

## Appendix 1 (as supplied by the authors): Individual-level Analyses

### *Univariate and Bivariate Analyses*

In addition to the small area-level summaries presented in the main text, descriptive and statistical analyses were also conducted at the individual level. Continuous data were summarized using means and standard deviations, and categorical data were summarized using frequencies and percentages. Individual-level variables included: 1) sex, 2) age at index date, 3) immigrant status based on number of years in Canada as of index date: recent immigrant (0 to <8 years), non-distant immigrant (8 to <16 years), distant immigrant (16 to <28 years), and non-immigrant (28+ years), and 4) total number of visits to a primary care physician (PCP) within the 2 years prior to the index date. Small area level characteristics included: 1) neighbourhood income quintile, 2) % of residents in small area who had completed high school, 3) and % of residents in small area whose home language was English or French. Primary care provider characteristics included: 1) whether the individual had an identifiable PCP: a) no, b) yes, to a PCP not in a patient enrollment model (PEM), c) yes, to a PCP in a PEM but individual is not in a PEM, and d) yes, and both individual and PCP are in PEM, 2) age of PCP at index date, 3) sex of PCP, 4) whether PCP was an international medical school graduate (IMG), and 5) if PCP was an IMG, geographical region of study.

Table 1 presents the individual-level, small area-level level and PCP-level characteristics for individuals eligible for each screening test, stratified by whether individuals were up to date on screening. Table 2 examines eligible individuals stratified by whether they had an identifiable PCP. Table 3 presents individuals with an identifiable PCP, stratified by whether they were up to date on screening, and Table 4 presents individuals without an identifiable physician, stratified by whether they were up to date on screening.

### *Multivariable Regression Analyses*

Multivariable logistic regression models were created to evaluate factors associated with eligible individuals being up to date on a particular screening test: 1) colorectal cancer, 2) breast cancer, 3) cervical cancer, 4) glucose, or 5) high cholesterol. These five models were run on two groups of individuals: 1) those with an identifiable PCP, so that individual-level, small area-level, and PCP-level characteristics could be evaluated simultaneously, and 2) those without an identifiable PCP, where only small area-level and individual-level characteristics were evaluated.

Models including individuals with an identifiable PCP were run on a random sample of 1,000,000 individuals due to the large number of screen eligible individuals (from 1,808,811 females eligible for breast cancer screening to 4,964,757 individuals eligible for glucose screening; see Table 3). The generalized estimating equation (GEE) method was used to account for the clustering of individuals with the same PCP using an exchangeable correlation matrix. Models run on individuals without a PCP used all eligible individuals since the number of eligible individuals for each screening test was relatively small (ranging from 64,766 females eligible for breast cancer screening to 270,444 individuals eligible for cholesterol screening; see Table 4).

For all ten models, the functional form of continuous variables was examined graphically using restricted cubic splines [1]. Continuous variables displaying non-linear relationships for any of the ten outcomes were categorized for all ten multivariable models using distributional cut-offs, for ease of presentation and interpretation. Complete case analyses were carried out due to the low percentage of individuals with incomplete data among the cohorts (<1%).

Multi-collinearity between variables was evaluated using a variance inflation factor of 10 or higher [2], resulting in the inclusion of the following variables: Individual-level characteristics (sex, age, number of visits to a primary care physician within the last two years, immigrant status, and individuals enrollment model status), small area-level characteristics (neighbourhood income quintile, percentage of residents in small area who had completed high school, percentage of residence small area whose home language was English or French), and PCP-level characteristics (school region of graduation and number of

years since graduation). Additionally, the presence of co-morbidities in the two years prior to the index date was assessed based on the Johns Hopkins Adjusted Clinical Groups Case-Mix System, which uses diagnostic information from administrative databases to describe and predict individual's use of health care resources [3]. To adjust for co-morbidities, the 32 distinct Aggregated Diagnosis Groups were included as indicator variables in the multivariable models.

The pairs of variables patient age and sex, the 32 ADG indicator variables and patient age, the number of years the individual has been in Canada and income quintile, and the PCP's age and sex were hypothesized *a priori* to have interaction effects. This was tested using the score statistic for type III p-values for GEE analysis for each applicable model. None of the interaction terms substantially changed effect estimates and hence were not included in the models.

Figures 1 and 2 illustrate the adjusted odds ratios for all variables (except the 32 ADG indicator variables) included in each of the five models for individuals with an identifiable physician (Figure 1) and without an identifiable physician (Figure 2). Due to the large sample sizes, confidence bands are generally very small and hence are not shown; instead, all 95% confidence intervals do not overlap with 1.00 except those indicated with \*.

## References

1. Harrell, FE (2001) Regression Modeling Strategies: with applications to linear models, logistic regression, and survival analysis. Springer-Verlag New York, Inc. New York, USA.
2. Kutner MH, Nachtsheim CJ, Neter J, Applied Linear Regression Models. 4th ed. Chicago: McGraw-Hill Irwin, 2004.
3. Reid RJ, MacWilliam L, Verhulst L, Roos N, Atkinson M: Performance of the ACG case-mix system in two Canadian provinces. Med Care 2001,39(1):86-99.
4. Hanley J, Negassa A, Edwardes M, Forrester J. Statistical analysis of correlated data using generalized estimating equations: an orientation. Am J Epidemiol 2003;157(4): 364-75.

**Table S-1.** Descriptive Statistics of individuals with an identifiable primary care physician.

	Up to date on Colorectal Screening? (50-74 y)			Up to date on Breast Screening? (50-74 y)			Up to date on Cervical Screening? (30-69 y)			Up to date on Glucose Screening? (40-74 y)			Up to date on Cholesterol Screening? (50-74 y)		
	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
	1,477,144 (42%)	2,052,643 (58%)	3,529,787	659,256 (36%)	1,149,555 (64%)	1,808,811	885,315 (29%)	2,149,260 (71%)	3,034,575	1,530,178 (33%)	3,135,900 (67%)	4,666,078	740,385 (17%)	3,662,747 (83%)	4,403,132
<b>Individual-level Characteristics</b>															
<b>Sex, No (%)</b>															
F	732,194 (39.9%)	1,104,826 (60.1%)	1,837,020 (52.0%)	659,256 (36.4%)	1,149,555 (63.6%)	1,808,811 (100.0%)	885,315 (29.2%)	2,149,260 (70.8%)	3,034,575 (100.0%)	714,941 (28.9%)	1,760,616 (71.1%)	2,475,557 (53.1%)	226,554 (12.2%)	1,626,310 (87.8%)	1,852,864 (42.1%)
M	744,950 (44.0%)	947,817 (56.0%)	1,692,767 (48.0%)	0 (0%)	0 (0%)	0 (0%)				815,237 (37.2%)	1,375,284 (62.8%)	2,190,521 (46.9%)	513,831 (20.1%)	2,036,437 (79.9%)	2,550,268 (57.9%)
<b>Age</b>															
30-34							93,597 (23.8%)	299,036 (76.2%)	392,633 (12.9%)						
35-39							95,611 (23.9%)	303,871 (76.1%)	399,482 (13.2%)						
40-44							103,793 (24.8%)	314,128 (75.2%)	417,921 (13.8%)	356,251 (43.5%)	462,581 (56.5%)	818,832 (17.5%)	136,308 (33.2%)	273,747 (66.8%)	2,550,268 (57.9%)
45-49							115,264 (25.7%)	332,765 (74.3%)	448,029 (14.8%)	358,391 (39.4%)	551,458 (60.6%)	909,849 (19.5%)	126,642 (26.8%)	345,777 (73.2%)	472,419 (10.7%)
50-54	505,160 (53.1%)	445,467 (46.9%)	950,627 (26.9%)	206,341 (42.4%)	105,431 (41.4%)	486,420 (26.9%)	111,944 (26.9%)	304,885 (73.1%)	416,829 (13.7%)	292,299 (34.1%)	563,709 (65.9%)	856,008 (18.3%)	172,497 (18.1%)	778,564 (81.9%)	951,061 (21.6%)
55-59	350,464 (42.5%)	474,790 (57.5%)	825,254 (23.4%)	145,267 (34.3%)	277,816 (65.7%)	423,083 (23.4%)	112,527 (31.5%)	245,211 (68.5%)	357,738 (11.8%)	215,943 (30.4%)	494,600 (69.6%)	710,543 (15.2%)	122,794 (14.9%)	700,851 (85.1%)	823,645 (18.7%)
60-64	266,658 (37.3%)	448,068 (62.7%)	825,254 (23.4%)	115,072 (31.6%)	249,527 (68.4%)	364,599 (20.2%)	112,527 (31.5%)	194,707 (62.5%)	311,554 (10.3%)	148,741 (25.5%)	433,771 (74.5%)	582,512 (12.5%)	84,446 (11.9%)	626,968 (88.1%)	711,414 (16.2%)
65-69	266,658 (37.3%)	365,027 (66.2%)	551,373 (15.6%)	87,145 (31.1%)	192,946 (68.9%)	280,091 (15.5%)	112,949 (45.5%)	135,534 (54.5%)	248,483 (8.2%)	90,938 (21.3%)	336,311 (78.7%)	427,249 (9.2%)	54,159 (9.9%)	494,109 (90.1%)	548,268 (12.5%)
70-74	168,516 (34.5%)	319,291 (65.5%)	487,807 (13.8%)	105,431 (41.4%)	149,187 (58.6%)	254,618 (14.1%)	22,783 (54.4%)	19,123 (45.6%)	41,906 (1.4%)	67,615 (18.7%)	293,470 (81.3%)	361,085 (7.7%)	43,539 (9.0%)	442,731 (91.0%)	486,270 (11.0%)
<b>Total # of PCP visits within the last 2y</b>															
0	150,789 (74.5%)	51,743 (25.5%)	202,532 (5.7%)	62,525 (73.9%)	22,048 (26.1%)	394,545 (64.3%)	114,889 (66.2%)	58,669 (33.8%)	173,558 (5.7%)	286,698 (85.3%)	49,286 (14.7%)	335,984 (7.2%)	147,113 (48.9%)	153,686 (51.1%)	300,799 (6.8%)
1 to 5	662,736 (48.0%)	717,573 (52.0%)	1,380,309 (39.1%)	265,152 (41.2%)	379,048 (58.8%)	394,545 (64.3%)	382,484 (31.1%)	846,183 (68.9%)	1,228,667 (40.5%)	857,011 (41.3%)	1,220,273 (58.7%)	2,077,284 (44.5%)	413,761 (22.2%)	1,446,174 (77.8%)	1,859,935 (42.2%)
6 to 10	350,362 (35.2%)	644,691 (64.8%)	995,053 (28.2%)	162,560 (30.5%)	370,652 (69.5%)	394,545 (64.3%)	198,038 (23.0%)	661,680 (77.0%)	859,718 (28.3%)	244,601 (19.8%)	993,280 (80.2%)	1,237,881 (26.5%)	108,331 (9.2%)	1,067,074 (90.8%)	1,175,405 (26.7%)
11+	313,257 (32.9%)	638,636 (67.1%)	951,893 (27.0%)	169,019 (30.9%)	377,807 (69.1%)	546,826 (30.2%)	189,904 (24.6%)	582,728 (75.4%)	772,632 (25.5%)	141,868 (14.0%)	873,061 (86.0%)	1,014,929 (21.8%)	71,180 (6.7%)	995,813 (93.3%)	1,066,993 (24.2%)
<b>Immigrant status</b>															
Recent immigrant (<8y)	45,902 (56.0%)	36,071 (44.0%)	81,973 (2.3%)	22,340 (51.6%)	20,945 (48.4%)	43,285 (2.4%)	58,160 (33.5%)	115,576 (66.5%)	173,736 (5.7%)	45,383 (27.9%)	117,013 (72.1%)	162,396 (3.5%)	16,402 (12.6%)	114,128 (87.4%)	130,530 (3.0%)
Non-distant immigrant (<16y)	71,665 (50.6%)	70,080 (49.4%)	141,745 (4.0%)	32,914 (46.1%)	38,473 (53.9%)	71,387 (3.9%)	69,311 (32.0%)	115,576 (66.5%)	173,736 (5.7%)	69,868 (26.4%)	194,457 (73.6%)	264,325 (5.7%)	24,993 (11.3%)	196,621 (88.7%)	221,614 (5.0%)
Distant immigrant (<28 y)	113,363 (46.9%)	128,220 (53.1%)	241,583 (6.8%)	49,176 (40.7%)	71,541 (59.3%)	120,717 (6.7%)	69,311 (32.0%)	155,896 (69.3%)	224,857 (7.4%)	69,868 (26.4%)	251,740 (75.6%)	333,037 (7.1%)	32,391 (10.2%)	285,002 (89.8%)	317,393 (7.2%)
Non-immigrant (28+ years)	1,246,214 (40.7%)	1,818,272 (59.3%)	3,064,486 (86.8%)	554,826 (35.3%)	1,018,596 (64.7%)	1,573,422 (87.0%)	688,883 (28.5%)	1,730,192 (71.5%)	2,419,075 (79.7%)	1,333,630 (34.1%)	2,572,690 (65.9%)	3,906,320 (83.7%)	666,599 (17.9%)	3,066,996 (82.1%)	3,733,595 (84.8%)
<b>Does individual have an identifiable PCP?</b>															
Yes, a Non-PEM PCP	122,315 (57.8%)	89,477 (42.2%)	211,792 (6.0%)	48,577 (48.6%)	51,434 (51.4%)	100,011 (5.5%)	688,883 (28.5%)	97,111 (57.3%)	2,419,075 (79.7%)	99,972 (35.5%)	181,807 (64.5%)	281,779 (6.0%)	59,349 (21.8%)	213,483 (78.2%)	272,832 (6.2%)
Yes, a PEM PCP, but individual not enrolled in a PEM	123,276 (58.6%)	87,002 (41.4%)	210,278 (6.0%)	49,887 (52.9%)	44,431 (47.1%)	94,318 (5.2%)	81,556 (43.4%)	106,192 (56.6%)	2,419,075 (79.7%)	140,878 (43.9%)	180,026 (56.1%)	320,904 (6.9%)	88,102 (29.9%)	206,992 (70.1%)	295,094 (6.7%)

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	Up to date on Colorectal Screening? (50-74 y)			Up to date on Breast Screening? (50-74 y)			Up to date on Cervical Screening? (30-69 y)			Up to date on Glucose Screening? (40-74 y)			Up to date on Cholesterol Screening? (50-74 y)		
	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
	<b>1,477,144</b> (42%)	<b>2,052,643</b> (58%)	<b>3,529,787</b>	<b>659,256</b> (36%)	<b>1,149,555</b> (64%)	<b>1,808,811</b>	<b>885,315</b> (29%)	<b>2,149,260</b> (71%)	<b>3,034,575</b>	<b>1,530,178</b> (33%)	<b>3,135,900</b> (67%)	<b>4,666,078</b>	<b>740,385</b> (17%)	<b>3,662,747</b> (83%)	<b>4,403,132</b>
Yes, to a PEM physician and individual in PEM	1,231,553 (39.6%)	1,876,164 (60.4%)	3,107,717 (88.0%)	560,792 (34.7%)	1,053,690 (65.3%)	1,614,482 (89.3%)	731,263 (27.3%)	1,945,957 (72.7%)	2,677,220 (88.2%)	1,289,328 (31.7%)	2,774,067 (68.3%)	4,063,395 (87.1%)	592,934 (15.5%)	3,242,272 (84.5%)	3,835,206 (87.1%)
<b>Small area-level Characteristics</b>															
<b>Income</b>															
Q1	251,525 (48.7%)	264,595 (51.3%)	516,120 (14.6%)	118,736 (43.9%)	151,593 (56.1%)	270,329 (14.9%)	175,641 (36.7%)	302,326 (63.3%)	477,967 (15.8%)	219,776 (32.9%)	447,577 (67.1%)	667,353 (14.3%)	110,487 (16.9%)	542,795 (83.1%)	653,282 (14.8%)
Q2	261,206 (44.6%)	324,069 (55.4%)	585,275 (16.6%)	118,037 (38.7%)	186,630 (61.3%)	304,667 (16.8%)	167,177 (32.2%)	352,085 (67.8%)	519,262 (17.1%)	238,072 (31.3%)	523,343 (68.7%)	761,415 (16.3%)	111,862 (15.2%)	621,774 (84.8%)	733,636 (16.7%)
Q3	254,611 (42.1%)	349,801 (57.9%)	604,412 (17.1%)	112,900 (36.3%)	197,921 (63.7%)	310,821 (17.2%)	157,317 (28.7%)	390,682 (71.3%)	519,262 (17.1%)	248,925 (30.6%)	564,994 (69.4%)	813,919 (17.4%)	111,869 (14.6%)	652,846 (85.4%)	733,636 (16.7%)
Q4	260,129 (39.5%)	397,677 (60.5%)	657,806 (18.6%)	113,411 (33.8%)	222,254 (66.2%)	335,665 (18.6%)	157,317 (28.7%)	442,261 (74.3%)	594,845 (19.6%)	272,918 (30.1%)	632,792 (69.9%)	905,710 (19.4%)	118,560 (14.2%)	715,753 (85.8%)	834,313 (18.9%)
Q5	244,746 (35.4%)	446,187 (64.6%)	690,933 (19.6%)	109,830 (31.4%)	240,359 (68.6%)	350,189 (19.4%)	135,080 (23.5%)	439,033 (76.5%)	574,113 (18.9%)	288,202 (30.8%)	646,942 (69.2%)	935,144 (20.0%)	123,746 (14.5%)	729,569 (85.5%)	853,315 (19.4%)
Rural	204,927 (43.1%)	270,314 (56.9%)	475,241 (13.5%)	86,342 (36.4%)	240,359 (68.6%)	237,140 (13.1%)	97,516 (30.4%)	222,873 (69.6%)	320,389 (10.6%)	262,285 (45.0%)	320,252 (55.0%)	582,537 (12.5%)	163,861 (29.1%)	400,010 (70.9%)	563,871 (12.8%)
<b>% of residents in small area who have completed high school</b>															
Mean (SD)	80.79 (10.82)	82.14 (10.62)	81.58 (10.72)	80.83 (10.85)	81.99 (10.63)	81.56 (10.73)	81.01 (10.82)	82.89 (10.40)	82.34 (10.56)	81.41 (10.89)	82.44 (10.47)	82.1 (10.62)	80.43 (11.12)	82.00 (10.59)	81.74 (10.70)
Median (IQR)	82.05 (74.26-88.89-)	83.56 (75.76-90.29)	82.96 (75-89.71)	82.09 (74.29-89.02)	83.33 (75.61-90.00)	82.96 (75-89.69)	82.35 (74.58-89.19)	84.47 (76.83-90.79)	83.84 (76.19-90.33)	82.76 (74.73-89.74)	83.93 (76.32-90.35)	83.54 (75.81-90.15)	81.61 (73.33-89.89)	83.46 (75.76-90.00)	81.74 (75.76-90.00)
Range	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00
<b>% of residents in small area whose home language is English or French</b>															
Low (0-<96.81)	329,851 (44.1%)	418,160 (55.9%)	748,011 (21.2%)	151,204 (39.2%)	234,838 (60.8%)	386,042 (21.3%)	234,715 (31.8%)	502,286 (68.2%)	737,001 (24.3%)	266,227 (26.6%)	733,595 (73.4%)	999,822 (21.4%)	116,246 (12.1%)	846,640 (87.9%)	962,886 (21.9%)
Medium (96.81-<100)	333,055 (41.6%)	468,069 (58.4%)	801,124 (22.7%)	150,622 (36.4%)	262,951 (63.6%)	413,573 (22.9%)	212,514 (27.9%)	550,084 (72.1%)	762,598 (25.1%)	342,032 (30.9%)	766,158 (69.1%)	1,108,190 (23.7%)	154,802 (15.1%)	870,968 (84.9%)	1,025,770 (23.3%)
High (100)	814,238 (41.1%)	1,166,414 (58.9%)	1,980,652 (56.1%)	357,430 (35.4%)	651,766 (64.6%)	1,009,196 (55.8%)	438,086 (28.5%)	1,096,890 (71.5%)	1,534,976 (50.6%)	921,919 (36.0%)	1,636,147 (64.0%)	2,558,066 (54.8%)	469,337 (19.4%)	1,945,139 (80.6%)	2,414,476 (54.8%)
<b>PCP-level Characteristics</b>															
<b>Sex</b>															
Female	397,706 (37.0%)	677,256 (63.0%)	1,074,962 (30.5%)	223,825 (31.5%)	486,900 (68.5%)	710,725 (39.3%)	283,310 (21.0%)	1,064,804 (79.0%)	1,348,114 (44.4%)	447,935 (29.2%)	1,088,217 (70.8%)	1,536,152 (32.9%)	179,624 (13.8%)	1,117,823 (86.2%)	1,297,447 (29.5%)
Male	1,079,438 (44.0%)	1,375,387 (56.0%)	2,454,825 (69.5%)	435,431 (39.7%)	662,655 (60.3%)	1,098,086 (60.7%)	602,005 (35.7%)	1,084,456 (64.3%)	1,686,461 (55.6%)	1,082,243 (34.6%)	2,047,683 (65.4%)	3,129,926 (67.1%)	560,761 (18.1%)	2,544,924 (81.9%)	3,105,685 (70.5%)
<b>School Region</b>															
Canada	1,026,868 (40.1%)	1,533,687 (59.9%)	2,560,555 (72.5%)	460,683 (35.0%)	855,115 (65.0%)	1,315,798 (72.7%)	598,577 (27.7%)	1,084,456 (64.3%)	2,158,043 (71.1%)	1,154,000 (34.1%)	2,231,790 (65.9%)	3,385,790 (72.6%)	570,331 (18.0%)	2,605,822 (82.0%)	3,176,153 (72.1%)
Australia, Ireland, NZ, UK, USA, S. Africa	104,164 (46.6%)	119,469 (53.4%)	223,633 (6.3%)	44,426 (40.4%)	65,579 (59.6%)	110,005 (6.1%)	57,762 (35.0%)	107,300 (65.0%)	165,062 (5.4%)	1,154,000 (34.1%)	178,981 (63.7%)	280,860 (6.0%)	53,065 (19.4%)	221,102 (80.6%)	274,167 (6.2%)
Other	346,112 (46.4%)	399,487 (53.6%)	745,599 (21.1%)	154,147 (40.2%)	228,861 (59.8%)	383,008 (21.2%)	228,976 (32.2%)	482,494 (67.8%)	711,470 (23.4%)	274,299 (27.4%)	725,129 (72.6%)	280,860 (6.0%)	116,989 (12.3%)	835,823 (87.7%)	952,812 (21.6%)
<b>Number of years since graduation</b>															

**Table S-1.** Descriptive Statistics of individuals with an identifiable primary care physician.

	Up to date on Colorectal Screening? (50-74 y)			Up to date on Breast Screening? (50-74 y)			Up to date on Cervical Screening? (30-69 y)			Up to date on Glucose Screening? (40-74 y)			Up to date on Cholesterol Screening? (50-74 y)		
	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
	<b>1,477,144</b> (42%)	<b>2,052,643</b> (58%)	<b>3,529,787</b>	<b>659,256</b> (36%)	<b>1,149,555</b> (64%)	<b>1,808,811</b>	<b>885,315</b> (29%)	<b>2,149,260</b> (71%)	<b>3,034,575</b>	<b>1,530,178</b> (33%)	<b>3,135,900</b> (67%)	<b>4,666,078</b>	<b>740,385</b> (17%)	<b>3,662,747</b> (83%)	<b>4,403,132</b>
0-<16y	186,726 (39.0%)	291,639 (61.0%)	478,365 (13.6%)	87,408 (34.3%)	167,723 (65.7%)	255,131 (14.1%)	228,976 (32.2%)	367,890 (74.4%)	494,319 (16.3%)	226,681 (33.7%)	446,417 (66.3%)	673,098 (14.4%)	109,519 (17.9%)	502,191 (82.1%)	611,710 (13.9%)
16-<25	358,975 (40.2%)	534,773 (59.8%)	893,748 (25.3%)	165,283 (35.3%)	302,307 (64.7%)	467,590 (25.9%)	236,475 (27.2%)	633,726 (72.8%)	870,201 (28.7%)	405,632 (32.3%)	850,865 (67.7%)	1,256,497 (26.9%)	188,418 (16.4%)	502,191 (82.1%)	1,150,352 (26.1%)
25-<35	485,735 (41.0%)	699,462 (59.0%)	1,185,197 (33.6%)	219,100 (35.7%)	394,545 (64.3%)	613,645 (33.9%)	284,119 (28.5%)	712,669 (71.5%)	996,788 (32.8%)	507,939 (32.6%)	1,051,560 (67.4%)	1,256,497 (26.9%)	244,419 (16.7%)	1,219,385 (83.3%)	1,463,804 (33.2%)
35+	445,708 (45.8%)	526,769 (54.2%)	972,477 (27.6%)	187,465 (39.7%)	394,545 (64.3%)	472,445 (26.1%)	238,292 (35.4%)	434,975 (64.6%)	673,267 (22.2%)	389,926 (33.1%)	787,058 (66.9%)	1,176,984 (25.2%)	198,029 (16.8%)	979,237 (83.2%)	1,177,266 (26.7%)

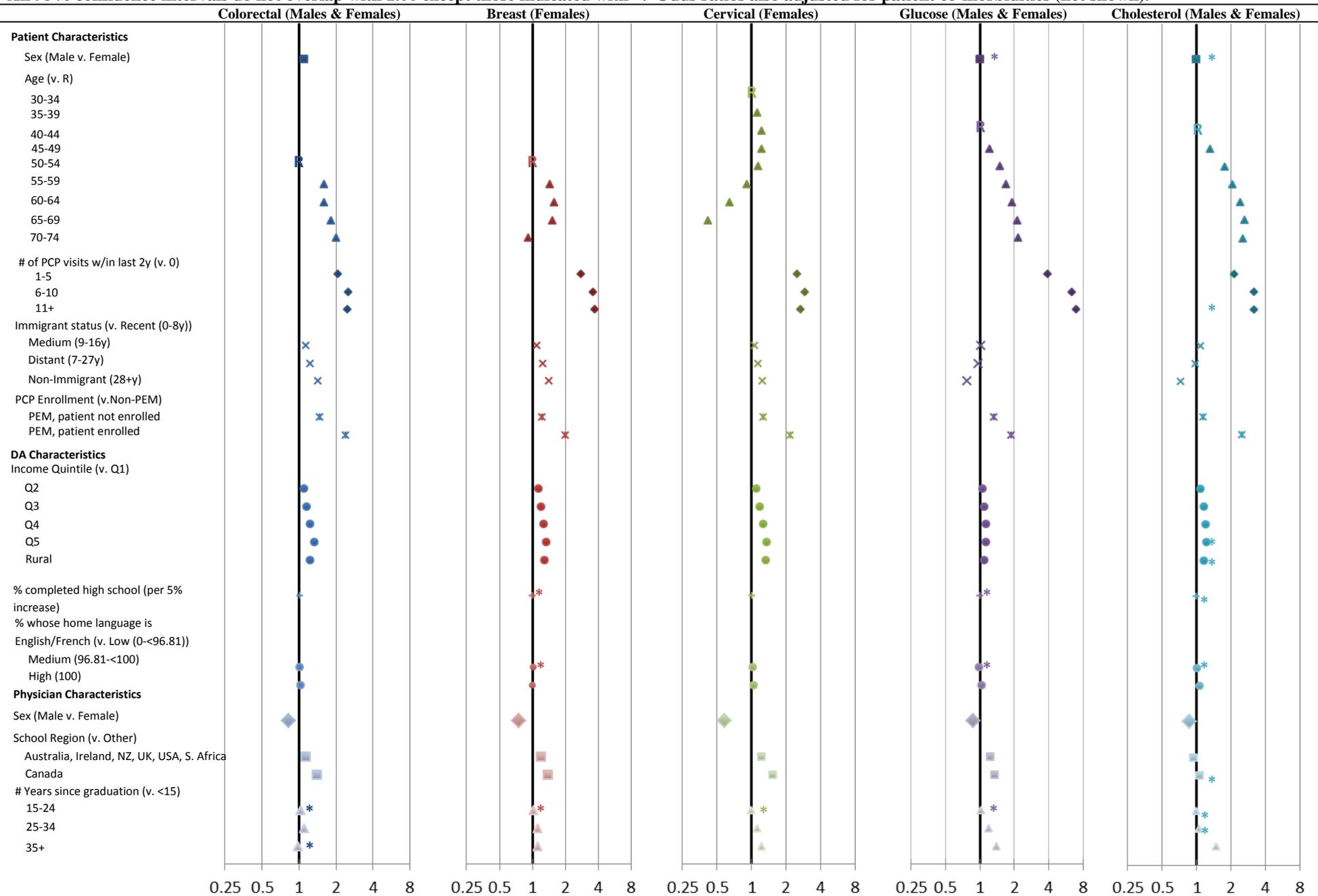
**Table S-2.** Descriptive Statistics of individuals without an identifiable physician

	Colorectal Screening? (50-74y)			Breast Screening? (50-74 y)			Cervical Screening? (30-69 y)			Glucose Screening? (40-74 y)			Cholesterol Screening? (50-74y)		
	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
	153,260 (88%)	21,256 (12%)	174,516	57,257 (88%)	7,509 (12%)	64,766	116,667 (86%)	18,935 (14%)	135,602	273,655 (92%)	25,024 (8%)	298,679	207,149 (77%)	63,295 (23%)	270,444
<b>Individual-level Characteristics</b>															
<b>Sex, No (%)</b>															
F	56,711 (87.1%)	8,372 (12.9%)	65,083 (37.3%)	57,257 (88.4%)	7,509 (11.6%)	64,766 (100.0%)	116,667 (86.0%)	18,935 (14.0%)	135,602 (100.0%)	90,788 (89.4%)	10,724 (10.6%)	101,512 (34.0%)	46,136 (70.7%)	19,147 (29.3%)	65,283 (24.1%)
M	96,549 (88.2%)	8,372 (12.9%)	109,433 (62.7%)	0 (0%)	0 (0%)	0 (0%)	182,867 (92.7%)	14,300 (7.3%)	197,167 (66.0%)	182,867 (92.7%)	14,300 (7.3%)	197,167 (66.0%)	161,013 (78.5%)	44,148 (21.5%)	205,161 (75.9%)
<b>Age</b>															
30-34							18,286 (84.0%)	3,474 (16.0%)	21,760 (16.0%)						
35-39							17,195 (85.0%)	3,041 (15.0%)	20,236 (14.9%)						
40-44							16,889 (85.1%)	2,946 (14.9%)	19,835 (14.6%)	64,088 (95.0%)	3,408 (5.0%)	67,496 (22.6%)	161,013 (78.5%)	7,617 (15.9%)	47,997 (17.7%)
45-49							16,712 (84.9%)	2,972 (15.1%)	19,684 (14.5%)	63,268 (93.7%)	4,275 (6.3%)	67,543 (22.6%)	39,345 (81.5%)	8,953 (18.5%)	48,298 (17.9%)
50-54	53,953 (91.3%)	5,112 (8.7%)	59,065 (33.8%)	17,307 (91.0%)	1,720 (9.0%)	19,027 (29.4%)	15,027 (85.6%)	2,532 (14.4%)	17,559 (12.9%)	52,420 (92.0%)	4,579 (8.0%)	56,999 (19.1%)	45,153 (76.5%)	13,890 (23.5%)	59,043 (21.8%)
55-59	39,425 (87.5%)	5,631 (12.5%)	59,065 (33.8%)	14,273 (87.1%)	2,118 (12.9%)	16,391 (25.3%)	13,122 (87.2%)	1,926 (12.8%)	15,048 (11.1%)	38,658 (90.1%)	4,224 (9.9%)	42,882 (14.4%)	33,179 (73.7%)	11,811 (26.3%)	44,990 (16.6%)
60-64	27,635 (86.0%)	4,504 (14.0%)	32,139 (18.4%)	14,273 (87.1%)	1,662 (13.4%)	12,386 (19.1%)	10,201 (89.6%)	1,186 (10.4%)	11,387 (8.4%)	26,420 (88.3%)	3,486 (11.7%)	29,906 (10.0%)	23,030 (71.9%)	8,999 (28.1%)	32,029 (11.8%)
65-69	18,289 (84.5%)	3,364 (15.5%)	21,653 (12.4%)	8,080 (87.4%)	1,164 (12.6%)	9,244 (14.3%)	7,923 (91.2%)	766 (8.8%)	8,689 (6.4%)	16,847 (86.2%)	2,695 (13.8%)	19,542 (6.5%)	14,966 (69.4%)	6,608 (30.6%)	21,574 (8.0%)
70-74	13,958 (84.1%)	2,645 (15.9%)	16,603 (9.5%)	8,080 (87.4%)	845 (10.9%)	7,718 (11.9%)	1,312 (93.4%)	92 (6.6%)	1,404 (1.0%)	11,954 (83.5%)	2,357 (16.5%)	14,311 (4.8%)	11,096 (67.2%)	5,417 (32.8%)	16,513 (6.1%)
<b>Immigrant status</b>															
Recent immigrant (<8y)	6,190 (94.3%)	372 (5.7%)	6,562 (3.8%)	2,835 (95.0%)	149 (5.0%)	2,984 (4.6%)	9,486 (87.0%)	1,417 (13.0%)	10,903 (8.0%)	13,340 (93.8%)	883 (6.2%)	14,223 (4.8%)	8,009 (69.6%)	3,495 (30.4%)	11,504 (4.3%)
Non-distant immigrant (<16y)	9,243 (94.1%)	582 (5.9%)	9,825 (5.6%)	3,969 (96.5%)	144 (3.5%)	4,113 (6.4%)	12,683 (92.9%)	971 (7.1%)	13,654 (10.1%)	21,486 (96.2%)	844 (3.8%)	22,330 (7.5%)	13,679 (74.6%)	4,658 (25.4%)	18,337 (6.8%)
Distant immigrant (<28 y)	11,482 (92.2%)	967 (7.8%)	12,449 (7.1%)	4,394 (93.7%)	293 (6.3%)	4,687 (7.2%)	8,623 (90.4%)	913 (9.6%)	9,536 (7.0%)	19,573 (93.3%)	1,398 (6.7%)	20,971 (7.0%)	13,964 (72.9%)	5,202 (27.1%)	19,166 (7.1%)
Non-immigrant (28+ years)	126,345 (86.7%)	19,335 (13.3%)	145,680 (83.5%)	46,059 (86.9%)	6,923 (13.1%)	52,982 (81.8%)	85,875 (84.6%)	15,634 (15.4%)	101,509 (74.9%)	219,256 (90.9%)	21,899 (9.1%)	241,155 (80.7%)	171,497 (77.4%)	49,940 (22.6%)	221,437 (81.9%)
<b>Small area-level Characteristics</b>															
<b>Income</b>															
Q1	31,097 (90.3%)	3,338 (9.7%)	34,435 (19.7%)	11,209 (91.3%)	1,069 (8.7%)	12,278 (19.0%)	24,677 (87.9%)	3,405 (12.1%)	28,082 (20.7%)	54,891 (91.4%)	5,161 (8.6%)	60,052 (20.1%)	41,830 (76.8%)	12,649 (23.2%)	54,479 (20.1%)
Q2	31,097 (90.3%)	2,646 (8.8%)	29,918 (17.1%)	10,069 (91.4%)	950 (9.6%)	11,019 (17.0%)	21,276 (88.6%)	2,743 (11.4%)	24,019 (17.7%)	48,393 (92.6%)	3,889 (7.4%)	52,282 (17.5%)	36,493 (77.4%)	10,684 (22.6%)	47,177 (17.4%)
Q3	24,216 (89.8%)	2,765 (10.2%)	26,981 (15.5%)	9,209 (90.4%)	980 (15.7%)	10,189 (15.7%)	19,117 (87.7%)	2,680 (12.3%)	21,797 (16.1%)	43,703 (92.5%)	3,889 (7.4%)	47,258 (15.8%)	32,729 (76.8%)	9,898 (23.2%)	42,627 (15.8%)
Q4	23,727 (88.4%)	3,113 (11.6%)	26,840 (15.4%)	9,015 (89.4%)	980 (15.6%)	10,082 (15.6%)	18,691 (87.1%)	2,756 (12.9%)	21,447 (15.8%)	43,139 (92.0%)	3,758 (8.0%)	46,897 (15.7%)	32,141 (76.3%)	9,966 (23.7%)	42,107 (15.6%)
Q5	23,727 (88.4%)	5,022 (17.1%)	29,434 (16.9%)	9,835 (88.0%)	1,344 (12.0%)	11,179 (17.3%)	19,672 (85.9%)	3,225 (14.1%)	22,897 (16.9%)	44,988 (90.9%)	4,486 (9.1%)	49,474 (16.6%)	33,284 (75.1%)	11,021 (24.9%)	44,305 (16.4%)
Rural	22,536 (83.8%)	5,022 (17.1%)	26,908 (15.4%)	7,920 (79.0%)	2,099 (21.0%)	10,019 (15.5%)	13,234 (76.2%)	4,126 (23.8%)	17,360 (12.8%)	38,541 (90.2%)	4,175 (9.8%)	42,716 (14.3%)	30,672 (77.2%)	9,077 (22.8%)	39,749 (14.7%)

**Table S-2. Descriptive Statistics of individuals without an identifiable physician**

	Colorectal Screening? (50-74y)			Breast Screening? (50-74 y)			Cervical Screening? (30-69 y)			Glucose Screening? (40-74 y)			Cholesterol Screening? (50-74y)		
	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
	<b>153,260</b> (88%)	<b>21,256</b> (12%)	<b>174,516</b>	<b>57,257</b> (88%)	<b>7,509</b> (12%)	<b>64,766</b>	<b>116,667</b> (86%)	<b>18,935</b> (14%)	<b>135,602</b>	<b>273,655</b> (92%)	<b>25,024</b> (8%)	<b>298,679</b>	<b>207,149</b> (77%)	<b>63,295</b> (23%)	<b>270,444</b>
<b>% of residents in small area who have completed high school</b>															
Mean	80.47 (11.82)	80.43 (13.74)	80.47 12.07	81.02 (11.83)	77.78 14.54	80.64 12.22	81.80 (11.70)	78.36 (15.53)	81.32 (12.37)	80.84 (11.82)	79.42 (12.36)	80.72 (11.87)	80.64 (11.56)	80.00 (13.41)	80.49 (12.02)
Median (IQR)	80.47 (11.82)	82.57 (11.82)	82.00 (73.39-89.47)	82.56 (74.29-89.86)	80.00 (70.00-88.00)	82.26 (73.74-89.70)	83.53 (75.36-90.48)	81.06 (71.37-89.39)	83.24 (74.78-90.35)	82.35 (74.00-89.69)	80.95 (71.58-88.89)	82.26 (73.77-89.61)	81.99 (73.53-89.41)	82.09 (73.21-89.55)	82.00 (73.47-89.47)
Range	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	8.82-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00	0.00-100.00
<b>% of residents in small area whose home language is English or French</b>															
Low (0-<96.81)	36,976 (90.6%)	3,822 (9.4%)	40,798 (23.4%)	14,197 (92.2%)	1,198 (7.8%)	15,395 (23.8%)	32,698 (88.9%)	4,078 (11.1%)	36,776 (27.1%)	67,146 (93.4%)	4,774 (6.6%)	71,920 (24.1%)	47,956 (74.0%)	16,818 (26.0%)	64,774 (24.0%)
Medium (96.81-<100)	81,916 (86.2%)	4,306 (11.1%)	38,674 (22.2%)	13,163 (90.9%)	1,315 (9.1%)	14,478 (22.4%)	28,597 (87.7%)	4,018 (12.3%)	32,615 (24.1%)	62,820 (92.4%)	5,190 (7.6%)	68,010 (22.8%)	46,485 (76.5%)	14,308 (23.5%)	60,793 (22.5%)
High (100)	81,916 (86.2%)	13,128 (13.8%)	95,044 (54.5%)	29,897 (85.7%)	4,996 (14.3%)	34,893 (53.9%)	55,372 (83.6%)	10,839 (16.4%)	66,211 (48.8%)	143,689 (90.5%)	15,060 (9.5%)	158,749 (53.2%)	112,708 (77.8%)	32,169 (22.2%)	144,877 (53.6%)

**Figure S-1. For individuals with an identifiable physician, adjusted odds ratios for being up to date on each screening test. The age reference group is indicated with R. All 95% confidence intervals do not overlap with 1.00 except those indicated with \*. Odds ratios also adjusted for patient co-morbidities (not shown).**



**Figure S-2. For individuals without an identifiable physician, Adjusted odds ratios for being up to date on each screening test.** The age reference group is indicated with **R**. All 95% confidence intervals do not overlap with 1.00 except those indicated with \*. Odds ratios also adjusted for patient co-morbidities (not shown).

