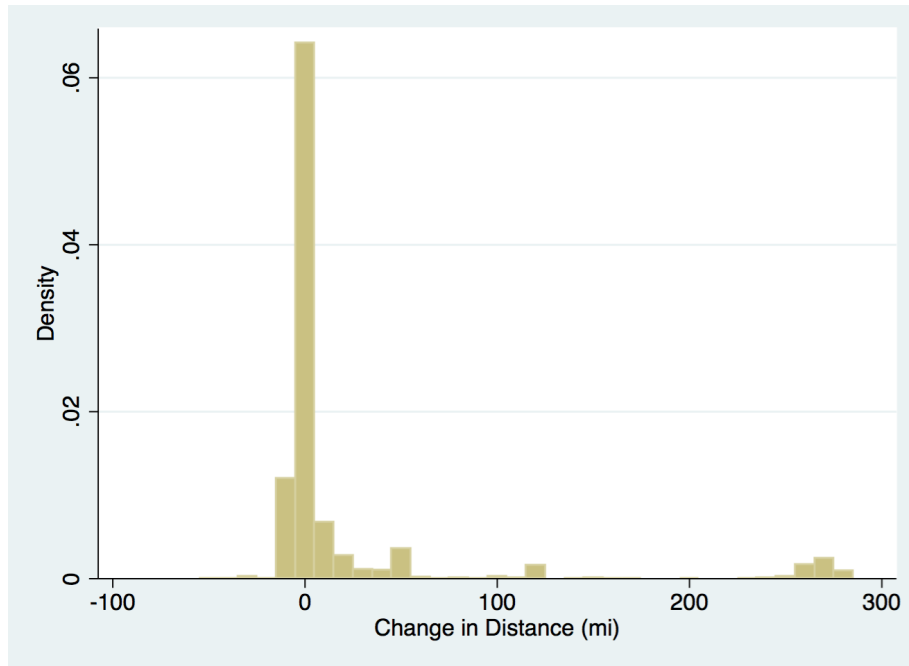


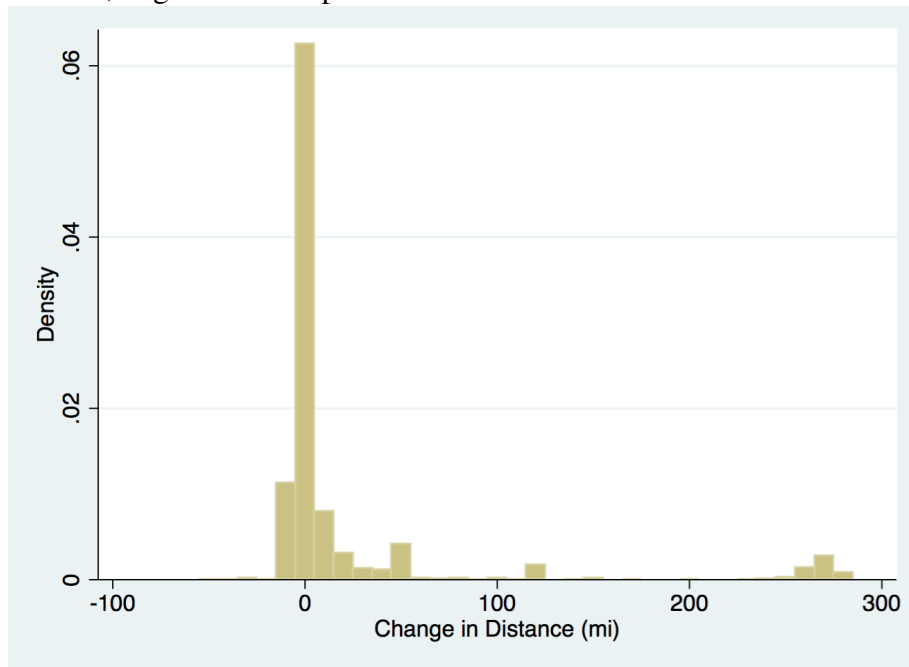
The Impact of Women's Health Clinic Closures On Preventive Care: Online Appendix
By Yao Lu and David J. G. Slusky

Online Appendix A Figure A.1: Non-Zero Changes in Driving Distance to Nearest Clinic, 2007–2012

(a) Women Aged 18–44



(b) Women Aged 18–44, High School Diploma or Less



Notes: The sample includes Texas and Wisconsin ZIP codes, weighted by population based on Census data. Each histogram shows the distribution of changes in past-year driving distance to the nearest clinic between August 16, 2008, and December 31, 2012. We exclude ZIP codes that experienced no change in distance during this period.

Online Appendix B Table B.1: BRFSS Summary Statistics, 2012

	Landline Telephone	Cellular Telephone Only	p-value
	(1)	(2)	(3)
Dependent Variables			
Clinical breast exam in last 12 months	0.60	0.49	0.000***
Mammogram in last 12 months	0.20	0.12	0.000***
Pap test in last 12 months	0.57	0.57	0.901
Routine checkup in last 12 months	0.66	0.61	0.017**
Individual and Other Characteristics			
Age (years)	34.3	29.8	0.000***
White	0.53	0.40	0.000***
Black	0.09	0.16	0.000***
Hispanic	0.30	0.39	0.000***
High school graduate (or GED equivalent)	0.24	0.25	0.588
Some college (including technical school)	0.34	0.39	0.044**
College graduate	0.28	0.20	0.000***
Annual household income level (1–8)	5.8	4.7	0.000***
Employed	0.60	0.57	0.276
Married	0.57	0.34	0.000***
Has health care coverage	0.73	0.61	0.000***
Past-year county unemployment rate (pp)	7.45	7.52	0.345
Driving distance to nearest clinic (mi)	33.9 (53.9)	22.3 (41.9)	0.000***
Number of Observations	1,063	731	

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Weighted means are calculated from the sample of non-pregnant females aged 18–44 in the 2012 BRFSS datasets for Texas and Wisconsin. For each column, we limit observations to those with no missing values for any of the dependent variables or individual/other characteristics. Numbers in columns 1–2 are expressed as a fraction of the total sample, unless otherwise noted. Column 3 refers to the p-value for a mean-comparison test between the landline telephone sample and the cellular telephone-only sample. Standard deviations in parentheses.

Online Appendix C Table C.1: Impact of Clinic Closures on Cancer Screening, 2007–2012: County Fixed Effects

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.104** (0.050)	-0.102** (0.050)	-0.102** (0.050)	-0.209*** (0.067)	-0.203*** (0.068)	-0.196*** (0.070)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.220	0.220	0.220	0.347	0.349	0.350
DepVarMean	0.57	0.57	0.57	0.48	0.48	0.48

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.002 (0.061)	-0.001 (0.061)	-0.002 (0.062)	-0.081*** (0.028)	-0.076*** (0.027)	-0.076*** (0.027)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.202	0.202	0.202	0.287	0.289	0.289
DepVarMean	0.19	0.19	0.19	0.13	0.13	0.13

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.054 (0.052)	-0.055 (0.053)	-0.052 (0.052)	-0.122* (0.071)	-0.126* (0.073)	-0.115* (0.070)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.171	0.171	0.172	0.312	0.313	0.316
DepVarMean	0.59	0.59	0.59	0.52	0.52	0.52

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table C.2 for full table notes.

Online Appendix C Table C.2: Impact of Clinic Closures on Routine Checkups, 2007–2012: County Fixed Effects

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.083 (0.054)	-0.086 (0.054)	-0.082 (0.056)	-0.090 (0.061)	-0.090 (0.062)	-0.086 (0.064)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.209	0.209	0.210	0.356	0.356	0.356
DepVarMean	0.63	0.63	0.63	0.56	0.56	0.56

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Driving distance is in units of 100 miles.

Standard errors are reported in parentheses and are clustered by county.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain county and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix D Table D.1: Impact of Clinic Closures on Cancer Screening, 2007–2012: Imputed and Non-Imputed Observations

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.040** (0.020)	-0.031* (0.018)	-0.030* (0.018)	-0.080*** (0.030)	-0.083** (0.033)	-0.087*** (0.032)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	6,504	6,504	6,504	2,279	2,279	2,279
R ²	0.491	0.492	0.492	0.664	0.664	0.664
DepVarMean	0.58	0.58	0.58	0.48	0.48	0.48

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.052* (0.027)	-0.055** (0.027)	-0.057** (0.028)	-0.110*** (0.014)	-0.112*** (0.015)	-0.119*** (0.016)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	6,515	6,515	6,515	2,288	2,288	2,288
R ²	0.474	0.474	0.474	0.640	0.640	0.643
DepVarMean	0.19	0.19	0.19	0.13	0.13	0.13

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.051** (0.020)	-0.046** (0.019)	-0.044** (0.020)	-0.056* (0.032)	-0.058* (0.034)	-0.055 (0.034)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	6,496	6,496	6,496	2,278	2,278	2,278
R ²	0.456	0.456	0.457	0.659	0.659	0.659
DepVarMean	0.60	0.60	0.60	0.53	0.53	0.53

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table D.2 for full table notes.

Online Appendix D Table D.2: Impact of Clinic Closures on Routine Checkups, 2007–2012: Imputed and Non-Imputed Observations

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.027* (0.014)	-0.020 (0.014)	-0.018 (0.014)	-0.059 (0.050)	-0.047 (0.050)	-0.044 (0.051)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	6,644	6,644	6,644	2,355	2,355	2,355
R ²	0.478	0.478	0.478	0.692	0.693	0.693
DepVarMean	0.63	0.63	0.63	0.56	0.56	0.56

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Driving distance is in units of 100 miles.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

We restrict the sample to non-pregnant females aged 18–44 from the BRFSS 2008, 2010, and 2012 surveys. The sample includes both observations with imputed and observations with non-imputed driving distance values during the 2007–2012 period. For individuals surveyed before mid-August 2008, who lack a full past year of distance data, we impute their past-year driving distance by assuming that the distances observed at the beginning of the clinic location data set were constant for the entire preceding nine months (i.e., January–September 2007).

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix E Table E.1: Impact of Clinic Closures on Cancer Screening, 2007–2012: Crow-flies Distance to Nearest Clinic as Alternative Measure of Distance

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Crow-flies 1 – 100 mi	-0.082** (0.035)	-0.070** (0.035)	-0.070* (0.036)	-0.207*** (0.069)	-0.206*** (0.070)	-0.208*** (0.070)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.575	0.576	0.576	0.742	0.742	0.742

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Crow-flies 1 – 100 mi	-0.033 (0.050)	-0.031 (0.052)	-0.036 (0.055)	-0.102** (0.040)	-0.091** (0.037)	-0.102*** (0.038)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.537	0.537	0.537	0.688	0.689	0.691

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Crow-flies 1 – 100 mi	-0.100** (0.046)	-0.096** (0.046)	-0.093** (0.047)	-0.105 (0.078)	-0.101 (0.078)	-0.088 (0.078)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.536	0.536	0.536	0.737	0.737	0.738

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table E.2 for full table notes.

Online Appendix E Table E.2: Impact of Clinic Closures on Routine Checkups, 2007–2012: Crow-flies Distance to Nearest Clinic as Alternative Measure of Distance

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Crow-flies 1 – 100 mi	-0.034 (0.026)	-0.033 (0.026)	-0.029 (0.027)	-0.103 (0.072)	-0.088 (0.069)	-0.080 (0.073)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.545	0.545	0.545	0.738	0.739	0.739

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Crow-flies distance is in units of 100 miles.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix E Table E.3: Impact of Clinic Closures on Cancer Screening, 2007–2012: Average Crow-flies Distance to Three Nearest Clinics as Alternative Measure of Distance

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Crow-flies 3 – 100 mi	-0.061 (0.044)	-0.053 (0.043)	-0.053 (0.044)	-0.209*** (0.069)	-0.208*** (0.069)	-0.209*** (0.069)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.575	0.576	0.576	0.742	0.742	0.742

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Crow-flies 3 – 100 mi	0.003 (0.070)	0.005 (0.070)	0.001 (0.073)	-0.096** (0.039)	-0.087** (0.037)	-0.097** (0.038)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.537	0.537	0.537	0.688	0.689	0.691

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Crow-flies 3 – 100 mi	-0.102** (0.052)	-0.099* (0.052)	-0.097* (0.053)	-0.116 (0.091)	-0.112 (0.089)	-0.101 (0.091)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.536	0.536	0.537	0.737	0.737	0.738

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table E.4 for full table notes.

Online Appendix E Table E.4: Impact of Clinic Closures on Routine Checkups, 2007–2012: Average Crow-flies Distance to Three Nearest Clinics as Alternative Measure of Distance

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Crow-flies 3 – 100 mi	-0.014 (0.030)	-0.013 (0.031)	-0.010 (0.030)	-0.113 (0.077)	-0.100 (0.075)	-0.093 (0.078)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.545	0.545	0.545	0.738	0.739	0.739

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Crow-flies distance is in units of 100 miles.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix E Table E.5: Impact of Clinic Closures on Cancer Screening, 2007–2012: Driving Time to Nearest Clinic as Alternative Measure of Distance

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Time – 100 min	-0.091** (0.041)	-0.078* (0.040)	-0.079* (0.041)	-0.224*** (0.078)	-0.223*** (0.079)	-0.224*** (0.078)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.575	0.576	0.576	0.743	0.743	0.743

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Time – 100 min	-0.043 (0.045)	-0.041 (0.047)	-0.046 (0.050)	-0.102** (0.039)	-0.091** (0.037)	-0.101*** (0.037)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.537	0.537	0.537	0.688	0.689	0.691

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Time – 100 min	-0.116** (0.053)	-0.111** (0.052)	-0.108** (0.054)	-0.124 (0.096)	-0.120 (0.095)	-0.107 (0.096)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.536	0.536	0.537	0.737	0.737	0.738

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table E.6 for full table notes.

Online Appendix E Table E.6: Impact of Clinic Closures on Routine Checkups, 2007–2012: Driving Time to Nearest Clinic as Alternative Measure of Distance

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Time – 100 min	-0.034 (0.031)	-0.033 (0.030)	-0.029 (0.031)	-0.129 (0.095)	-0.114 (0.092)	-0.107 (0.095)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.545	0.545	0.545	0.738	0.739	0.739

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Driving time is in units of 100 minutes and is calculated via the Google Geocoding API.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix E Table E.7: Impact of Clinic Closures on Cancer Screening, 2007–2012: Number of Clinics Within 10 Miles as Alternative Measure of Distance

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Num. Clinics	0.029 (0.025)	0.031 (0.022)	0.031 (0.022)	0.106*** (0.038)	0.106*** (0.038)	0.106*** (0.038)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.575	0.576	0.576	0.746	0.746	0.746

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Num. Clinics	-0.022 (0.023)	-0.022 (0.023)	-0.022 (0.024)	-0.004 (0.048)	-0.004 (0.046)	-0.004 (0.048)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.537	0.537	0.538	0.687	0.688	0.690

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Num. Clinics	0.032** (0.016)	0.033** (0.015)	0.033** (0.014)	0.027 (0.037)	0.027 (0.036)	0.026 (0.036)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.536	0.537	0.537	0.736	0.737	0.738

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table E.8 for full table notes.

Online Appendix E Table E.8: Impact of Clinic Closures on Routine Checkups, 2007–2012: Number of Clinics Within 10 Miles as Alternative Measure of Distance

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Num. Clinics	0.008 (0.014)	0.008 (0.014)	0.008 (0.013)	0.030 (0.031)	0.030 (0.030)	0.030 (0.030)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.545	0.545	0.545	0.738	0.739	0.739

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Key independent variable is the number of (in-network) clinics within 10 crow-flies miles.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix E Table E.9: Impact of Clinic Closures on Cancer Screening, 2007–2012: Indicator for Any Clinics Within 10 Miles as Alternative Measure of Distance

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Any clinics – in 10 mi	0.093 (0.079)	0.091 (0.072)	0.090 (0.072)	0.451*** (0.152)	0.451*** (0.153)	0.452*** (0.154)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.575	0.576	0.576	0.745	0.745	0.745

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Any clinics – in 10 mi	0.049 (0.075)	0.049 (0.074)	0.053 (0.076)	0.063 (0.163)	0.060 (0.155)	0.068 (0.158)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.537	0.537	0.537	0.687	0.688	0.690

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Any clinics – in 10 mi	0.056 (0.088)	0.055 (0.086)	0.052 (0.086)	-0.051 (0.154)	-0.053 (0.149)	-0.064 (0.142)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.536	0.536	0.536	0.736	0.736	0.737

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table E.10 for full table notes.

Online Appendix E Table E.10: Impact of Clinic Closures on Routine Checkups, 2007–2012: Indicator for Any Clinics Within 10 Miles as Alternative Measure of Distance

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Any clinics – in 10 mi	-0.007 (0.125)	-0.008 (0.125)	-0.011 (0.125)	0.188 (0.175)	0.184 (0.180)	0.177 (0.180)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.545	0.545	0.545	0.738	0.739	0.740

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Key independent variable is an indicator for whether there are any (in-network) clinics within 10 crow-flies miles.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix E Table E.11: Impact of Clinic Closures on Cancer Screening, 2007–2012: Log Driving Distance

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Driv Dist)	-0.040*	-0.037*	-0.037*	-0.096***	-0.095***	-0.096***
	(0.022)	(0.021)	(0.021)	(0.033)	(0.033)	(0.033)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.575	0.576	0.576	0.743	0.743	0.743

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Driv Dist)	-0.018	-0.018	-0.020	-0.051***	-0.047***	-0.051***
	(0.020)	(0.020)	(0.021)	(0.017)	(0.016)	(0.018)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.537	0.537	0.537	0.689	0.690	0.692

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Driv Dist)	-0.051**	-0.050**	-0.049**	-0.047	-0.046	-0.041
	(0.024)	(0.024)	(0.024)	(0.040)	(0.039)	(0.039)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.537	0.537	0.537	0.737	0.737	0.738

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table E.12 for full table notes.

Online Appendix E Table E.12: Impact of Clinic Closures on Routine Checkups, 2007–2012: Log Driving Distance

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Driv Dist)	-0.001 (0.014)	-0.001 (0.014)	0.000 (0.015)	-0.042 (0.030)	-0.037 (0.031)	-0.034 (0.032)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.545	0.545	0.545	0.738	0.739	0.739

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Key independent variable is ln(driving distance in miles).

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix E Table E.13: Impact of Clinic Closures on Cancer Screening: Quadratic Function of Distance

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist	-0.093 (0.145)	-0.072 (0.146)	-0.072 (0.146)	-0.520 (0.398)	-0.518 (0.398)	-0.520 (0.396)
Dist Squared	0.007 (0.047)	0.003 (0.047)	0.003 (0.047)	0.120 (0.131)	0.120 (0.132)	0.120 (0.131)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.575	0.576	0.576	0.743	0.743	0.743
p-value	0.037	0.065	0.081	0.007	0.008	0.008

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist	0.047 (0.166)	0.052 (0.167)	0.053 (0.172)	-0.295* (0.165)	-0.274* (0.160)	-0.283* (0.153)
Dist Squared	-0.029 (0.050)	-0.030 (0.050)	-0.032 (0.051)	0.074 (0.053)	0.070 (0.052)	0.070 (0.050)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.537	0.537	0.537	0.688	0.689	0.691
p-value	0.071	0.115	0.074	0.023	0.032	0.016

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist	-0.152 (0.214)	-0.144 (0.213)	-0.144 (0.212)	-0.303 (0.409)	-0.294 (0.402)	-0.282 (0.407)
Dist Squared	0.024 (0.067)	0.022 (0.067)	0.023 (0.067)	0.076 (0.133)	0.074 (0.131)	0.073 (0.132)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.536	0.536	0.536	0.737	0.737	0.738
p-value	0.019	0.024	0.044	0.414	0.436	0.536

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Online Appendix E Table E.14: Impact of Clinic Closures on Routine Checkups, 2007–2012: Quadratic Function of Distance

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist	0.197 (0.145)	0.200 (0.144)	0.199 (0.147)	-0.090 (0.457)	-0.061 (0.450)	-0.057 (0.458)
Dist Squared	-0.081* (0.045)	-0.082* (0.045)	-0.080* (0.046)	-0.001 (0.144)	-0.007 (0.143)	-0.006 (0.145)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.545	0.545	0.546	0.738	0.739	0.739
p-value	0.022	0.022	0.036	0.198	0.279	0.371

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Key independent variables are driving distance (in units of 100 miles) and driving distance squared. For each regression, the last row reports the p-value for an F-test of the joint significance of the coefficients on the two powers of distance.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix F Table F.1: Impact of Clinic Closures on Cancer Screening, 2007–2012: CDC and DSHS Weights

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.068** (0.030)	-0.059* (0.030)	-0.060* (0.031)	-0.164*** (0.055)	-0.161*** (0.054)	-0.165*** (0.055)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,702	4,702	4,702	1,677	1,677	1,677
R ²	0.577	0.578	0.578	0.748	0.748	0.748
DepVarMean	0.57	0.57	0.57	0.47	0.47	0.47

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.025 (0.037)	-0.025 (0.038)	-0.029 (0.040)	-0.082** (0.033)	-0.075** (0.032)	-0.084*** (0.032)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,709	4,709	4,709	1,682	1,682	1,682
R ²	0.531	0.531	0.531	0.683	0.684	0.686
DepVarMean	0.17	0.17	0.17	0.12	0.12	0.12

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.086** (0.039)	-0.082** (0.038)	-0.080** (0.039)	-0.104 (0.065)	-0.099 (0.063)	-0.091 (0.064)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,696	4,696	4,696	1,675	1,675	1,675
R ²	0.538	0.539	0.539	0.734	0.734	0.735
DepVarMean	0.59	0.59	0.59	0.53	0.53	0.53

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table F.2 for full table notes.

Online Appendix F Table F.2: Impact of Clinic Closures on Routine Checkups, 2007–2012: CDC and DSHS Weights

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.031 (0.022)	-0.031 (0.022)	-0.027 (0.023)	-0.103* (0.061)	-0.092 (0.058)	-0.086 (0.061)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,823	4,823	4,823	1,743	1,743	1,743
R ²	0.547	0.547	0.547	0.737	0.737	0.738
DepVarMean	0.62	0.62	0.62	0.55	0.55	0.55

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Driving distance is in units of 100 miles.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use CDC and, when available, Texas Department of State Health Services (DSHS) survey weights for landline telephone households; the DSHS weights take geographic areas into account and are only available for Texas in 2008 and 2010. The regressions contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.

Online Appendix G Table G.1: Impact of Clinic Closures on Cancer Screening, 2007–2012: Excluding Out-of-State Closures & Openings

(A) Clinical Breast Exam

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.075** (0.030)	-0.065** (0.030)	-0.065** (0.031)	-0.178*** (0.060)	-0.177*** (0.060)	-0.178*** (0.060)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,680	4,680	4,680	1,672	1,672	1,672
R ²	0.575	0.576	0.576	0.742	0.742	0.742
DepVarMean	0.57	0.57	0.57	0.48	0.48	0.48

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(B) Mammogram

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.033 (0.039)	-0.031 (0.040)	-0.036 (0.042)	-0.085*** (0.033)	-0.076** (0.030)	-0.083*** (0.031)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,687	4,687	4,687	1,677	1,677	1,677
R ²	0.537	0.537	0.538	0.688	0.690	0.691
DepVarMean	0.19	0.19	0.19	0.13	0.13	0.13

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(C) Pap Test

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.086** (0.039)	-0.082** (0.038)	-0.080** (0.039)	-0.085 (0.066)	-0.082 (0.066)	-0.072 (0.066)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,674	4,674	4,674	1,670	1,670	1,670
R ²	0.536	0.536	0.536	0.737	0.737	0.738
DepVarMean	0.59	0.59	0.59	0.53	0.53	0.53

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: See Table G.2 for full table notes.

Online Appendix G Table G.2: Impact of Clinic Closures on Routine Checkups, 2007–2012: Excluding Out-of-State Closures & Openings

	Full Sample			High School Diploma or Less		
	(1)	(2)	(3)	(4)	(5)	(6)
Driving Dist – 100 mi	-0.028 (0.023)	-0.027 (0.022)	-0.024 (0.023)	-0.092 (0.064)	-0.079 (0.062)	-0.074 (0.065)
Controls	X	X	X	X	X	X
Time Trend		X			X	
State-Yr FE			X			X
Observations	4,800	4,800	4,800	1,738	1,738	1,738
R ²	0.545	0.545	0.545	0.738	0.739	0.739
DepVarMean	0.63	0.63	0.63	0.56	0.56	0.56

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: We exclude any observation with an out-of-state clinic closure or opening within the past year.

Driving distance is in units of 100 miles.

Standard errors are reported in parentheses and are clustered by county.

The dependent variable is an indicator for having received a particular preventive exam within the past year.

The sample includes all women interviewed from mid-August onward in 2008, as well as all women interviewed in the 2010 and 2012 BRFSS surveys. We restrict the sample to non-pregnant females aged 18–44.

All regressions use BRFSS survey weights for landline telephone households and contain ZIP code and year fixed effects, as well as linear annual state time trends, state-by-year fixed effects, and/or individual- and county-level control variables when indicated. Individual-level controls include age, and indicators for black, Hispanic, and “other” race/ethnicity categories (with white as the omitted category), marital and employment status, highest level of educational attainment (high school graduate or GED equivalent, some college, or college graduate), annual household income level (1–8 scale), and health care coverage. The county-level control is unemployment rate, averaged over the interview month and 11 preceding months.