

Appendix: Multilevel Logistic Regression Models for All Outcomes

Odds Ratio (95% CI) Higher numbers indicate a greater odds of the outcome.

Variable	Influenza Vaccine	Self-Reported Unmet Need	Family Physician Consultation	Specialist Physician Consultation	Regular Medical Doctor
Rural/Urban Status					
Statistical Area Classification^a					
- Urban - CMA	0.97(0.89,1.06)	0.95(0.84,1.06)	1.11(1.00,1.22)	1.24(1.15,1.35) ^c	0.77(0.64,0.92) ^c
- Urban - CA ^d	1.00	1.00	1.00	1.00	1.00
- Rural - Strong MIZ	0.93(0.84,1.03)	0.85(0.75,0.97) ^b	0.99(0.89,1.11)	1.04(0.95,1.15)	0.96(0.81,1.13)
- Rural - Moderate MIZ	0.93(0.85,1.02)	0.83(0.74,0.94) ^c	1.00(0.90,1.11)	0.91(0.84,1.00)	0.89(0.76,1.04)
- Rural - Weak or No MIZ	0.89(0.81,0.98) ^b	0.85(0.75,0.96) ^c	1.01(0.91,1.12)	0.90(0.82,0.99)	0.62(0.53,0.74) ^c
Need					
Chronic Conditions					
- None	0.72(0.69,0.75) ^c	0.74(0.70,0.79) ^c	0.53(0.51,0.56) ^c	0.62(0.59,0.65) ^c	0.52(0.49,0.55) ^c
- 1 chronic condition ^d	1.00	1.00	1.00	1.00	1.00
- 2 or more conditions	1.48(1.42,1.54) ^c	1.65(1.56,1.76) ^c	1.65(1.55,1.75) ^c	1.58(1.52,1.65) ^c	1.60(1.48,1.72) ^c
Self-rated Health					
- Excellent	0.86(0.83,0.90) ^c	0.45(0.42,0.48) ^c	0.66(0.63,0.69) ^c	0.64(0.62,0.67) ^c	1.03(0.97,1.08)
- Very good	0.93(0.89,0.96) ^b	0.67(0.64,0.70) ^c	0.86(0.82,0.90) ^c	0.80(0.77,0.83) ^c	1.11(1.05,1.16) ^c
- Good ^d	1.00	1.00	1.00	1.00	1.00
- Fair	1.11(1.05,1.17) ^c	1.61(1.50,1.72) ^c	1.22(1.13,1.31) ^c	1.64(1.55,1.72) ^c	1.21(1.10,1.33) ^c
- Poor	1.24(1.13,1.37) ^c	3.39(3.07,3.74) ^c	1.59(1.35,1.86) ^c	2.81(2.57,3.07) ^c	1.39(1.15,1.68) ^c

Appendix: Multilevel Logistic Regression Models for All Outcomes

Odds Ratio (95% CI) Higher numbers indicate a greater odds of the outcome.

Variable	Influenza Vaccine	Self-Reported Unmet Need	Family Physician Consultation	Specialist Physician Consultation	Regular Medical Doctor
Predisposing Characteristics					
Sex					
- Female ^d	1.00	1.00	1.00	1.00	1.00
- Male	0.93(0.90,0.96) ^b	0.72(0.69,0.76) ^c	0.61(0.59,0.63) ^c	0.64(0.62,0.66) ^c	0.48(0.46,0.50) ^c
Age					
- 20 to 29 years	0.34(0.32,0.36) ^c	1.14(1.06,1.23) ^c	0.47(0.44,0.50) ^c	0.61(0.58,0.65) ^c	0.19(0.17,0.20) ^c
- 30 to 39 years	0.56(0.53,0.59) ^c	1.79(1.68,1.92) ^c	0.98(0.93,1.04)	1.16(1.10,1.22) ^c	0.52(0.49,0.56) ^c
- 40 to 49 years	0.67(0.64,0.70) ^c	1.43(1.34,1.52) ^c	0.93(0.88,0.98) ^b	0.96(0.92,1.01)	0.77(0.72,0.82) ^c
- 50 to 59 years ^d	1.00	1.00	1.00	1.00	1.00
- 60 to 69 years	2.01(1.90,2.12) ^c	0.68(0.62,0.74) ^c	1.16(1.08,1.25) ^c	1.04(0.99,1.10)	1.61(1.45,1.79) ^c
- 70 to 79 years	4.14(3.86,4.44) ^c	0.52(0.47,0.58) ^c	1.34(1.22,1.47) ^c	0.91(0.85,0.97) ^b	2.23(1.94,2.56) ^c
- 80+ years	4.72(4.26,5.22) ^c	0.31(0.26,0.37) ^c	1.61(1.40,1.86) ^c	0.68(0.62,0.75) ^c	1.90(1.55,2.32) ^c
Marital Status					
- Married or equivalent ^d	1.00	1.00	1.00	1.00	1.00
- Single/ divorced/ widowed	1.02(0.99,1.06)	1.04(0.99,1.09)	0.84(0.81,0.88) ^c	0.91(0.88,0.94) ^c	0.67(0.64,0.70) ^c
Educational Attainment					
- < secondary graduation	1.01(0.96,1.06)	0.97(0.90,1.04)	0.97(0.92,1.03)	0.79(0.76,0.84) ^c	0.90(0.84,0.96) ^c
- Secondary graduation ^d	1.00	1.00	1.00	1.00	1.00
- Other post-secondary	0.95(0.89,1.01)	1.39(1.28,1.51) ^c	1.19(1.12,1.28) ^c	1.21(1.14,1.29) ^c	0.87(0.80,0.94) ^b
- Post-secondary graduation	1.17(1.12,1.22) ^c	1.30(1.23,1.38) ^c	1.24(1.19,1.29) ^c	1.26(1.21,1.31) ^c	0.94(0.89,0.99) ^c
Ethnic or Cultural Origin					
- White ^d	1.00	1.00	1.00	1.00	1.00
- Not White	1.17(1.11,1.22) ^c	0.94(0.89,1.00) ^b	0.90(0.86,0.95) ^c	0.74(0.71,0.77) ^c	1.15(1.08,1.22) ^c

Appendix: Multilevel Logistic Regression Models for All Outcomes

Odds Ratio (95% CI) Higher numbers indicate a greater odds of the outcome.

Variable	Influenza Vaccine	Self-Reported Unmet Need	Family Physician Consultation	Specialist Physician Consultation	Regular Medical Doctor
Enabling Resources					
Has a Regular Medical Doctor					
- Yes ^d	1.00	1.00	1.00	1.00	
- No	0.50(0.48,0.53) ^c	1.66(1.57,1.76) ^c	0.23(0.22,0.24) ^c	0.66(0.63,0.69) ^c	
Income Adequacy (2 cats)					
- Low income	0.84(0.79,0.89) ^c	1.19(1.10,1.28) ^c	0.95(0.89,1.01)	0.92(0.87,0.97) ^b	0.68(0.63,0.73) ^c
- Middle or High income ^d	1.00	1.00	1.00	1.00	1.00
- unknown, NA, or not stated	0.99(0.94,1.04)	0.92(0.85,0.99)	1.00(0.94,1.07)	0.84(0.80,0.89) ^c	0.95(0.88,1.02)
Has Pharmaceuticals Insurance					
- Yes ^d	1.00	1.00	1.00	1.00	1.00
- No	0.73(0.70,0.76) ^c	1.22(1.16,1.28) ^c	0.74(0.71,0.77) ^c	0.80(0.77,0.83) ^c	0.65(0.62,0.68) ^c
Occupation Class					
- Bus./soc. services /hlth care ^d	1.00	1.00	1.00	1.00	1.00
- Sales and service	0.77(0.74,0.80) ^c	0.96(0.91,1.02)	0.89(0.85,0.93) ^c	0.86(0.82,0.90) ^c	1.06(1.01,1.13)
- Trades/transport/primary	0.70(0.66,0.73) ^c	0.99(0.93,1.06)	0.85(0.81,0.89) ^c	0.80(0.76,0.84) ^c	0.91(0.86,0.96) ^b
- Not Employed	0.96(0.91,1.00)	0.84(0.78,0.89) ^c	0.83(0.78,0.87) ^c	1.00(0.95,1.05)	0.95(0.89,1.02)

Appendix: Multilevel Logistic Regression Models for All Outcomes

Odds Ratio (95% CI) Higher numbers indicate a greater odds of the outcome.

Variable	Influenza Vaccine	Self-Reported Unmet Need	Family Physician Consultation	Specialist Physician Consultation	Regular Medical Doctor
Place of Residence					
Province					
- British Columbia ^d	1.00	1.00	1.00	1.00	1.00
- Alberta	0.84(0.72,0.97) ^b	0.82(0.66,1.01)	0.87(0.73,1.04)	0.86(0.74,0.99)	0.67(0.49,0.92) ^c
- Saskatchewan	0.81(0.68,0.95) ^c	0.72(0.57,0.91) ^c	0.87(0.72,1.05)	1.02(0.87,1.19)	0.73(0.54,0.99)
- Manitoba	0.59(0.49,0.71) ^c	1.02(0.80,1.30)	0.82(0.66,1.01)	0.95(0.80,1.13)	0.58(0.41,0.81) ^c
- Ontario	1.66(1.48,1.87) ^c	0.86(0.73,1.02)	0.67(0.58,0.77) ^c	1.08(0.97,1.20)	1.38(1.06,1.80) ^c
- Quebec	0.61(0.55,0.69) ^c	0.98(0.83,1.16)	0.52(0.45,0.60) ^c	1.40(1.25,1.56) ^c	0.43(0.33,0.56) ^c
- New Brunswick	0.67(0.57,0.80) ^c	0.94(0.74,1.19)	0.83(0.68,1.01)	1.17(0.99,1.37)	1.31(0.91,1.89) ^c
- Nova Scotia	1.10(0.91,1.33)	0.91(0.70,1.18)	0.89(0.71,1.12)	1.09(0.91,1.30)	2.19(1.43,3.37) ^c
- Prince Edward Island	0.74(0.55,1.01)	0.62(0.40,0.97) ^b	1.07(0.75,1.52)	1.14(0.86,1.52)	1.40(0.79,2.51)
- Newfoundland	0.48(0.39,0.59) ^c	1.02(0.78,1.33)	1.17(0.93,1.47)	1.07(0.89,1.29)	0.56(0.38,0.81) ^c
Health Region					
- Median Odds Ratio (ICC) ^e	1.10 (0.24%)	1.19 (0.33%)	1.13 (0.27%)	1.09 (0.16%)	1.34 (1.14%)
Consolidated Census Subdivision					
- Median Odds Ratio (ICC) ^e	1.32 (1.89%)	1.38 (1.16%)	1.41 (2.19%)	1.26 (1.21%)	1.88 (5.05%)

^a CMA=Census Metropolitan Area; CA=Census Amalgamation; MIZ=Metropolitan Influence Zone

^b Significant at $p < 0.05$

^c Significant at $p < 0.001$

^d Reference Category

^e Median Odds Ratio – Interpreted as the expected increased odds if an individual moves to a different area, while all other factors remained the same. The Intraclass Correlation Coefficient (ICC) represents the proportion of the variation that is attributable to the specified