

## Appendix D: Adjusted Odds of WIC Families Redeeming Their WIC Foods: Logistic Regression Model Results

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### Overall Monthly Benefit Redemptions

*Table 1. Odds of WIC Families Redeeming All Monthly Benefits, Controlling for Family Characteristics and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.46	1.43, 1.48
Nevada	1.52	1.48, 1.56
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.59	0.58, 0.60
Hispanic	1.12	1.10, 1.15
Non-Hispanic American Indian/Alaska Native	0.86	0.75, 0.97
Non-Hispanic Asian	1.96	1.88, 2.05
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.69	0.58, 0.82
Non-Hispanic Multiple Races	0.79	0.77, 0.81
<b>Geographic Location</b>		
Urban	REF	REF
Large rural	0.75	0.74, 0.77
Small rural	0.76	0.74, 0.78
Isolated	0.81	0.79, 0.83
<b>Number of Persons in Household</b>	1.15	1.15, 1.16
<b>Number of Persons Receiving WIC</b>	0.56	0.55, 0.56

*Table 2. Odds of WIC Families Redeeming All Monthly Benefits, Controlling for Family Characteristics, Food Package Categories Prescribed, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.51	1.48, 1.54
Nevada	1.56	1.52, 1.60
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.55	0.54, 0.57
Hispanic	1.14	1.12, 1.16
Non-Hispanic American Indian/Alaska Native	0.83	0.73, 0.95

	Adjusted Odds of Full Redemption	95% Confidence Interval
Non-Hispanic Asian	2.02	1.93, 2.11
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.72	0.60, 0.85
Non-Hispanic Multiple Races	0.74	0.72, 0.76
<b>Geographic Location</b>		
Urban	REF	REF
Large rural	0.77	0.75, 0.78
Small rural	0.79	0.77, 0.81
Isolated	0.83	0.81, 0.86
<b>Number of Persons in Household</b>	1.15	1.15, 1.16
<b>Number of Persons Receiving WIC</b>	0.69	0.68, 0.71
<b>Food Packages Prescribed to Family</b>		
Pregnant woman	0.33	0.32, 0.34
Breastfeeding women	0.37	0.35, 0.38
Postpartum woman	0.18	0.17, 0.19
Infant (0-5 months)	2.84	2.74, 2.95
Infant (6-11 months)	1.25	1.21, 1.28
Child (1-5 years)	0.55	0.54, 0.57

## Cash Value Benefit Redemptions

*Table 3. Odds of WIC Families Redeeming All Cash Value Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.15	1.14, 1.16
Nevada	1.29	1.27, 1.32
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.65	0.64, 0.66
Hispanic	1.31	1.29, 1.32
Non-Hispanic American Indian/Alaska Native	0.76	0.69, 0.84
Non-Hispanic Asian	1.80	1.73, 1.88
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.99	0.89, 1.11
Non-Hispanic Multiple Races	0.87	0.85, 0.88
<b>Geographic Location</b>		
Urban	REF	REF
Large rural	0.84	0.82, 0.85
Small rural	0.76	0.75, 0.77
Isolated	0.70	0.69, 0.72

	Adjusted Odds of Full Redemption	95% Confidence Interval
Number of Persons in Household	1.11	1.10, 1.11
Benefit Issuance: Dollars Prescribed	0.98	0.97, 0.98

## Cereal Redemptions

*Table 4. Odds of WIC Families Redeeming All Cereal Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.41	1.40, 1.43
Nevada	1.59	1.57, 1.62
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.60	0.60, 0.61
Hispanic	1.23	1.21, 1.24
Non-Hispanic American Indian/Alaska Native	0.84	0.76, 0.92
Non-Hispanic Asian	1.33	1.27, 1.39
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.78	0.70, 0.88
Non-Hispanic Multiple Races	0.80	0.78, 0.81
<b>Geographic Location</b>		
Urban	REF	REF
Large rural	0.86	0.85, 0.87
Small rural	0.91	0.89, 0.92
Isolated	0.95	0.93, 0.96
Number of Persons in Household	1.16	1.16, 1.17
Ounces of Cereal Prescribed	0.98	0.98, 0.98

## Cheese Redemptions

*Table 5. Odds of WIC Families Redeeming All Cheese Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.70	1.68, 1.72
Nevada	2.13	2.09, 2.17
<b>Family Race/Ethnicity*</b>		

	Adjusted Odds of Full Redemption	95% Confidence Interval
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.64	0.63, 0.65
Hispanic	1.10	1.08, 1.11
Non-Hispanic American Indian/Alaska Native	0.73	0.66, 0.81
Non-Hispanic Asian	0.67	0.64, 0.69
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.45	0.40, 0.50
Non-Hispanic Multiple Races	0.78	0.77, 0.80
<b>Geographic Location</b>		
Urban	REF	REF
Large rural	0.94	0.92, 0.95
Small rural	1.00	0.98, 1.02
Isolated	1.00	0.98, 1.03
<b>For Number of Persons in Household</b>	1.14	1.13, 1.14
<b>For Every Pound (lb.) Prescribed</b>	0.70	0.70, 0.71

## Eggs Redemptions

*Table 6. Odds of WIC Families Redeeming All Eggs Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.22	1.21, 1.24
Nevada	1.21	1.18, 1.23
<b>Family Race/Ethnicity</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.73	0.72, 0.74
Hispanic	1.42	1.39, 1.44
Non-Hispanic American Indian/Alaska Native	0.87	0.78, 0.97
Non-Hispanic Asian	1.71	1.62, 1.81
Non-Hispanic Native Hawaiian/Other Pacific Islander	1.03	0.90, 1.18
Non-Hispanic Multiple Races	0.92	0.90, 0.94
<b>Geographic Location</b>		
Urban	REF	REF
Large rural	0.88	0.87, 0.90
Small rural	0.94	0.92, 0.95
Isolated	0.98	0.96, 1.00
<b>Number of Persons in Household</b>	1.12	1.11, 1.12
<b>Dozens of Eggs Prescribed</b>	0.68	0.68, 0.69

## Juice Redemptions

*Table 7. Odds of WIC Families Redeeming Juice Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.40	1.39, 1.418
Nevada	0.92	0.91, 0.940
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.81	0.80, 0.82
Hispanic	1.13	1.11, 1.15
Non-Hispanic American Indian/Alaska Native	0.86	0.78, 0.95
Non-Hispanic Asian	1.27	1.22, 1.33
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.79	0.71, 0.89
Non-Hispanic Multiple Races	0.96	0.94, 0.98
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.90	0.88, 0.91
Small rural	0.92	0.90, 0.93
Isolated	0.94	0.92, 0.96
<b>Number of persons in household</b>	1.12	1.12, 1.12
<b>Number of containers prescribed</b>	0.82	0.81, 0.82

## Beans and Peanut Butter Redemptions

*Table 8. Odds of WIC Families Redeeming Bean/Legume Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	2.21	2.19, 2.24
Nevada	1.68	1.65, 1.70
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.42	0.42, 0.43
Hispanic	0.99	0.98, 1.01
Non-Hispanic American Indian/Alaska Native	0.72	0.66, 0.79
Non-Hispanic Asian	1.21	1.16, 1.26
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.62	0.56, 0.70

	Adjusted Odds of Full Redemption	95% Confidence Interval
Non-Hispanic Multiple Races	0.72	0.70, 0.73
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.92	0.90, 0.93
Small rural	1.00	0.99, 1.02
Isolated	1.07	1.05, 1.09
<b>Number of persons in household</b>	1.13	1.13, 1.13
<b>Number of units prescribed</b>	0.71	0.70, 0.71

## Canned Fish Redemptions

*Table 9. Odds of WIC Families Redeeming Canned Fish Benefits, Controlling for Family Characteristics and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.58	1.48, 1.68
Nevada	1.09	1.00, 1.19
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.60	0.55, 0.65
Hispanic	1.07	1.00, 1.15
Non-Hispanic American Indian/Alaska Native	0.43	0.29, 0.64
Non-Hispanic Asian	0.70	0.58, 0.84
Non-Hispanic Native Hawaiian/Other Pacific Islander	1.07	0.66, 1.75
Non-Hispanic Multiple Races	0.86	0.78, 0.95
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.96	0.90, 1.03
Small rural	1.07	0.99, 1.16
Isolated	1.43	1.29, 1.60
<b>Number of persons in household</b>	1.12	1.10, 1.14

## Whole Grain Redemptions

*Table 10. Odds of WIC Families Redeeming Whole Grain Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	2.09	2.07, 2.12
Nevada	2.08	2.05, 2.12
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.62	0.61, 0.63
Hispanic	0.95	0.94, 0.96
Non-Hispanic American Indian/Alaska Native	0.79	0.72, 0.87
Non-Hispanic Asian	1.16	1.12, 1.22
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.69	0.62, 0.78
Non-Hispanic Multiple Races	0.81	0.79, 0.82
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.91	0.89, 0.92
Small rural	0.92	0.91, 0.94
Isolated	0.93	0.91, 0.95
<b>Number of persons in household</b>	1.13	1.13, 1.13
<b>Benefit Issuance: Lbs of whole grains prescribed</b>	0.81	0.81, 0.82

## Dairy Milk Redemptions

*Table 11. Odds of WIC Families Redeeming Milk Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.34	1.33, 1.36
Nevada	1.64	1.61, 1.67
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.53	0.53, 0.54
Hispanic	1.20	1.18, 1.22
Non-Hispanic American Indian/Alaska Native	0.69	0.62, 0.76
Non-Hispanic Asian	1.45	1.39, 1.51
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.59	0.52, 0.67
Non-Hispanic Multiple Races	0.78	0.77, 0.80

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.91	0.89, 0.92
Small rural	1.00	0.98, 1.01
Isolated	1.08	1.06, 1.10
<b>Number of persons in household</b>	1.16	1.16, 1.16
<b>Number of gallons prescribed</b>	0.96	0.95, 0.96
<b>Half Gallon prescribed (Yes/No)</b>	0.58	0.57, 0.58
<b>Quart prescribed (Yes/No)</b>	0.42	0.41, 0.42

### WIC-Eligible Medical Food (for Women and Children) Redemptions

*Table 12. Odds of WIC Families Redeeming Medical Foods Benefits, Controlling for Family Characteristics, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	0.90	0.83, 0.99
Nevada	1.87	1.65, 2.12
<b>Family Race/Ethnicity*</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.73	0.66, 0.82
Hispanic	1.41	1.26, 1.57
Non-Hispanic American Indian/Alaska Native	0.80	0.28, 2.26
Non-Hispanic Asian	5.48	3.92, 7.65
Non-Hispanic Native Hawaiian/Other Pacific Islander	1.38	0.42, 4.53
Non-Hispanic Multiple Races	0.94	0.81, 1.09
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.78	0.69, 0.88
Small rural	0.97	0.85, 1.11
Isolated	0.81	0.69, 0.96
<b>Number of persons in household</b>	1.07	1.05, 1.10

## Infant Jarred Food Redemptions

*Table 13. Odds of WIC Families Redeeming Infant Jarred Fruit and Vegetable Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	0.92	0.90, 0.95
Nevada	0.69	0.66, 0.72
<b>Family Race/Ethnicity*</b>		
White	REF	REF
Black	0.69	0.67, 0.71
Hispanic	0.91	0.88, 0.94
American Indian/Alaska Native	0.68	0.54, 0.84
Asian	1.42	1.30, 1.55
Native Hawaiian/Other Pacific Islander	0.66	0.50, 0.88
Multiple Races	0.81	0.72, 0.84
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.81	0.79, 0.84
Small rural	0.81	0.78, 0.84
Isolated	0.86	0.82, 0.90
For each person in household	1.05	1.04, 1.05
For every ounce prescribed	1.00	1.00, 1.00

*Table 14. Odds of WIC Families Redeeming Infant Jarred Meat Benefits, Controlling for Family Characteristics, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.49	1.34, 1.66
Nevada	0.79	0.67, 0.93
<b>Family Race/Ethnicity</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.61	0.51, 0.73
Hispanic	0.82	0.73, 0.92
Non-Hispanic American Indian/Alaska Native	0.85	0.37, 1.96
Non-Hispanic Asian	0.77	0.56, 1.06
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.29	0.04, 2.33
Non-Hispanic Multiple Races	0.98	0.84, 1.14
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.97	0.87, 1.10

	Adjusted Odds of Full Redemption	95% Confidence Interval
Small rural	0.93	0.81, 1.08
Isolated	1.14	0.97, 1.35
<b>For each person in household</b>	1.01	0.98, 1.04

## Infant Cereal Redemptions

*Table 15. Odds of WIC Families Redeeming Infant Cereal Benefits, Controlling for Family Characteristics, Benefit Issuance, and State*

	Adjusted Odds of Full Redemption	95% Confidence Interval
<b>State</b>		
Kentucky	REF	REF
Michigan	1.38	1.35, 1.41
Nevada	1.14	1.10, 1.19
<b>Family Race/Ethnicity</b>		
Non-Hispanic White	REF	REF
Non-Hispanic Black	0.80	0.77, 0.82
Hispanic	0.76	0.74, 0.78
Non-Hispanic American Indian/Alaska Native	0.60	0.49, 0.74
Non-Hispanic Asian	1.41	1.28, 1.54
Non-Hispanic Native Hawaiian/Other Pacific Islander	0.68	0.52, 0.88
Non-Hispanic Multiple Races	0.85	0.81, 0.88
<b>Geographic location</b>		
Urban	REF	REF
Large rural	0.82	0.79, 0.85
Small rural	0.78	0.75, 0.81
Isolated	0.85	0.81, 0.89
<b>Number of persons in household</b>	1.03	1.02, 1.04