The effects of healthcare provisions on the 4X poverty population In the United States

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Abstract

The patent protection and affordable care act provides tax credits and cost-sharing subsidies to households at or below 400 percent of the federal poverty threshold. To be eligible to receive these subsidies, one must not be insured under other government health insurance programs such as Medicare or Medicaid, and must have a federal poverty status between 133-400%, also known as the 4X poverty population. This tech report discusses the demographics and profile of the 4X poverty population, the dynamics of this population, and means of developing education and outreach methods to effectively inform this population of their eligibility for benefits. The population demographics are broken down at the state and city level as well as urban and rural areas. In terms of population dynamics, there were four different possible ways of moving in and out of the 4X poverty group from both the top edge (400%) and the bottom edge (133%). Through virtual experiments on taxpayer compliance, interventions such as mail and newspaper ads were tested to determine which best help educate the public about these benefits.

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1 Introduction

The Patient Protection and Affordable Care Act (PPACA) is a federal statute that was signed into U.S law by President Obama on March 23, 2010 as part of the health care reform agenda [1]. The purpose of this act is to provide tax credits and cost-sharing subsidies to households at or below 400 percent of the poverty threshold [1]. In order to be eligible, one must meet specific poverty criteria and cannot be offered other forms of health insurance from other programs such as Medicaid and Medicare [1]. The focus population includes people between 133 and 400 percent of the federal poverty threshold who are between the ages of 18 and 65 [1]. There are three tasks that must be accomplished in order to effectively implement this act.

The first is to develop a significant understanding of the demographics of the focus population. This is done by highlighting socio-demographics and taxpayer demographics to create a 4X poverty population profile. This profile will vary between states and cities and certain areas will have different needs than others.   After determining the details of who should receive these tax credits, the next step is to figure out the dynamics of this population. People moving in and out of this population need to be accounted for so that people don't miss their opportunity to receive credits and conversely no longer qualify to receive benefits. There are 2 possible ways to move into this population: either by increasing poverty status from less than 133% of the federal poverty threshold into the range 133-400%, or by decreasing poverty status from greater than 400% of the poverty threshold into the range 133-400%. The scenario is mirrored for moving out: either by decreasing poverty status to below 133% of the federal poverty threshold out of the range 133-400%, or by increasing poverty status to greater than 400% of the poverty threshold out of the range 133-400%.   The final task is to determine ways of effectively educating the population about their benefits and making sure that people claim the proper amount of credits that they are entitled to. There are various information channels as well as additional forms of media intervention that can be implemented. Based on the results of simulation models that measure the effects of interventions such as newspaper ads, television ads, and radio on tax return compliance, analysis of the effectiveness of information channels, and the use of Insight, a software tool that provides tax payer related information about a city or region, optimal outreach strategies can be developed.

2 Data

The original data set PUMS (public use micro data sample) used for this analysis is a product of the Census Bureau's 2000 Census. PUMS contains person and household records representing 5% samples of the occupied and vacant housing units in the U.S as a whole, and also individuals within those units [4]. There are associated weights given to each household and person sample. The 5 percent state-level files contain PUMAs (public use micro data areas), which have a minimum population of 100,000 [4]. For this analysis, person records were analyzed. Bin categories were created for socio demographic variables of interest which were: income, age, household language, filing status, gender, race, and number of children. After creating these bins, a new data set was created in order to incorporate the agent's person record

weight when computing statistics. This data set was then filtered by poverty status and age to meet the 4X poverty population criteria: Age range (17-65) Poverty Range (133-400) inclusive. Subgroups were also created for a more in depth analysis: (101-132), (133-149), (150-199), (200-249), (250-299), (300-349), (350-400). Simulated data was created using Construct, an internal piece of software created by CASOS used for running virtual experiments. The process of creating simulated data is as follows: Random samples of 4000 agents from Census 2000 PUMS for each city with values MSAPMSA5 = 0-9360 was created. These samples were then input to Construct as the taxpayer population for simulation of the effects of interventions on each city. The total number of agents was tallied to create proportions for tax returns and different taxpayer characteristics.

3 Identifying the population

In order to identify the 4X poverty population, different geographic categories of the United States such as state level and city level populations were analyzed. For the state level analysis, the states were broken down by urban and rural areas. Rural areas were defined in terms of their public use micro area codes which included mixed MSA and non metropolitan territory as well as Non metropolitan areas. Urban areas were also defined in terms of public use micro areas which included pure MSA's and partial MSA's which are areas that overlap into 2 or more pure MSA's. For rural areas, a majority of the 4X population ended up residing in the following states: Texas, Kentucky, Georgia, North Carolina, and Ohio. For urban areas: California, Texas, Florida, New York, and Pennsylvania. A general demographic profile for someone in the 4X poverty group is as follows:

Table 1: 4X Poverty Population General Demographic Profile	
Variable	**Value**
Income	$15,000-$30,000
Age	30-60
Household Language	English
Race	White
Filing Status	Single
Number of Children	0
Gender	Split evenly between male/female

3.1 States that are most impacted

This general profile can be broken down further by demographic category to see which states are most affected. In terms of age, Utah, North Dakota, and South Dakota had the highest proportion (>35%) of people younger than 30 years old in urban areas. For other states, the range for younger than 30 tended to be from 22-28%, with 65-72% falling under the 30-60 age

category. In Florida and Pennsylvania, over 70% of the 4x poverty population in urban areas was older than 60. In terms of tax filing status, Rhode Island, Massachusetts, Vermont, Connecticut, Colorado, and New Hampshire were states where more than 27% of the 4X poverty group in rural areas filed their taxes as single. For most rural areas of states, about 50-60% filed as married jointly, with a very low percentage filing as single. Hawaii, Alaska, South Carolina, Mississippi, California, and New Mexico had over 16% of the 4x poverty population in rural areas file taxes as head of household. Washington DC had over 49% of the 4X poverty group in urban areas file as single. Gender was relatively split evenly throughout the states, however some notable characteristics: in Colorado, Nevada, and Minnesota there were slightly more men. In Washington DC, Connecticut, and Rhode Island there were slightly more women. In terms of number of children, in West Virginia over 50% of their 4X poverty population in rural areas had no children. For most other states, the cutoff for rural areas was generally between 40-50% with no children. In Utah, more than 48% of 4X poverty in rural and urban areas had two or more children, where typically other states were about 30-40% with two or more children. In Washington DC, North Dakota, Maine, South Dakota, and Kentucky over 50% in urban areas had no children. In terms of race, in most rural areas over 80% were Caucasian, while in urban areas about 60% were Caucasian. The extremes for rural areas were as follows: In Hawaii over 29% were Asian, in South Carolina and Mississippi over 35% were African American, in Texas California, and New Mexico over 25% were Hispanic. The extremes for urban areas were similar: In Hawaii over 44% were Asian, in Washington DC over 64% were African American, in New Mexico, California, and Texas over 38% were Hispanic. Household language characteristics for states were similar to that of the race category. For most states, in rural areas 80-90% spoke English, while in urban areas 70-80% spoke English. The extremes for rural areas were as follows: In New Mexico, California, and Texas over 30% spoke Spanish as their household language. In Louisiana, over 13% spoke indo-European languages at their home, and in Hawaii over 30% spoke Asian- pacific languages. For urban areas: In New Mexico, California, and Texas, over 40% spoke Spanish in their homes. In Rhode Island, Massachusetts, Connecticut, New York, New Jersey, and New Hampshire over 10% spoke indo- European in their homes. Again Hawaii had over 43% speaking Asian pacific as their household language. In terms of income, the break downs for the states were as follows:

Table 2: Rural Population Income Distributions	
Income Bin	**Population Proportion Range**
$0-$15,000	30-36%
$15,000-$30,000	40-49%

$30,000-$50,000	15-25%
$50,000-$80,000	2-5% *exceptions: UT, CT, NV, RI
$80,000-$120,000	0-4% *exceptions: HI, UT, CA, AK
$120,000+	0-4% *exceptions DE, HI

Table 3: Urban Population Income Distributions	
Income Bin	**Population Proportion Range**
$0-$15,000	25-35%
$15,000-$30,000	40-50%
$30,000-$50,000	15-25%
$50,000-$80,000	3-6.5% *exceptions: UT, NJ, IL, MI
$80,000-$120,000	0-5% *exceptions: HI, UT, CA, NY, NJ, IL
$120,000+	0-7% *exceptions HI, CA, NY

3.2 Subgroup Analysis

The focus population of people between 133 and 400 percent poverty can be broken down even further into subgroups to get a more detailed understanding of this population's characteristics. Also, according to the health care reform, certain subgroups will qualify for different subsidies than others: (A) IN GENERAL.—The reduction in cost-sharing under this subsection shall first be achieved by reducing the applicable out-of pocket limit under section 1302(c)(1) in the case of— (i) an eligible insured whose household income is more than 100 percent but not more than 200 percent of the poverty line for a family of the size involved, by two-thirds; (ii) an eligible insured whose household income is more than 200 percent but not more than 300 percent of the poverty line for a family of the size involved, by one-half; and (iii) an eligible insured whose household income is more than 300 percent but not more than 400 percent of the poverty line for a family of the size involved, by one-third [1]. The subgroups are broken out as follows: 101-132%, 133-149%, 150-199%, 200-249%, 250-299%, 300-349%, and 350-400%. The socio-demographics used to analyze these subgroups were income, age, gender, household language, race, tax filing status, and number of kids. In order to show more specifically who falls into these subgroups, tables for each subgroup are shown below that include the categories with the highest proportions of people for each demographic variable. Full tables containing all states and their associated profiles can be found in the appendix.

Table 4: 101-132% Poverty Demographic Profile	
Demographic Variable	**Population Proportion**
Income	71.48% $0-$15k
Age by income	57.68% Age 30-60, $0-$15k
Gender by income	54.38% Female, $0-$15k
Household Language by income	43.93% English,$0-$15k
Race by income	34.71% White, $0-$15k
Filing Status by income	29.70% Single, $0-$15k
Kids by income	38.17% No Kids, $0-$15k

Table 5: 133-149% Poverty Demographic Profile	
Demographic Variable	**Population Proportion**
Income	59.64% $0-$15k
Age by income	32.00% Age 30-60, $0-$15k
Gender by income	31.30% Female, 28.34% Male, $0-$15k
Household Language by income	36.00% English, $0-$15k
Race by income	29.41% White, $0-$15k
Filing Status by income	26.95% Single, $0-$15k
Kids by income	34.37% 0 Kids, $0-$15k

Table 6: 150-199% Poverty Demographic Profile	
Demographic Variable	**Population Proportion**
Income	44.57%@$0-$15k, 43.94% @$15-$30k
Age by income	28.49% @ Age 30-60, $15-$30k
	23.52% @ Age30-60, $0-$15k
Gender by income	24.68% Female, $0-$15k
	22.17% Male, $15-$30k
Household Language by income	28.32% English, $15-$30k
	27.05% English, $0-$15k

Race by income	22.32% White, $15-$30k
	22.18% White, $0-$15k
Filing Status by income	19.64% Married Filing Jointly, $15-$30k
Kids by income	22.77% 0 Kids, $0-$15k

Table 7: 200-249% Poverty Demographic Profile	
Demographic Variable	**Population Proportion**
Income	53.46% @ $15-$30k, 27.31% @$0-$15k,
Age by income	33.77% @ Age 30-60, $15-$30k
Gender by income	27.96% Male, $15-$30k
	25.51% Female, $15-$30k
Household Language by income	37.34% English, $15-$30k
Race by income	30.84% White, $15-$30k
Filing Status by income	22.2% Single, $15-$30k
Kids by income	28.73% 0 Kids, $15-$30k

Table 8: 250-299% Poverty Demographic Profile	
Demographic Variable	**Population Proportion**
Income	48.35% @ $15-$30k
Age by income	31.08% @ Age 30-60, $15-$30k
Gender by income	22.96% Female, $15-$30k
	25.39% Male, $15-$30k
Household Language by income	35.09% English, $15-$30k
Race by income	30.00% White, $15-$30k
Filing Status by income	22.09% Single, $15-$30k
	18.8% Married Filing Jointly, $15-$30k
Kids by income	29.12% 0 Kids, $15-$30k

Table 9: 300-349% Poverty Demographic Profile	
Demographic Variable	**Population Proportion**
Income	47.41% @ $15-$30k,
	22.30% @$30-50k
Age by income	31.17% @ Age 30-60, $15-$30k
Gender by income	24.37% Female, $15-$30k
	23.04% Male, $15-$30k
Household Language by income	35.96% English, $15-$30k
Race by income	31.47% White, $15-$30k
Filing Status by income	17.57% Married Filing Jointly, $15-$30k

	24.21% Single, $15-$30k
Kids by income	30.95% 0 Kids, $15-$30k

Table 10: 350-400% Poverty Demographic Profile	
Demographic Variable	**Population Proportion**
Income	41.40% @$30-$50k
	25.74% @ $15-$30k
Age by income	31.29% @ Age 30-60, $30-$50k
Gender by income	17.63% Female, $30-$50k
	23.77% Male, $30-$50k
Household Language by income	32.86% English, $30-$50k
Race by income	29.90% White, $30-$50k
Filing Status by income	18.85% Single, $30-$50k
	16.96% Married Filing Jointly, %30-$50k
Kids by income	23.81% 0 Kids, $30-$50k

According to these tables, the people that will benefit most from these subsidies seem to have income between $0-$15k for the lower subgroups, $15-$30k for the middle subgroups, and $30-$50k for the higher subgroups. This makes sense intuitively because poverty status is calculated using income. Also, a majority of these people are between the ages of 30 and 60, which means they are somewhere between the middle and end of their careers depending on their occupation. In terms of gender, the population was split evenly amongst males and females. Most people's household language was English and most people's race was white. In terms of filing status, a majority of this population filed as single while a close second was people who filed taxes as married jointly. Finally, a majority of this population had no kids. Now that there is understanding of what types of people make up this population, the next step is to understand the dynamics.

4 Population Dynamics

To determine who is moving in and out of this population, the groups just above and below the target 4X group were observed. The group just below was people with poverty status between 100-132% of the poverty threshold, and the group just above was people with poverty status between 401-405%. Since poverty status is based on family size and income, these "above" and "below" subgroups were broken down by (income*kids) segments at the state level. There are 3 categories of number of children; according to the bin classifications a person either has no children, one child, or two and more children. The breakdowns for the below group (100-

132%) for income and number of kids are as follows: 71.48% had income in the $0-$15,000 range, and 67.23% had no kids. For the above group (401-405%): 58.69% had income in the $30,000-$50,000 range, and 64.74% had no kids. For both groups, roughly 60% of the people in the group were between age 30 and 60. There are a few basic relationships between income, number of children, and poverty status. As income levels increase, poverty status increases along with it. As the number of children increases, poverty status decreases assuming that income level remains constant. According to the national center for health statistics, in 2000 there were approximately 1,475,952 births for the age category 30-60 [2]. Most births occurred from ages 30-35, the birth total was estimated at 929,278 for this age period [2]. This implies that people turning 30 and moving into the 30-60 age range are most likely to have kids from age 30-35. Assuming their income stays constant, they are actually moving out of poverty in the other direction towards the poverty threshold i.e. towards 100% poverty. If their income increases along with their children, they are moving into 4X poverty away from 100% poverty. The following is a table showing the poverty cutoffs for the year 2000 based on income and number of children:

Table 11: Poverty Threshold Guideline for year 2000		
U.s department of health and human services: the 2000 hhs poverty guidelines. (2000)		
Family Size	48 Contiguous States and D.C.	Alaska	Hawaii
1	$8,350	$10,430	$9,590
2	$11,250	$14,060	$12,930
3	$14,150	$17,690	$16,270
4	$17,050	$21,320	$19,610
5	$19,950	$24,950	$22,950
6	$22,850	$28,580	$26,290
7	$25,750	$32,210	$29,630
8	$28,650	$35,840	$32,970

The following is an example of somebody moving out: The poverty threshold for a single person is $8,350. Assume a single person is at 200% poverty, putting them within the 4X poverty group 133-400%. This would make their income $16,700. If this single person were to get married, have one child, and maintain the same income, their family size would be three with income $16,700. The 100% poverty income cutoff for a family of three is $14,150(assuming the person doesn't live in Alaska or Hawaii) [3]. This same person who now has a spouse and child would now be at 118% poverty and would have moved out of 400% poverty. Essentially there are 4 different possible scenarios for moving in and out of 4X poverty: 1) Moving out of 4X poverty to a lower poverty group(less than 133%): A person maintains the same income and increases family size by either getting married or having kids. 2) Moving out of 4X poverty to a higher poverty group (Greater than 400%): Increasing income and not increasing family size, or increasing income at a greater rate than the increase in family size. 3) Moving in to 4X poverty from a lower group(less than 133%): If income is increasing at a faster rate than family size. 4)

Moving in to 4X poverty from a higher group (greater than 400%): If family size is increasing at a faster rate than income.

The following are results from census

Table 12: 0 Kids, 100-132% Poverty

State	$0-$15k Proportion
North Dakota	50.71%
Minnesota	48.60%
New Hampshire	48.44%
Wisconsin	48.43%
Massachusetts	48.20%
Maine	48.19%
District of Columbia	48.17%
Vermont	47.96%
Oregon	46.69%
South Dakota	46.69%

Table 13: 1 Kid, 100-132% Poverty

State	$0-$15k Proportion
Rhode Island	17.71%
Tennessee	17.23%
Mississippi	17.08%
South Carolina	16.93%
New Hampshire	16.85%
New Mexico	16.77%
Virginia	16.52%
North Carolina	16.28%
Kentucky	16.05%
Louisiana	16.04%

data that show which states are most affected in each of these subgroups based on their income and number of children. The income level chosen is based on the majority breakdowns listed above, for example, the 100-132% group had 71.48% of the entire group with income between $0 and $15,000. The tables listed below are for the group just below the target 4X population, which are those with poverty status between 100-132% of the poverty threshold in 2000.

Table 14: 2 or more Kids, 100-132% Poverty

State	$0-$15k Proportion
California	25.05%
Alaska	22.87%
Texas	21.37%
Hawaii	21.30%
Utah	20.89%
Mississippi	20.87%
South Dakota	20.52%
Arizona	20.07%
Wyoming	20.06%
Montana	19.31%

Based on these results, we can see the top 10 states by number of children for the income level $0-$15k that are likely to move in or out of the 4X poverty population from the lower edge of the target group. For this particular group 100-132%, the table for people with 0 kids shows that they are most likely to move in to 4X poverty by an income increase. For example, in North Dakota, 50.71% of the people with 100-132% poverty status had 0 children, so if all of those people were to move up in income but not have any children, 50.71% of the entire 100-132% population in North Dakota would now be in 4X poverty. If this were to happen and this new set of people qualifying for 4X poverty were to have kids, they could then move back out of 4X poverty down to their original 100-132% poverty group, depending on the number of children they have and income level. For the other

tables that show percentages of people with 1 child, and 2 or more children, these people also can only move in to 4X poverty by having an increase in income. The following tables are for the group just above the target 4X population, which are those with poverty status between 401-405% of the poverty threshold in 2000.

Table 15: 0 Kids, 401-405% poverty

State	$30-$50k Proportion
District of Columbia	72.33%
New Mexico	53.54%
Colorado	52.47%
Connecticut	51.42%
Maryland	51.19%
Massachusetts	50.80%
Nevada	50.12%
New York	49.63%
California	49.05%
Alaska	48.24%

Table 16: 1 Kid, 401-405% poverty

State	$30-$50k Proportion
North Dakota	10.46%
Arkansas	10.43%
Delaware	7.73%
Kansas	7.45%
South Carolina	7.16%
Kentucky	7.06%
Alaska	7.03%
Washington	6.90%
New Hampshire	6.74%
Missouri	6.74%

Table 17: 2 or more Kids, 401-405% poverty	
State	$30-$50k Proportion
Idaho	12.53%
Vermont	12.43%
Wyoming	11.22%
Indiana	9.97%
Nebraska	9.74%
North Dakota	9.44%
Utah	9.35%
Maryland	9.32%
Arizona	9.26%
Alaska	9.13%

Similar to the results from the 100-132% group, we can see the top 10 states by number of children for the income level $0-$15k that are likely to move in or out of the 4X poverty population from the upper edge of the target group. For this particular group 400-405%, the table for people with 0 kids shows that they are most likely to move out of 4X poverty by an income increase. For example, in DC, 72.33% of the people with 400-405% poverty status had 0 children, so if all of those people were to move up in income but not have any children, 72.33% of the entire 400-405% population in DC would now be out of 4X poverty. If this were to happen and this new set of people qualifying for 4X poverty were to have kids, they could then move back into 4X poverty down from their original 400-405% poverty group, depending on the number of children they have and income level. For the other tables that show percentages of people with 1 child, and 2 or more children, these people also can only move out of 4X poverty by having an increase in income.

4.1 Likelihood of someone moving in/out

	Table 11: 100% Poverty *U.s department of health and human services: the 2000 hhs poverty guidelines.* (2000)		
Family size	48 States	Alaska	Hawaii
1	$8,350	$10,430	$9,590
2	$11,250	$14,060	$12,930
3	$14,150	$17,690	$16,270
4	$17,050	$21,320	$19,610
5	$19,950	$24,950	$22,950
6	$22,850	$28,580	$26,290
7	$25,750	$32,210	$29,630
8	$28,650	$35,840	$32,970

Table 18: Income changes from moving into 133% Poverty					Increase to move in
48 States	Increase to move in	Alaska	Increase to move in	Hawaii	
$11,106	$2,756	$13,872	$3,442	$12,755	$3,165
$14,963	$3,713	$18,700	$4,640	$17,197	$4,267
$18,820	$4,670	$23,528	$5,838	$21,639	$5,369
$22,677	$5,627	$28,356	$7,036	$26,081	$6,471
$26,534	$6,584	$33,184	$8,234	$30,524	$7,574
$30,391	$7,541	$38,011	$9,431	$34,966	$8,676
$34,248	$8,498	$42,839	$10,629	$39,408	$9,778
$38,105	$9,455	$47,667	$11,827	$43,850	$10,880

The first scenario is that of people moving into 4X poverty from a lower level of poverty. An example of how much more income a person would need to make to move into 4X poverty is shown above. The example person starts at 100% and moves to 133%. The example shows different amounts of income based on family size required to qualify for specific poverty levels. This is a more likely case for somebody to move into 4X poverty as the starting income level is low enough where most likely a person wouldn't remain at a job paying that low for their entire working career. The age in which this happens however becomes an interesting factor, because the later someone starts working, the less time they have to move up in income. If someone aged 18 started working a job with income $8,350 at the beginning of their work career, there is a high chance that they will move up even if they stay with the same corporation they are working with. This person likely has no kids, so the amount they need to increase their income by to move into 4X poverty isn't a large quantity. However someone who makes $22,850 and has a family of 6(spouse and 4 kids), would need to increase their income by roughly $7,541 which is much more difficult, especially if they are older and have less time to move up in their career. If we go back to the example of the 18 year old, the chances of them moving into 4X poverty are high if they start their career off at 100% poverty making roughly $8,350 income. If they were to move up to a salary of about $15,000, then get married and have a kid, that person would have moved back out of 4X poverty. There is a greater chance of this happening based on age, a person in their mid 20's early 30's are most likely to have kids at that point in their lives and if they are just on the border of 4X poverty on the lower edge, the chance of that person moving out is relatively high. The upper end of the 4X poverty range, just above 400% is a somewhat different scenario:

Family size	Table 19: Income Levels by Family size at 400% Poverty for U.S states		
	48 States	Alaska	Hawaii
1	$33,400	$41,720	$38,360
2	$45,000	$56,240	$51,720
3	$56,600	$70,760	$65,080
4	$68,200	$85,280	$78,440
5	$79,800	$99,800	$91,800
6	$91,400	$114,320	$105,160
7	$103,000	$128,840	$118,520
8	$114,600	$143,360	$131,880

Family size	Table 20: Income changes from moving into 405% Poverty						
	48 States	Increase to move in	Alaska	Increase to move in	Hawaii	Increase to move in
1	$35,070	$1,670	$43,806	$2,086	$40,278	$1,918
2	$47,250	$2,250	$59,052	$2,812	$54,306	$2,586
3	$59,430	$2,830	$74,298	$3,538	$68,334	$3,254
4	$71,610	$3,410	$89,544	$4,264	$82,362	$3,922
5	$83,790	$3,990	$104,790	$4,990	$96,390	$4,590
6	$95,970	$4,570	$120,036	$5,716	$110,418	$5,258
7	$108,150	$5,150	$135,282	$6,442	$124,446	$5,926
8	$120,330	$5,730	$150,528	$7,168	$138,474	$6,594

The chances of someone moving out by income increase from 400% to a higher poverty level is similar to someone getting an increase in income to move in to the lower end. A person with small family size has a much higher chance of moving out of 4X poverty. It seems that these salaries would be more suitable for someone in their mid twenties to early 30's as an average salary, however high education would put people at the higher end of the 4X poverty range starting off at a young age, therefore increasing the chance of moving out even more. Again, age plays a big factor because it marks how much higher a person can go in their career in terms of income and the age in which family size begins to increase typically, which is around mid 20's to early 30's. The chances of someone moving back into 4X poverty thus are quite likely because most people tend to have family sizes of at least 2 or greater and don't exceed salaries of $100,000 in their career. Based on these comparisons, a person is more likely to move in to 4X poverty than they are likely to move out.

5 Outreach Methods

In order to determine ways of effectively educating the population about their benefits and making sure that people claim the proper amount of credits that they are entitled to, virtual

experiments were conducted to measure the effectiveness of interventions on compliance with various tax forms. There are various information channels as well as additional forms of media intervention that can be implemented, however for the virtual experiments the following interventions were tested on baseline conditions for tax compliance: low income tax centers, website, mail, call centers, television, radio, seminars, removing call centers, and newspaper ads. According to the data, 75.27% of the 4X poverty population reported having access to internet, 60.38% reported having newspaper access, and 84.42% were literate. There are different ways to interpret these statistics; while there is a majority with internet and newspaper access, these may not necessarily be the optimal means of educating the 4X poverty population, as a significant portion is left out if these are the only outreach tools.

5.1 Virtual Experiment Description

The purpose of this experiment was to determine the effects of government interventions on taxpayer compliance. The interventions were intended to aid taxpayers in either leading them to information related to filing taxes such as website ads and television ads, or interventions such as walk in centers where taxpayers can go and get help with their taxes. The experiment process began with collecting initial data for baseline conditions. This involved obtaining samples of 4000 agents for 297 cities from Census 2000 data to develop input files that contain city population characteristics. Information constraints for each agent included literacy, newspaper, and internet use were linked to socio demographic attributes of these agents. These two sets of input data were then run through a CASOS software tool called Construct in order to project how this network of taxpayers evolves based on belief and knowledge exchanges between agents. To summarize the order of events of the experiment, starting with the pipeline to Construct:

- Prepare Census Data by binning variables and cleaning data for sampling
- Draw random samples of 4000 agents for 297 cities
- Overlay social network per agent attributes
- Align Initial Agent knowledge with agent attributes
- From these overlays generate input decks for Construct
- Distribute Simulations for cities on Condor Cluster which means using computing power from several CASOS machines and effectively queuing runs so that they run at optimal speed

Once the runs were completed successfully, the virtual experiment data was cleaned to categorize each intervention. Then summary statistics were run and the results of the data were analyzed. Before discussing the results of the experiment, a brief description of what Construct is and how virtual experiment data is generated is listed below.

5.2 Construct Description

Construct is a software tool developed by CASOS that models agents based on real data and creates simulated results that determine how networks change given a specific scenario or set of criteria. Construct uses transactive knowledge and beliefs to create interactions between agents and based on these interactions, the overall network of agents evolves into what is to be the expected real life outcome of an impact on the baseline data. Such impacts can include government interventions such as newspaper or radio advertisements, a new law or regulation for an organization, and any other scenario that involves people sharing knowledge with each other. The current experiment for this report was the impact of government interventions on tax payer compliance. The goal was to determine how taxpayers react to interventions such as newspaper

and television ads in relation to filing taxes. Construct was used to simulate the change in compliance, intentional, and inadvertent errors based on real tax payer data and socio demographic attributes for a sample of 4000 agents.

5.3 Experiment Results

The following graph based on virtual experiment results shows the effects of interventions on tax compliance for the 4X poverty group, and can be used to determine which interventions would best help this group:

Figure 1:   Least Square Means of compliance for 4X poverty population with 95% confidence intervals
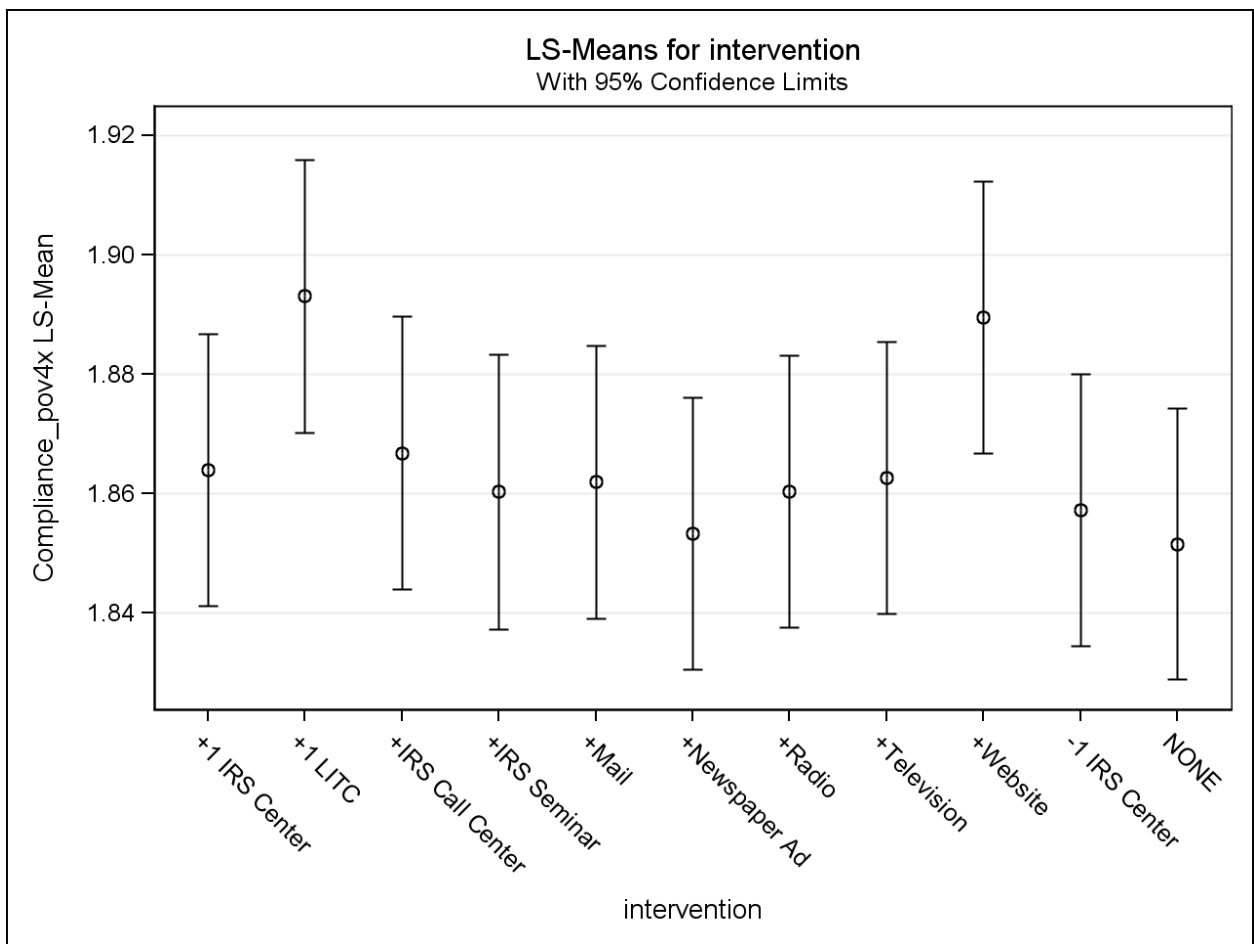
The y-axis shows the overall mean compliance on taxes while the x-axis displays each intervention. According to the confidence intervals on the chart, comparing each mean to the NONE value on the x-axis, all interventions increased compliance. The interventions that most

influenced compliance were the website and the LITC. Another means of educating the 4X population about their potential healthcare subsidies is through software called Insight. Insight is a tool that can be used to look up tax related information and population demographics at the city, state, and region levels. A person who qualifies for 4X poverty could benefit using this software, as they would be able to look up their city or state, and find information such as locations for tax payer assistance centers, compliance and error trends, general demographics, and much more detailed information about their location.

The interventions used included additional website, printed information ads, mailings, radio ads, call centers, television ads, seminars, TACs(Tax Assistance Center), LITCS, and the removal of a TAC currently present in a given city. The baseline results for compliance were as follows:

Figure 2: Percent distribution of compliant tax returns for 297 cities for general population

Tax Return=Compliant
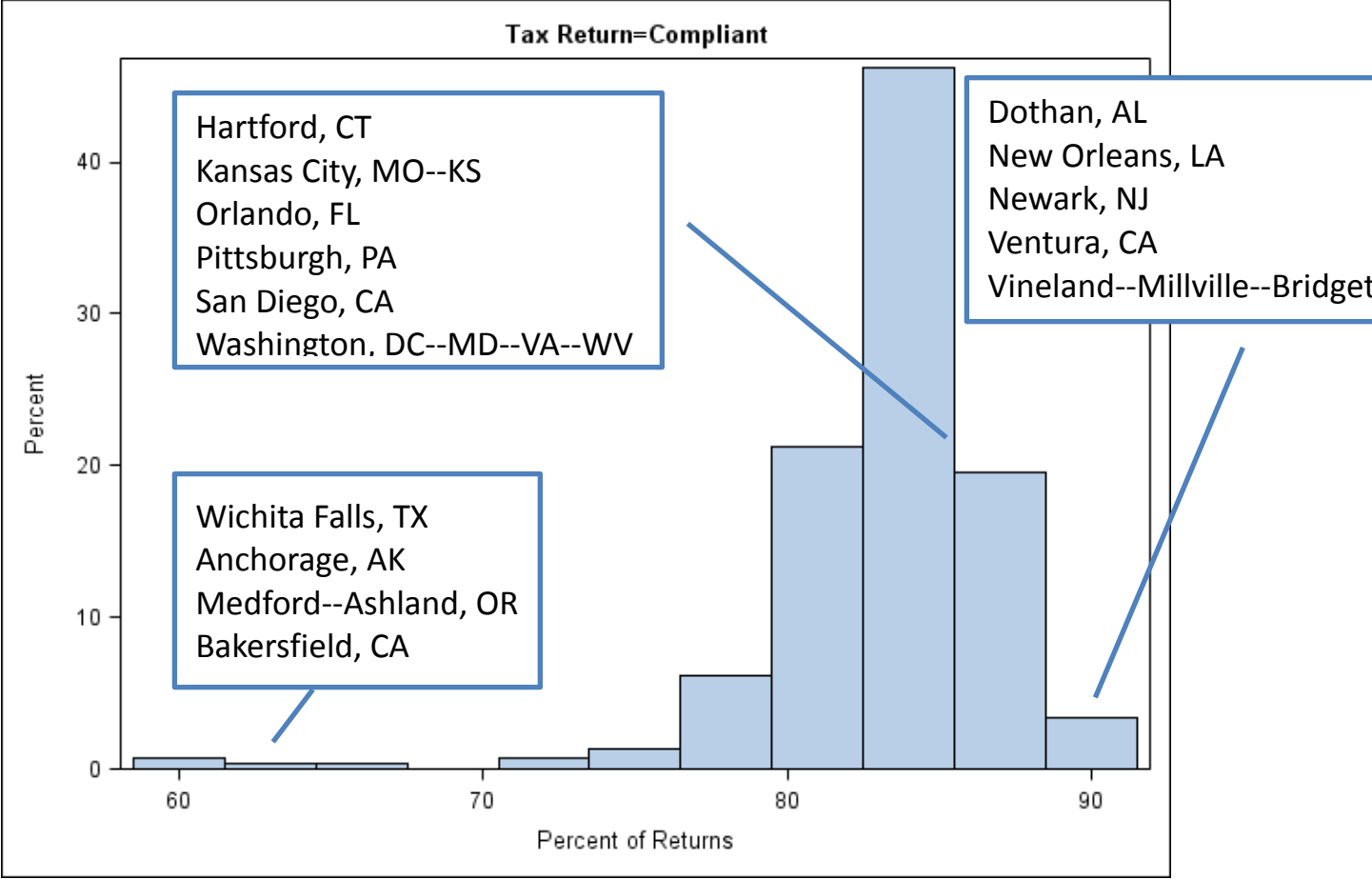
According to the graph of the overall distribution of compliant returns for all cities without interventions, the average compliance rate was about 85%. Cities that had high compliance rates were Dothan, New Orleans, Newark, Ventura, and Vineland. Cities with average compliance rates were Hartford, Kansas City, Orlando, Pittsburgh, San Diego, and Washington DC. Cities with low compliance rates were Wichita falls, Anchorage, Medford, and Bakersfield. The 4X poverty group had similar results to the overall group, the graph is shown below:

Figure 3: Comparison of compliance between 4X population and general population.
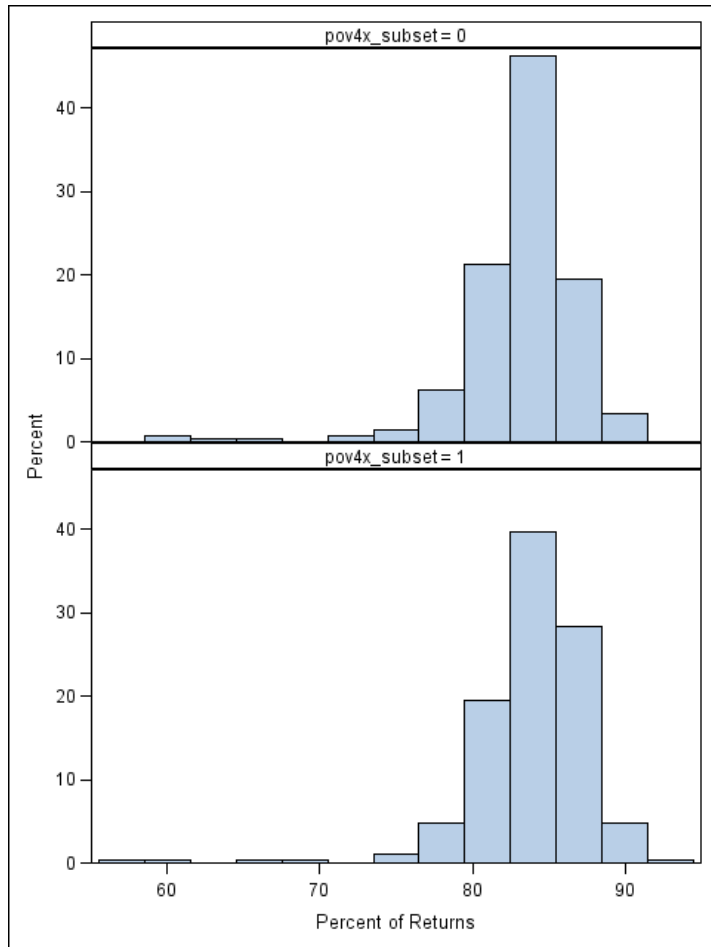
After adding interventions, the results of the virtual experiments can be shown by the graphs below:

Figure 4: The effects of government interventions on compliance by tax preparer type

Tax Return = Compliant
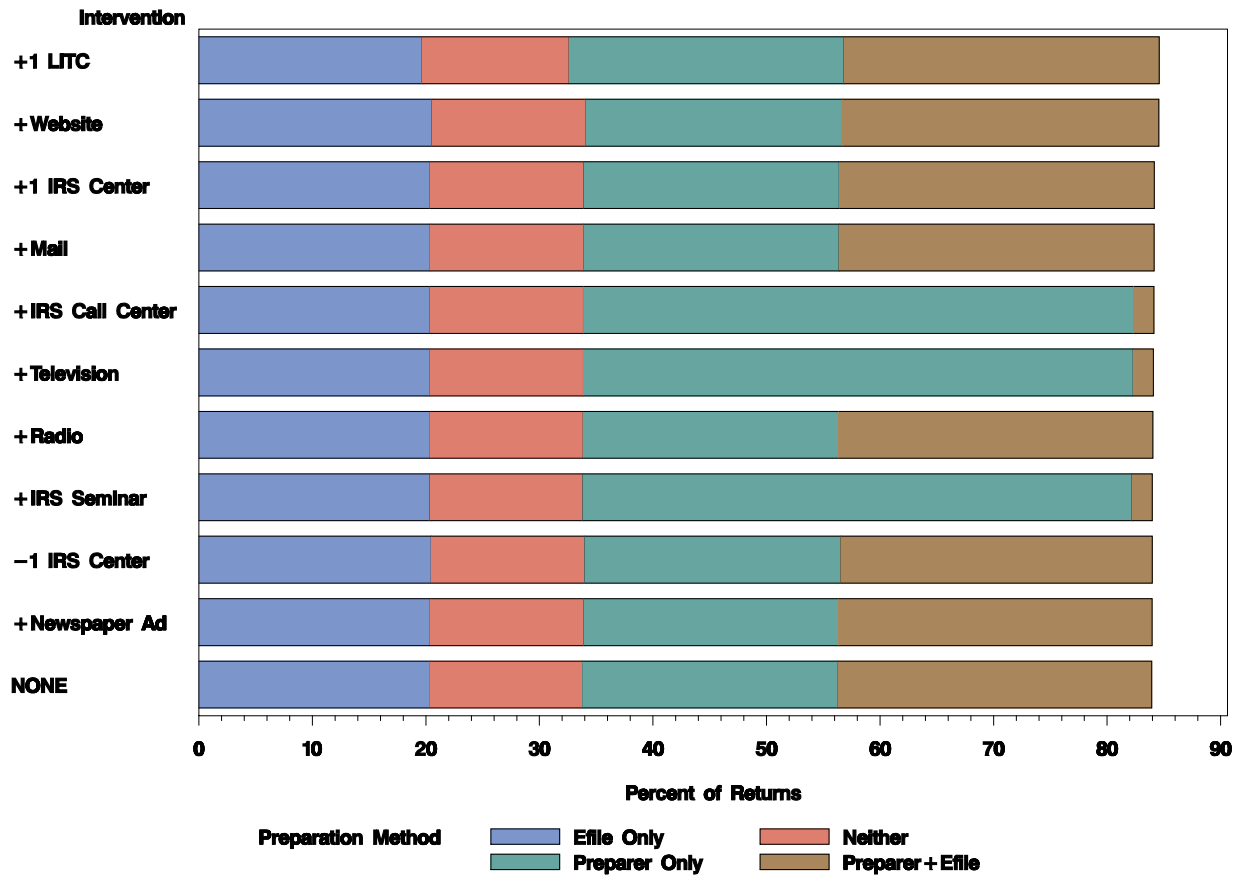
According to this chart, the colors indicate what percentage of compliant returns was completed by a preparer and the type of preparation. The bottom bar of the chart indicates the baseline conditions and the bars above indicate the effects of interventions on compliance. In comparison, the difference is subtle but slightly improved compliance rates for each preparation method. Seminar, Television, and Call center had great increases in compliance for returns that used a preparer.

6 Outreach Methods and Future Research

Insight is particularly useful in obtaining taxpayer information and government interventions have shown to aid in increasing taxpayer compliance; however there are limitations to these methods of outreach. There are significant proportions of people without internet access, newspaper access, and literacy:

Figures 5-7: Proportion of 4X poverty population with internet access, newspaper access, and literacy
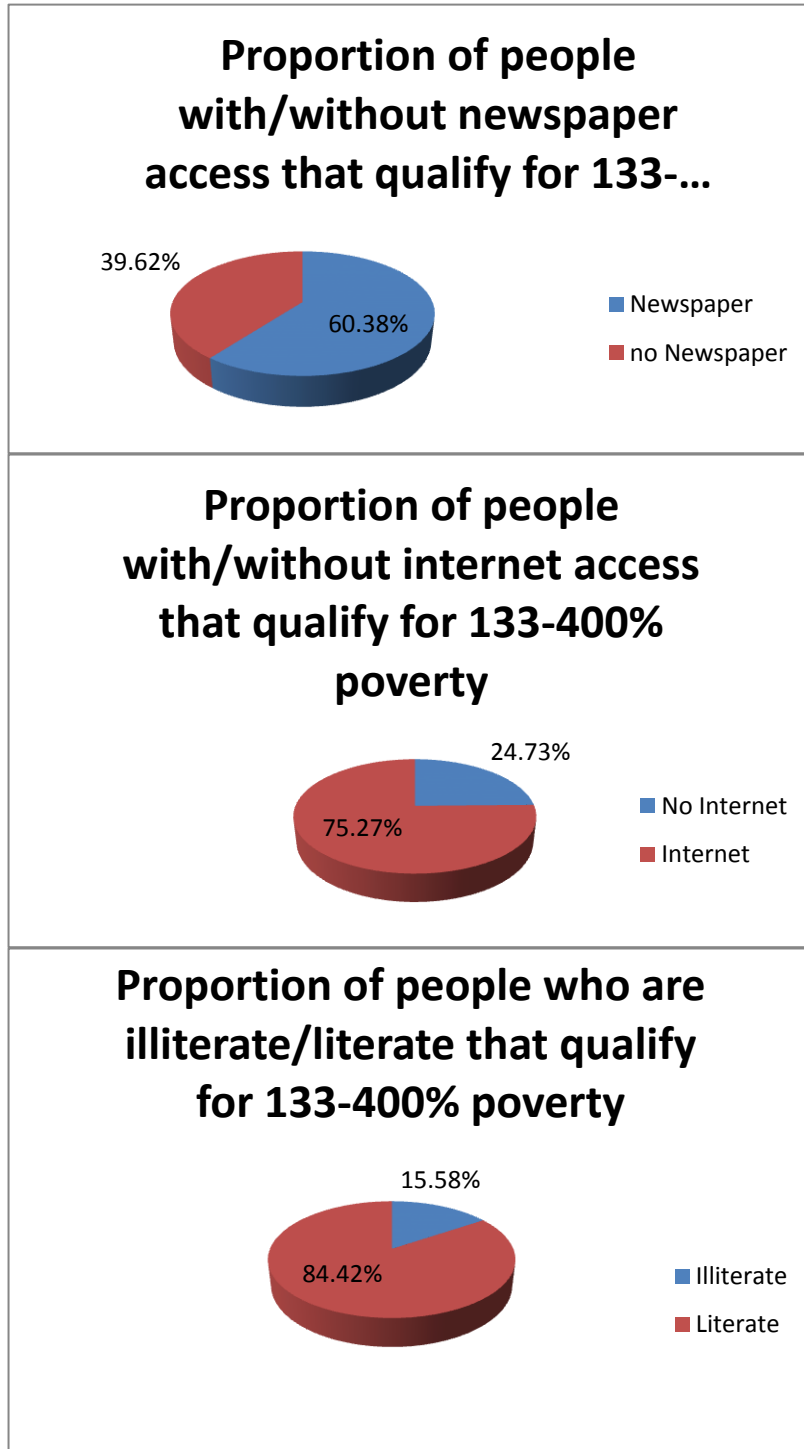
These charts show based on input data used for the virtual experiment, that 15.58% of the 4X population is illiterate, 24.73% have no internet access, and 39.62% have no newspaper access. Another limitation includes knowledge of current health insurance plans of the 4X poverty population. It is possible that one person in family has health insurance that covers the entire

family, and if one person in the family qualifies for 4X poverty, it would be complicated to determine how they would receive the benefit, if they would qualify, and whether the method of outreach would reach them since someone else in the other family already is covered by health insurance. Future research is required to be done in this area once more details are available regarding how the reception of benefits will be implemented into the PPACA.

7 Conclusion

The patient protection and affordable care act requires careful examination of the U.S population in order to be implemented effectively. Based on available data, we have examined several detailed methods of identifying who falls into this population at city and state levels. This report shows details of urban and rural areas by state, however does not include specific rural information, just a totals for a given state. The act currently requires state level analysis; however as more changes to the legislature of this act occur, it is possible that populations will need to be broken down further to accommodate new requirements or changes. We have also identified four different means of moving in and out of this population and estimates of likelihoods of moving out in these four different scenarios. It is most likely for a person to move in from a lower level of poverty below 133% into the 4X poverty group, or for a person to move out to a lower level of poverty just below 133%. Most focus should be on people near the poverty threshold 100% rather than above the 4X poverty level (>400%), since income levels have more room to change at that position. Finally, we have determined that government interventions increased compliance in the 4X poverty group and that Insight would be a useful tool in aiding taxpayers to determine whether they qualify for 4X poverty. There are limitations on knowledge of the population's current health benefits, in other words whether or not people already have health insurance and would require tax credits. As of right now, the eligibility requirements state that a person cannot receive health insurance from other programs or from their employer in order to qualify [1]. While there are specific details regarding implementation of this act that still have questions unanswered, the foundation to mitigating this problem has been set.

8 References

[1] Department of Health and Human Services, Healthcare. (2010). *Patient and protection affordable care act* (Pub L. 111-148,124). Washington, DC

[2] *National center for health statistics: birth statistics*. (2009). Retrieved from www.cdc.gov/nchs/births.htm.

[3] *U.s department of health and human services: the 2000 hhs poverty guidelines*. (2000). Retrieved from http://aspe.hhs.gov/poverty/00poverty.htm

[4] U.S Census Bureau, (2000). *2000 pums data* Retrieved from http://www.census.gov/main/www/pums.html

9 Appendix

101-132% of Federal Poverty Level							
State	**Age**	**Filing Status**	**Gender**	**Household Language**	**Income**	**Children**	**Race**
Alabama	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Alaska	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Arizona	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
Arkansas	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
California	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
Colorado	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Connecticut	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Delaware	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
DC	30<Age<60	Single	female	English	$0-$15k	No Kids	Black
Florida	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Georgia	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Hawaii	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	Other
Idaho	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Illinois	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Indiana	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Iowa	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Kansas	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Kentucky	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Louisiana	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Maine	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Maryland	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Massachusetts	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Michigan	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Minnesota	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Mississippi	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	Black
Missouri	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Montana	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Nebraska	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Nevada	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
New Hampshire	30<Age<60	Single	female	English	$0-$15k	No Kids	White
New Jersey	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
New Mexico	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
New York	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White

State	Age	Filing Status	Gender	Household Language	Income	Children	Race
North Carolina	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
North Dakota	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Ohio	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Oklahoma	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Oregon	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Pennsylvania	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Rhode Island	30<Age<60	Single	female	English	$0-$15k	No Kids	White
South Carolina	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
South Dakota	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Tennessee	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Texas	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
Utah	Age<30	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Vermont	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Virginia	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Washington	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
West Virginia	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Wisconsin	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Wyoming	30<Age<60	Married Jointly	female	English	$0-$15k	1 Kid	White

133-149% of Federal Poverty Level							
State	Age	Filing Status	Gender	Household Language	Income	Children	Race
Alabama	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Alaska	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Arizona	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Arkansas	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
California	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
Colorado	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Connecticut	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Delaware	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
DC	30<Age<60	Single	female	English	$0-$15k	No Kids	Black
Florida	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Georgia	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Hawaii	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	Other
Idaho	30<Age<60	Married Jointly	male	English	$0-$15k	2 or More Kids	White
Illinois	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Indiana	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Iowa	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Kansas	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Kentucky	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White

State	Age	Marital Status	Gender	Language	Income	Kids	Race
Louisiana	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Maine	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Maryland	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Massachusetts	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Michigan	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Minnesota	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Mississippi	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	Black
Missouri	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Montana	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Nebraska	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Nevada	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	Hispanic
New Hampshire	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
New Jersey	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
New Mexico	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
New York	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
North Carolina	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
North Dakota	30<Age<60	Married Jointly	male	English	$0-$15k	No Kids	White
Ohio	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Oklahoma	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Oregon	Age<30	Married Jointly	female	English	$0-$15k	No Kids	White
Pennsylvania	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Rhode Island	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
South Carolina	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
South Dakota	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Tennessee	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Texas	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
Utah	Age<30	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Vermont	30<Age<60	Single	female	English	$0-$15k	No Kids	White
Virginia	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Washington	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
West Virginia	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Wisconsin	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Wyoming	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White

150-199% of Federal Poverty Level							
State	Age	Filing Status	Gender	Household Language	Income	Children	Race
Alabama	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Alaska	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Arizona	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Arkansas	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
California	30<Age<60	Married Jointly	male	Spanish	$0-$15k	2 or More Kids	Hispanic
Colorado	30<Age<60	Married Jointly	male	English	$0-$15k	No Kids	White
Connecticut	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Delaware	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
DC	30<Age<60	Single	female	English	$15-$30k	No Kids	Black
Florida	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Georgia	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Hawaii	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	Asian
Idaho	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Illinois	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Indiana	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Iowa	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Kansas	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Kentucky	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Louisiana	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Maine	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Maryland	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Massachusetts	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Michigan	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Minnesota	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Mississippi	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Missouri	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Montana	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Nebraska	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Nevada	30<Age<60	Married Jointly	male	English	$15-$30k	2 or More Kids	White

State	Age	Filing Status	Gender	Household Language	Income	Children	Race
New Hampshire	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
New Jersey	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
New Mexico	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
New York	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
North Carolina	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
North Dakota	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Ohio	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Oklahoma	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Oregon	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Pennsylvania	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Rhode Island	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
South Carolina	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
South Dakota	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Tennessee	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Texas	30<Age<60	Married Jointly	female	Spanish	$0-$15k	2 or More Kids	Hispanic
Utah	30<Age<60	Married Jointly	female	English	$0-$15k	2 or More Kids	White
Vermont	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
Virginia	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Washington	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White
West Virginia	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	Hispanic
Wisconsin	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Wyoming	30<Age<60	Married Jointly	female	English	$0-$15k	No Kids	White

200-249% of Federal Poverty Level							
State	Age	Filing Status	Gender	Household Language	Income	Children	Race
Alabama	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Alaska	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Arizona	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Arkansas	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
California	30<Age<60	Married Jointly	male	Spanish	$15-$30k	2 or More Kids	Hispanic
Colorado	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Connecticut	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Delaware	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
DC	30<Age<60	Single	female	English	$15-$30k	No Kids	Black
Florida	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Georgia	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Hawaii	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	Asian

Idaho	30<Age<60	Married Jointly	male	English	$15-$30k	2 or More Kids	White
Illinois	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Indiana	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Iowa	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Kansas	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Kentucky	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Louisiana	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Maine	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Maryland	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Massachusetts	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Michigan	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Minnesota	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Mississippi	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Missouri	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Montana	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Nebraska	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Nevada	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
New Hampshire	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
New Jersey	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
New Mexico	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	Hispanic
New York	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
North Carolina	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
North Dakota	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Ohio	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Oklahoma	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Oregon	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Pennsylvania	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Rhode Island	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
South Carolina	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
South Dakota	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Tennessee	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Texas	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Utah	30<Age<60	Married Jointly	female	English	$15-$30k	2 or More Kids	White
Vermont	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Virginia	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Washington	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
West Virginia	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Wisconsin	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Wyoming	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White

				250-299% of Federal Poverty Level			
State	**Age**	**Filing Status**	**Gender**	**Household Language**	**Income**	**Children**	**Race**
Alabama	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Alaska	30<Age<60	Married Jointly	male	English	$15-$30k	2 or More Kids	White
Arizona	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Arkansas	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
California	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Colorado	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Connecticut	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Delaware	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
DC	30<Age<60	Single	female	English	$15-$30k	No Kids	Black
Florida	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Georgia	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Hawaii	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	Asian
Idaho	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Illinois	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Indiana	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Iowa	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Kansas	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Kentucky	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Louisiana	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Maine	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Maryland	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Massachusetts	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Michigan	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Minnesota	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Mississippi	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Missouri	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Montana	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Nebraska	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Nevada	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
New Hampshire	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
New Jersey	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
New Mexico	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
New York	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
North Carolina	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
North Dakota	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Ohio	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Oklahoma	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Oregon	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White

State	Age	Filing Status	Gender	Household Language	Income	Children	Race
Pennsylvania	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Rhode Island	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
South Carolina	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
South Dakota	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Tennessee	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Texas	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Utah	30<Age<60	Married Jointly	male	English	$15-$30k	2 or More Kids	White
Vermont	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Virginia	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Washington	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
West Virginia	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Wisconsin	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Wyoming	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White

300-349% of Federal Poverty Level							
State	Age	Filing Status	Gender	Household Language	Income	Children	Race
Alabama	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Alaska	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Arizona	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Arkansas	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
California	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Colorado	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Connecticut	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Delaware	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
DC	30<Age<60	Single	female	English	$15-$30k	No Kids	Black
Florida	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Georgia	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Hawaii	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	Asian
Idaho	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Illinois	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Indiana	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Iowa	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Kansas	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Kentucky	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White

Louisiana	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Maine	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Maryland	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Massachusetts	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Michigan	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Minnesota	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Mississippi	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Missouri	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Montana	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Nebraska	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Nevada	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
New Hampshire	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
New Jersey	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
New Mexico	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
New York	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
North Carolina	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
North Dakota	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Ohio	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Oklahoma	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Oregon	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Pennsylvania	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Rhode Island	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
South Carolina	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
South Dakota	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Tennessee	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Texas	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Utah	30<Age<60	Married Jointly	male	English	$15-$30k	2 or More Kids	White
Vermont	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Virginia	30<Age<60	Married Jointly	female	English	$15-$30k	No Kids	White
Washington	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
West Virginia	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Wisconsin	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Wyoming	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White

350-400% of Federal Poverty Level							
State	Age	Filing Status	Gender	Household Language	Income	Children	Race
Alabama	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Alaska	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Arizona	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White

Arkansas	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
California	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Colorado	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Connecticut	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Delaware	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
DC	30<Age<60	Single	female	English	$30-$50k	No Kids	Black
Florida	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Georgia	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Hawaii	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	Asian
Idaho	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Illinois	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Indiana	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Iowa	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Kansas	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Kentucky	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Louisiana	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Maine	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Maryland	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Massachusetts	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Michigan	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Minnesota	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Mississippi	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Missouri	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Montana	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Nebraska	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Nevada	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
New Hampshire	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
New Jersey	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
New Mexico	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
New York	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
North Carolina	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
North Dakota	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Ohio	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Oklahoma	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Oregon	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Pennsylvania	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Rhode Island	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
South Carolina	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
South Dakota	30<Age<60	Married Jointly	male	English	$15-$30k	No Kids	White
Tennessee	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Texas	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White

State	Age	Filing Status	Gender	Language	Income	Kids	Race
Utah	30<Age<60	Married Jointly	male	English	$30-$50k	2 or More Kids	White
Vermont	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Virginia	30<Age<60	Married Jointly	female	English	$30-$50k	No Kids	White
Washington	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
West Virginia	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Wisconsin	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White
Wyoming	30<Age<60	Married Jointly	male	English	$30-$50k	No Kids	White