	N/A	N/A
C24050_Transportation_and_warehousing_and_utilities	N/A	N/A	N/A	N/A
C24050_Information	N/A	N/A	N/A	N/A

Model Type:

Response Variable:

Explanatory Variables:	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Food Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening Safety Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Transportation Variables	Logistic Elastic Net Regression — IP Annual Allowed Costs (non-RA) Flag — MARA Risk Score and Screening and Census Utilities Variables
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	N/A	N/A	N/A	N/A	N/A
C24050_Professional_scientific_and_management_and_administrative_and_waste	N/A	N/A	N/A	N/A	N/A
C24050_Educational_services_and_health_care_and_social_assistance	N/A	N/A	N/A	N/A	N/A
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	N/A	N/A	N/A	N/A	N/A
C24050_Other_services_except_public_administration	N/A	N/A	N/A	N/A	N/A
B07204_Same_house_1_year_ago	N/A	N/A	N/A	N/A	N/A
B07204_Different_house_in_United_States_1_year_ago	N/A	N/A	N/A	N/A	N/A
B07204_Abroad_1_year_ago	N/A	N/A	N/A	N/A	N/A
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	0.00	N/A	N/A	N/A	N/A
B25017_1_room	N/A	N/A	N/A	N/A	N/A
B25017_2_rooms	N/A	N/A	N/A	N/A	N/A
B25017_3_rooms	N/A	N/A	N/A	N/A	N/A
B25017_4_rooms	N/A	N/A	N/A	N/A	N/A
B25017_5_rooms	N/A	N/A	N/A	N/A	N/A
B25017_6_rooms	N/A	N/A	N/A	N/A	N/A
B25017_7_rooms	N/A	N/A	N/A	N/A	N/A
B25017_8_rooms	N/A	N/A	N/A	N/A	N/A
B25017_9_or_more_rooms	N/A	N/A	N/A	N/A	N/A
B25043_With_telephone_service_available	N/A	N/A	N/A	N/A	0.00
B25024_1_detached	N/A	N/A	N/A	N/A	N/A
B25024_1_attached	N/A	N/A	N/A	N/A	N/A
B25024_2	N/A	N/A	N/A	N/A	N/A
B25024_3_or_4	N/A	N/A	N/A	N/A	N/A
B25024_5_to_9	N/A	N/A	N/A	N/A	N/A
B25024_10_to_19	N/A	N/A	N/A	N/A	N/A
B25024_20_to_49	N/A	N/A	N/A	N/A	N/A
B25024_50_or_more	N/A	N/A	N/A	N/A	N/A
B25024_Mobile_home	N/A	N/A	N/A	N/A	N/A
B25024_Boat_RV_van_etc	N/A	N/A	N/A	N/A	N/A
B25075_Less_than_10000	N/A	N/A	N/A	N/A	N/A

Model Type:

	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Response Variable:	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag
	MARA Risk Score and Screening and Census Food Variables	MARA Risk Score and Screening Safety Variables	MARA Risk Score and Screening and Census Transportation Variables	MARA Risk Score and Screening and Census Utilities Variables	
Explanatory Variables:					
B25075_10000_to_14999	N/A	N/A	N/A	N/A	
B25075_15000_to_19999	N/A	N/A	N/A	N/A	
B25075_20000_to_24999	N/A	N/A	N/A	N/A	
B25075_25000_to_29999	N/A	N/A	N/A	N/A	
B25075_30000_to_34999	N/A	N/A	N/A	N/A	
B25075_35000_to_39999	N/A	N/A	N/A	N/A	
B25075_40000_to_49999	N/A	N/A	N/A	N/A	
B25075_50000_to_59999	N/A	N/A	N/A	N/A	
B25075_60000_to_69999	N/A	N/A	N/A	N/A	
B25075_70000_to_79999	N/A	N/A	N/A	N/A	
B25075_80000_to_89999	N/A	N/A	N/A	N/A	
B25075_90000_to_99999	N/A	N/A	N/A	N/A	
B25075_100000_to_124999	N/A	N/A	N/A	N/A	
B25075_125000_to_149999	N/A	N/A	N/A	N/A	
B25075_150000_to_174999	N/A	N/A	N/A	N/A	
B25075_175000_to_199999	N/A	N/A	N/A	N/A	
B25075_200000_to_249999	N/A	N/A	N/A	N/A	
B25075_250000_to_299999	N/A	N/A	N/A	N/A	
B25075_300000_to_399999	N/A	N/A	N/A	N/A	
B25075_400000_to_499999	N/A	N/A	N/A	N/A	
B25075_500000_to_749999	N/A	N/A	N/A	N/A	
B25075_750000_to_999999	N/A	N/A	N/A	N/A	
B25075_1000000_to_1499999	N/A	N/A	N/A	N/A	
B25075_1500000_to_1999999	N/A	N/A	N/A	N/A	
B25075_2000000_or_more	N/A	N/A	N/A	N/A	
B25038_Owner_occupied_Moved_in_2015_or_later	N/A	N/A	N/A	N/A	
B25038_Owner_occupied_Moved_in_2010_to_2014	N/A	N/A	N/A	N/A	
B25038_Owner_occupied_Moved_in_2000_to_2009	N/A	N/A	N/A	N/A	
B25038_Owner_occupied_Moved_in_1990_to_1999	N/A	N/A	N/A	N/A	
B25038_Owner_occupied_Moved_in_1980_to_1989	N/A	N/A	N/A	N/A	

	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression	Logistic Elastic Net Regression
Model Type:				
Response Variable:	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag	IP Annual Allowed Costs (non-RA) Flag
Explanatory Variables:	MARA Risk Score and Screening and Census Food Variables	MARA Risk Score and Screening Safety Variables	MARA Risk Score and Screening and Census Transportation Variables	MARA Risk Score and Screening and Census Utilities Variables
B25038_Owner_occupied_Moved_in_1979_or_earlier	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_2015_or_later	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_2010_to_2014	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_2000_to_2009	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_1990_to_1999	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_1980_to_1989	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_1979_or_earlier	N/A	N/A	N/A	N/A
B25034_Built_2014_or_later	N/A	N/A	N/A	N/A
B25034_Built_2010_to_2013	N/A	N/A	N/A	N/A
B25034_Built_2000_to_2009	N/A	N/A	N/A	N/A
B25034_Built_1990_to_1999	N/A	N/A	N/A	N/A
B25034_Built_1980_to_1989	N/A	N/A	N/A	N/A
B25034_Built_1970_to_1979	N/A	N/A	N/A	N/A
B25034_Built_1960_to_1969	N/A	N/A	N/A	N/A
B25034_Built_1950_to_1959	N/A	N/A	N/A	N/A
B25034_Built_1940_to_1949	N/A	N/A	N/A	N/A
B25034_Built_1939_or_earlier	N/A	N/A	N/A	N/A

Model Type:	Linear Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))
Explanatory Variables:	MARA Risk Score	MARA Risk Score and Screening and Census Income Variables	MARA Risk Score and Screening and Census Education Variables	MARA Risk Score and Screening and Census Housing Variables
Intercept	8.28	8.17	8.41	8.22
MARA Total Risk Score	0.05	0.05	0.05	0.05
Patient_Age	N/A	N/A	N/A	N/A
Gender Male	N/A	N/A	N/A	N/A
Number of Medicare Dual Eligible Months	N/A	N/A	N/A	N/A
No Response to Housing Questions	N/A	N/A	N/A	0.00
Presence of Housing Issues	N/A	N/A	N/A	0.00
No Response Food Questions	N/A	N/A	N/A	N/A
Presence of Food Insecurity	N/A	N/A	N/A	N/A
No Response to Safety Questions	N/A	N/A	N/A	N/A
Presence of Safety Issues	N/A	N/A	N/A	N/A
No Response to Transportation Questions	N/A	N/A	N/A	N/A
Presence of Transportation Issues	N/A	N/A	N/A	N/A
No Response to Utilities Questions	N/A	N/A	N/A	N/A
Presence of Utilities Issues	N/A	N/A	N/A	N/A
No Response to Education Questions	N/A	N/A	0.00	N/A
No High School Diploma	N/A	N/A	0.07	N/A
No Response to Income Questions	N/A	0.00	N/A	N/A
Percent of FPL	N/A	-0.06	N/A	N/A
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	N/A	N/A	N/A	N/A
B14001_Enrolled_in_nursery_school_preschool	N/A	N/A	-1.60	N/A
B14001_Enrolled_in_kindergarten	N/A	N/A	0.00	N/A
B14001_Enrolled_in_grade_1_to_grade_4	N/A	N/A	-0.63	N/A
B14001_Enrolled_in_grade_5_to_grade_8	N/A	N/A	-1.23	N/A
B14001_Enrolled_in_grade_9_to_grade_12	N/A	N/A	0.00	N/A
B14001_Enrolled_in_college_undergraduate_years	N/A	N/A	0.00	N/A
B14001_Graduate_or_professional_school	N/A	N/A	-0.23	N/A
B15003_No_schooling_completed	N/A	N/A	0.00	N/A
B15003_Nursery_school	N/A	0.00	0.00	N/A
B15003_Kindergarten	N/A	0.00	0.00	N/A

Explanatory Variables:	Linear Regression Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score	Elastic Net Regression Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Income Variables	Elastic Net Regression Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Education Variables	Elastic Net Regression Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Housing Variables
B15003_1st_grade	N/A	0.00	0.00	N/A
B15003_2nd_grade	N/A	0.00	0.00	N/A
B15003_3rd_grade	N/A	0.00	0.00	N/A
B15003_4th_grade	N/A	0.00	4.35	N/A
B15003_5th_grade	N/A	0.00	0.00	N/A
B15003_6th_grade	N/A	0.00	0.00	N/A
B15003_7th_grade	N/A	2.42	1.65	N/A
B15003_8th_grade	N/A	0.00	0.00	N/A
B15003_9th_grade	N/A	0.00	0.00	N/A
B15003_10th_grade	N/A	0.00	0.00	N/A
B15003_11th_grade	N/A	0.00	0.00	N/A
B15003_12th_grade_no_diploma	N/A	0.00	0.00	N/A
B15003_Regular_high_school_diploma	N/A	0.00	0.00	N/A
B15003_GED_or_alternative_credential	N/A	0.00	0.00	N/A
B15003_Some_college_less_than_1_year	N/A	0.54	0.84	N/A
B15003_Some_college_1_or_more_years_no_degree	N/A	0.20	0.00	N/A
B15003_Associates_degree	N/A	0.45	0.00	N/A
B15003_Bachelors_degree	N/A	0.00	0.00	N/A
B15003_Masters_degree	N/A	0.00	0.00	N/A
B15003_Professional_school_degree	N/A	0.00	0.00	N/A
B15003_Doctorate_degree	N/A	-1.48	-0.45	N/A
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	N/A	0.00	N/A	0.00
B23025_In_Civilian_labor_force_Employed	N/A	0.00	N/A	N/A
B23025_In_Civilian_labor_force_Unemployed	N/A	0.00	N/A	N/A
B23025_In_labor_force_Armed_Forces	N/A	0.00	N/A	N/A
B23025_Not_in_labor_force	N/A	0.00	N/A	N/A
B25002_Vacant	N/A	N/A	N/A	0.53
B25014_Total_Owner_occupied	N/A	N/A	N/A	0.00
B25014_Owner_occupied_-_050_or_less_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Owner_occupied_-_051_to_100_occupants_per_room	N/A	N/A	N/A	0.00

Model Type:

Response Variable:

Explanatory Variables:	Linear Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Income Variables	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Education Variables	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Housing Variables
B25014_Owener_occupied_-_101_to_150_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Owener_occupied_-_151_to_200_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Owener_occupied_-_201_or_more_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_050_or_less_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_051_to_100_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_101_to_150_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_151_to_200_occupants_per_room	N/A	N/A	N/A	0.00
B25014_Renter_occupied_-_201_or_more_occupants_per_room	N/A	N/A	N/A	0.00
B25040_Utility_gas	N/A	N/A	N/A	N/A
B25040_Bottled_tank_or_LP_gas	N/A	N/A	N/A	N/A
B25040_Electricity	N/A	N/A	N/A	N/A
B25040_Fuel_oil_kerosene_etc	N/A	N/A	N/A	N/A
B25040_Coal_or_coke	N/A	N/A	N/A	N/A
B25040_Wood	N/A	N/A	N/A	N/A
B25040_Solar_energy	N/A	N/A	N/A	N/A
B25040_Other_fuel	N/A	N/A	N/A	N/A
B25040_No_fuel_used	N/A	N/A	N/A	N/A
B25048_Complete_plumbing_facilities	N/A	N/A	N/A	0.00
B25052_Complete_kitchen_facilities	N/A	N/A	N/A	0.00
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	N/A	N/A	0.00	N/A
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	N/A	N/A	0.01	N/A
B28003_Has_a_computer_-_Without_an_Internet_subscription	N/A	N/A	0.00	N/A
B28003_No_computer	N/A	N/A	-0.13	N/A
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	N/A	0.00	N/A	N/A
C24050_Construction	N/A	0.00	N/A	N/A
C24050_Manufacturing	N/A	-0.02	N/A	N/A
C24050_Wholesale_trade	N/A	0.00	N/A	N/A
C24050_Retail_trade	N/A	0.00	N/A	N/A
C24050_Transportation_and_warehousing_and_utilities	N/A	0.00	N/A	N/A
C24050_Information	N/A	0.00	N/A	N/A

Explanatory Variables:	Linear Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Income Variables	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Education Variables	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Housing Variables
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	N/A	0.00	N/A	N/A
C24050_Professional_scientific_and_management_and_administrative_and_waste	N/A	0.53	N/A	N/A
C24050_Educational_services_and_health_care_and_social_assistance	N/A	0.00	N/A	N/A
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	N/A	0.00	N/A	N/A
C24050_Other_services_except_public_administration	N/A	0.00	N/A	N/A
B07204_Same_house_1_year_ago	N/A	N/A	N/A	0.00
B07204_Different_house_in_United_States_1_year_ago	N/A	N/A	N/A	0.00
B07204_Abroad_1_year_ago	N/A	N/A	N/A	0.00
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	N/A	-0.04	0.00	N/A
B25017_1_room	N/A	N/A	N/A	0.35
B25017_2_rooms	N/A	N/A	N/A	0.00
B25017_3_rooms	N/A	N/A	N/A	0.00
B25017_4_rooms	N/A	N/A	N/A	0.00
B25017_5_rooms	N/A	N/A	N/A	-0.03
B25017_6_rooms	N/A	N/A	N/A	0.00
B25017_7_rooms	N/A	N/A	N/A	0.00
B25017_8_rooms	N/A	N/A	N/A	0.00
B25017_9_or_more_rooms	N/A	N/A	N/A	0.00
B25043_With_telephone_service_available	N/A	N/A	N/A	N/A
B25024_1_detached	N/A	N/A	N/A	0.00
B25024_1_attached	N/A	N/A	N/A	0.00
B25024_2	N/A	N/A	N/A	-0.40
B25024_3_or_4	N/A	N/A	N/A	0.10
B25024_5_to_9	N/A	N/A	N/A	-0.02
B25024_10_to_19	N/A	N/A	N/A	0.00
B25024_20_to_49	N/A	N/A	N/A	0.00
B25024_50_or_more	N/A	N/A	N/A	0.00
B25024_Mobile_home	N/A	N/A	N/A	-0.07
B25024_Boat_RV_van_etc	N/A	N/A	N/A	3.17
B25075_Less_than_10000	N/A	-0.17	-0.24	-0.02

Model Type:	Linear Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))
Explanatory Variables:	MARA Risk Score	MARA Risk Score and Screening and Census Income Variables	MARA Risk Score and Screening and Census Education Variables	MARA Risk Score and Screening and Census Housing Variables
B25075_10000_to_14999	N/A	0.00	0.00	0.00
B25075_15000_to_19999	N/A	0.00	0.00	0.00
B25075_20000_to_24999	N/A	0.00	0.00	0.00
B25075_25000_to_29999	N/A	0.00	0.00	0.00
B25075_30000_to_34999	N/A	0.00	0.00	0.00
B25075_35000_to_39999	N/A	0.00	0.00	0.00
B25075_40000_to_49999	N/A	-0.60	0.00	0.00
B25075_50000_to_59999	N/A	0.00	0.00	0.00
B25075_60000_to_69999	N/A	0.00	0.00	0.06
B25075_70000_to_79999	N/A	-1.40	-1.75	-1.67
B25075_80000_to_89999	N/A	0.00	0.00	0.00
B25075_90000_to_99999	N/A	0.00	0.00	0.00
B25075_100000_to_124999	N/A	-0.03	0.00	0.00
B25075_125000_to_149999	N/A	0.00	0.00	0.00
B25075_150000_to_174999	N/A	0.05	0.21	0.00
B25075_175000_to_199999	N/A	0.00	0.00	0.00
B25075_200000_to_249999	N/A	0.00	0.00	0.00
B25075_250000_to_299999	N/A	0.00	0.00	0.00
B25075_300000_to_399999	N/A	0.00	0.00	0.00
B25075_400000_to_499999	N/A	0.31	0.16	0.41
B25075_500000_to_749999	N/A	0.00	0.00	0.00
B25075_750000_to_999999	N/A	0.00	0.00	-0.14
B25075_1000000_to_1499999	N/A	0.00	0.00	0.00
B25075_1500000_to_1999999	N/A	0.00	0.00	0.00
B25075_2000000_or_more	N/A	0.00	0.00	0.00
B25038_Owner_occupied_Moved_in_2015_or_later	N/A	N/A	N/A	-0.36
B25038_Owner_occupied_Moved_in_2010_to_2014	N/A	N/A	N/A	0.00
B25038_Owner_occupied_Moved_in_2000_to_2009	N/A	N/A	N/A	0.00
B25038_Owner_occupied_Moved_in_1990_to_1999	N/A	N/A	N/A	0.00
B25038_Owner_occupied_Moved_in_1980_to_1989	N/A	N/A	N/A	0.00

Model Type:	Linear Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))
	MARA Risk Score	MARA Risk Score and Screening and Census Income Variables	MARA Risk Score and Screening and Census Education Variables	MARA Risk Score and Screening and Census Housing Variables
Explanatory Variables:				
B25038_Owner_occupied_Moved_in_1979_or_earlier	N/A	N/A	N/A	0.60
B25038_Renter_occupied_Moved_in_2015_or_later	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_2010_to_2014	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_2000_to_2009	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_1990_to_1999	N/A	N/A	N/A	-0.41
B25038_Renter_occupied_Moved_in_1980_to_1989	N/A	N/A	N/A	0.00
B25038_Renter_occupied_Moved_in_1979_or_earlier	N/A	N/A	N/A	-5.93
B25034_Built_2014_or_later	N/A	N/A	N/A	0.00
B25034_Built_2010_to_2013	N/A	N/A	N/A	0.00
B25034_Built_2000_to_2009	N/A	N/A	N/A	-0.04
B25034_Built_1990_to_1999	N/A	N/A	N/A	0.00
B25034_Built_1980_to_1989	N/A	N/A	N/A	0.27
B25034_Built_1970_to_1979	N/A	N/A	N/A	0.00
B25034_Built_1960_to_1969	N/A	N/A	N/A	0.00
B25034_Built_1950_to_1959	N/A	N/A	N/A	0.07
B25034_Built_1940_to_1949	N/A	N/A	N/A	-0.11
B25034_Built_1939_or_earlier	N/A	N/A	N/A	0.00

Model Type:	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))
	MARA Risk Score and Screening and Census Food Variables	MARA Risk Score and Screening Safety Variables	MARA Risk Score and Screening and Census Transportation Variables	MARA Risk Score and Screening and Census Utilities Variables
Explanatory Variables:				
Intercept	8.24	8.29	8.15	7.11
MARA Total Risk Score	0.06	0.05	0.06	0.06
Patient_Age	N/A	N/A	N/A	N/A
Gender Male	N/A	N/A	N/A	N/A
Number of Medicare Dual Eligible Months	N/A	N/A	N/A	N/A
No Response to Housing Questions	N/A	N/A	N/A	N/A
Presence of Housing Issues	N/A	N/A	N/A	N/A
No Response Food Questions	0.00	N/A	N/A	N/A
Presence of Food Insecurity	-0.01	N/A	N/A	N/A
No Response to Safety Questions	N/A	0.06	N/A	N/A
Presence of Safety Issues	N/A	0.00	N/A	N/A
No Response to Transportation Questions	N/A	N/A	0.07	N/A
Presence of Transportation Issues	N/A	N/A	-0.09	N/A
No Response to Utilities Questions	N/A	N/A	N/A	-0.04
Presence of Utilities Issues	N/A	N/A	N/A	-0.17
No Response to Education Questions	N/A	N/A	N/A	N/A
No High School Diploma	N/A	N/A	N/A	N/A
No Response to Income Questions	N/A	N/A	N/A	N/A
Percent of FPL	N/A	N/A	N/A	N/A
B10002_Grandparent_householder_responsible_for_own_grandchildren_under_18	N/A	N/A	N/A	N/A
B14001_Enrolled_in_nursery_school_preschool	N/A	N/A	N/A	N/A
B14001_Enrolled_in_kindergarten	N/A	N/A	N/A	N/A
B14001_Enrolled_in_grade_1_to_grade_4	N/A	N/A	N/A	N/A
B14001_Enrolled_in_grade_5_to_grade_8	N/A	N/A	N/A	N/A
B14001_Enrolled_in_grade_9_to_grade_12	N/A	N/A	N/A	N/A
B14001_Enrolled_in_college_undergraduate_years	N/A	N/A	N/A	N/A
B14001_Graduate_or_professional_school	N/A	N/A	N/A	N/A
B15003_No_schooling_completed	N/A	N/A	N/A	N/A
B15003_Nursery_school	N/A	N/A	N/A	N/A
B15003_Kindergarten	N/A	N/A	N/A	N/A

Model Type:

Response Variable:

Explanatory Variables:

Explanatory Variables:	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Food Variables	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity))	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening Safety Variables	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Transportation Variables	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity))	Elastic Net Regression — Log(IP Annual Allowed Costs (non-RA) (Severity)) — MARA Risk Score and Screening and Census Utilities Variables
B15003_1st_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_2nd_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_3rd_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_4th_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_5th_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_6th_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_7th_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_8th_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_9th_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_10th_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_11th_grade	N/A	N/A	N/A	N/A	N/A	N/A
B15003_12th_grade_no_diploma	N/A	N/A	N/A	N/A	N/A	N/A
B15003_Regular_high_school_diploma	N/A	N/A	N/A	N/A	N/A	N/A
B15003_GED_or_alternative_credential	N/A	N/A	N/A	N/A	N/A	N/A
B15003_Some_college_less_than_1_year	N/A	N/A	N/A	N/A	N/A	N/A
B15003_Some_college_1_or_more_years_no_degree	N/A	N/A	N/A	N/A	N/A	N/A
B15003_Associates_degree	N/A	N/A	N/A	N/A	N/A	N/A
B15003_Bachelors_degree	N/A	N/A	N/A	N/A	N/A	N/A
B15003_Masters_degree	N/A	N/A	N/A	N/A	N/A	N/A
B15003_Professional_school_degree	N/A	N/A	N/A	N/A	N/A	N/A
B15003_Doctorate_degree	N/A	N/A	N/A	N/A	N/A	N/A
B19013_Median_household_income_in_the_past_12_months_(in_2017_inflation-a	0.00	N/A	N/A	0.00	N/A	0.00
B23025_In_Civilian_labor_force_Employed	N/A	N/A	N/A	N/A	N/A	N/A
B23025_In_Civilian_labor_force_Unemployed	N/A	N/A	N/A	N/A	N/A	N/A
B23025_In_labor_force_Armed_Forces	N/A	N/A	N/A	N/A	N/A	N/A
B23025_Not_in_labor_force	N/A	N/A	N/A	N/A	N/A	N/A
B25002_Vacant	N/A	N/A	N/A	N/A	N/A	N/A
B25014_Total_Owner_occupied	N/A	N/A	N/A	N/A	N/A	N/A
B25014_Owner_occupied_-_050_or_less_occupants_per_room	N/A	N/A	N/A	N/A	N/A	N/A
B25014_Owner_occupied_-_051_to_100_occupants_per_room	N/A	N/A	N/A	N/A	N/A	N/A

Model Type:	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))
	MARA Risk Score and Screening and Census Food Variables	MARA Risk Score and Screening Safety Variables	MARA Risk Score and Screening and Census Transportation Variables	MARA Risk Score and Screening and Census Utilities Variables
Explanatory Variables:				
B25014_Owener_occupied_-_101_to_150_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Owener_occupied_-_151_to_200_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Owener_occupied_-_201_or_more_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_050_or_less_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_051_to_100_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_101_to_150_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_151_to_200_occupants_per_room	N/A	N/A	N/A	N/A
B25014_Renter_occupied_-_201_or_more_occupants_per_room	N/A	N/A	N/A	N/A
B25040_Utility_gas	N/A	N/A	N/A	-0.03
B25040_Bottled_tank_or_LP_gas	N/A	N/A	N/A	1.34
B25040_Electricity	N/A	N/A	N/A	0.00
B25040_Fuel_oil_kerosene_etc	N/A	N/A	N/A	5.52
B25040_Coal_or_coke	N/A	N/A	N/A	34.85
B25040_Wood	N/A	N/A	N/A	0.35
B25040_Solar_energy	N/A	N/A	N/A	-15.39
B25040_Other_fuel	N/A	N/A	N/A	0.00
B25040_No_fuel_used	N/A	N/A	N/A	0.00
B25048_Complete_plumbing_facilities	N/A	N/A	N/A	-1.60
B25052_Complete_kitchen_facilities	N/A	N/A	N/A	N/A
B28003_Has_a_computer_-_With_dial-up_Internet_subscription_alone	N/A	N/A	N/A	0.00
B28003_Has_a_computer_-_With_a_broadband_Internet_subscription	N/A	N/A	N/A	0.02
B28003_Has_a_computer_-_Without_an_Internet_subscription	N/A	N/A	N/A	0.00
B28003_No_computer	N/A	N/A	N/A	-0.01
C24050_Agriculture_forestry_fishing_and_hunting_and_mining	N/A	N/A	N/A	N/A
C24050_Construction	N/A	N/A	N/A	N/A
C24050_Manufacturing	N/A	N/A	N/A	N/A
C24050_Wholesale_trade	N/A	N/A	N/A	N/A
C24050_Retail_trade	N/A	N/A	N/A	N/A
C24050_Transportation_and_warehousing_and_utilities	N/A	N/A	N/A	N/A
C24050_Information	N/A	N/A	N/A	N/A

Model Type:	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))	Log(IP Annual Allowed Costs (non-RA) (Severity))
	MARA Risk Score and Screening and Census Food Variables	MARA Risk Score and Screening Safety Variables	MARA Risk Score and Screening and Census Transportation Variables	MARA Risk Score and Screening and Census Utilities Variables
Explanatory Variables:				
C24050_Finance_and_insurance_and_real_estate_and_rental_and_leasing	N/A	N/A	N/A	N/A
C24050_Professional_scientific_and_management_and_administrative_and_waste	N/A	N/A	N/A	N/A
C24050_Educational_services_and_health_care_and_social_assistance	N/A	N/A	N/A	N/A
C24050_Arts_entertainment_and_recreation_and_accommodation_and_food_serv	N/A	N/A	N/A	N/A
C24050_Other_services_except_public_administration	N/A	N/A	N/A	N/A
B07204_Same_house_1_year_ago	N/A	N/A	N/A	N/A
B07204_Different_house_in_United_States_1_year_ago	N/A	N/A	N/A	N/A
B07204_Abroad_1_year_ago	N/A	N/A	N/A	N/A
B22001_Household_received_Food_Stamps_SNAP_in_the_past_12_months	0.00	N/A	N/A	N/A
B25017_1_room	N/A	N/A	N/A	N/A
B25017_2_rooms	N/A	N/A	N/A	N/A
B25017_3_rooms	N/A	N/A	N/A	N/A
B25017_4_rooms	N/A	N/A	N/A	N/A
B25017_5_rooms	N/A	N/A	N/A	N/A
B25017_6_rooms	N/A	N/A	N/A	N/A
B25017_7_rooms	N/A	N/A	N/A	N/A
B25017_8_rooms	N/A	N/A	N/A	N/A
B25017_9_or_more_rooms	N/A	N/A	N/A	N/A
B25043_With_telephone_service_available	N/A	N/A	N/A	2.81
B25024_1_detached	N/A	N/A	N/A	N/A
B25024_1_attached	N/A	N/A	N/A	N/A
B25024_2	N/A	N/A	N/A	N/A
B25024_3_or_4	N/A	N/A	N/A	N/A
B25024_5_to_9	N/A	N/A	N/A	N/A
B25024_10_to_19	N/A	N/A	N/A	N/A
B25024_20_to_49	N/A	N/A	N/A	N/A
B25024_50_or_more	N/A	N/A	N/A	N/A
B25024_Mobile_home	N/A	N/A	N/A	N/A
B25024_Boat_RV_van_etc	N/A	N/A	N/A	N/A
B25075_Less_than_10000	N/A	N/A	N/A	N/A

Model Type:	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Food Variables	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening Safety Variables	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Transportation Variables	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Utilities Variables
Explanatory Variables:				
B25075_10000_to_14999	N/A	N/A	N/A	N/A
B25075_15000_to_19999	N/A	N/A	N/A	N/A
B25075_20000_to_24999	N/A	N/A	N/A	N/A
B25075_25000_to_29999	N/A	N/A	N/A	N/A
B25075_30000_to_34999	N/A	N/A	N/A	N/A
B25075_35000_to_39999	N/A	N/A	N/A	N/A
B25075_40000_to_49999	N/A	N/A	N/A	N/A
B25075_50000_to_59999	N/A	N/A	N/A	N/A
B25075_60000_to_69999	N/A	N/A	N/A	N/A
B25075_70000_to_79999	N/A	N/A	N/A	N/A
B25075_80000_to_89999	N/A	N/A	N/A	N/A
B25075_90000_to_99999	N/A	N/A	N/A	N/A
B25075_100000_to_124999	N/A	N/A	N/A	N/A
B25075_125000_to_149999	N/A	N/A	N/A	N/A
B25075_150000_to_174999	N/A	N/A	N/A	N/A
B25075_175000_to_199999	N/A	N/A	N/A	N/A
B25075_200000_to_249999	N/A	N/A	N/A	N/A
B25075_250000_to_299999	N/A	N/A	N/A	N/A
B25075_300000_to_399999	N/A	N/A	N/A	N/A
B25075_400000_to_499999	N/A	N/A	N/A	N/A
B25075_500000_to_749999	N/A	N/A	N/A	N/A
B25075_750000_to_999999	N/A	N/A	N/A	N/A
B25075_1000000_to_1499999	N/A	N/A	N/A	N/A
B25075_1500000_to_1999999	N/A	N/A	N/A	N/A
B25075_2000000_or_more	N/A	N/A	N/A	N/A
B25038_Owner_occupied_Moved_in_2015_or_later	N/A	N/A	N/A	N/A
B25038_Owner_occupied_Moved_in_2010_to_2014	N/A	N/A	N/A	N/A
B25038_Owner_occupied_Moved_in_2000_to_2009	N/A	N/A	N/A	N/A
B25038_Owner_occupied_Moved_in_1990_to_1999	N/A	N/A	N/A	N/A
B25038_Owner_occupied_Moved_in_1980_to_1989	N/A	N/A	N/A	N/A

Model Type:	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression	Elastic Net Regression
Response Variable:	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Food Variables	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening Safety Variables	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Transportation Variables	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Utilities Variables	Log(IP Annual Allowed Costs (non-RA) (Severity)) MARA Risk Score and Screening and Census Utilities Variables
Explanatory Variables:					
B25038_Owner_occupied_Moved_in_1979_or_earlier	N/A	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_2015_or_later	N/A	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_2010_to_2014	N/A	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_2000_to_2009	N/A	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_1990_to_1999	N/A	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_1980_to_1989	N/A	N/A	N/A	N/A	N/A
B25038_Renter_occupied_Moved_in_1979_or_earlier	N/A	N/A	N/A	N/A	N/A
B25034_Built_2014_or_later	N/A	N/A	N/A	N/A	N/A
B25034_Built_2010_to_2013	N/A	N/A	N/A	N/A	N/A
B25034_Built_2000_to_2009	N/A	N/A	N/A	N/A	N/A
B25034_Built_1990_to_1999	N/A	N/A	N/A	N/A	N/A
B25034_Built_1980_to_1989	N/A	N/A	N/A	N/A	N/A
B25034_Built_1970_to_1979	N/A	N/A	N/A	N/A	N/A
B25034_Built_1960_to_1969	N/A	N/A	N/A	N/A	N/A
B25034_Built_1950_to_1959	N/A	N/A	N/A	N/A	N/A
B25034_Built_1940_to_1949	N/A	N/A	N/A	N/A	N/A
B25034_Built_1939_or_earlier	N/A	N/A	N/A	N/A	N/A

Endnotes

[1] R^2: gives information about the goodness of fit of a model, a statistical measure of how well the regression predictions approximate the real data points. R^2 values range from 0 to 1. An R^2 of 1 indicates that the regression predictions perfectly fit the data.

AUC: area under the curve, gives the rate of successful classification by a logistic model. AUC values range from 0.5 to 1. An AUC of 0.5 means the model has no class separation capacity whatsoever—the model does no better than a flip of a coin.

α (alpha): in the context of elastic net regression, α = 0 corresponds to ridge regression, and α = 1 corresponds to lasso regression. A value of α between 0 and 1 is a combination of both ridge and lasso regression.

λ (lambda): in the context of elastic net regression, λ = 0 corresponds to basic ordinary least squares, and λ > 0 adds a constraint to the coefficients. This constraint minimizes the coefficients (reducing their effect) and trends toward zero the larger the value of lambda.

Coefficient estimate: in simple terms, this measures the change in the response variable for a unit change in the predictor variable.

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