

Online Supporting Information

Overview

This paper measures turnout rates before and after a spousal death to estimate the effects of spousal loss on turnout, and analyzes variations in turnout changes to evaluate social explanations for the observed widowhood effects.

The social explanation analysis is based on three assumptions: 1) persistent changes in turnout (changes not accompanied by a substantial gradual recovery for the year half of a spouse's death) are directly attributable to the absence of a spouse, and not the loss and grieving process; 2) relative voting histories of spouses (whether one spouse votes more, the same amount, or less than the other) are indicators of political engagement, and observed variations in turnout changes by relative spousal voting histories are attributable to differences in political engagement; and 3) changes in turnout caused by the absence of a mobilizing spouse can be moderated (over time) by the presence of other electors in the same household (e.g. as they assume new household and social support roles).

The tests of social explanations for drops in turnout following the death of a spouse are presented in the body of the article. We observe limited aggregate return to previous voting behavior in the year and a half following the death of a spouse and no aggregate return to previous voting behavior past the one year anniversary of spousal death, electors who voted less than the decedent spouse are substantially more affected by the spouse's absence than electors who voted more, and widowed individuals who lived with other electors (likely family members) at the time of their spouse's death gradually return to previous voting behavior past the one year mark.

In this supporting information, we detail the structure of the dataset used in the above analysis, and test alternative explanations for observed turnout patterns.

Data Structure

Our longitudinal and between cohort analyses are constructed from three elections – the Special Statewide 2009, the Gubernatorial Primary 2010, and the Gubernatorial General 2010. In the main

article (Figure 1), we arrange cohorts by weeks since spousal death and show that the average treatment effect on the treated (ATET) estimates for each of the three elections are comparable when arranged this way. Given this and that we do not observe turnout rates for one and half years before and after spousal deaths for each of the three elections, we treat turnout rates in each election as representative.

Specifically, for graphical clarity and because the results are substantively equivalent, we do not display the Gubernatorial Primary 2010 results in the gender and voting history comparisons (Figures 2 and 3). Also, the analysis of recovery over the study period (in Figure 10) is restricted to the Gubernatorial General 2010 because we do not observe widowed individuals for a sufficiently long period following the special and primary elections. This approach is further supported in Figures 6 and 7 where we show that turnout patterns in the study population (most of which is over the age of 45) are similar for each election.

In Figure 5, we show the original data structure for our analysis. The x-axis in each plot is still the weeks since spousal death, but each plot shows cohorts/calendar weeks vertically aligned – each widowed cohort at the same chronological/horizontal position on across rows is the same group of individuals. We also note calendar date by season and year at the top of each plot in the middle column of this figure – while weeks since spousal death increases from left to right, calendar time is more recent on the left side of the plots. The rows plots are also arranged vertically (top to bottom) by chronological date of the election, and the election dates (at x-axis 0) move from right to left across rows.

The plots are otherwise very similar to those in the main text. The left column of plots shows the weighted (using match weights), average turnout rates (y-axis) for both cases (crosses) and controls (circles). In each remaining plots for the paper, the control turnout rate is the baseline ‘0.0’. In the middle and right columns of plots, the y-axis is the proportional treatment effect on the treated. The middle column of plots is the data setup used in the overall, gender, and voting history analyses in the main text. The right column of plots shows the data setup for the recovery analyses (focused on weeks 15 through 52, and the post one year anniversary period).

whom we observe either no corresponding cases or controls are dropped from the analysis entirely. Figures 6 and 7 shows the effects of this matching and pruning process on the representativeness of our sample. Our analysis is most representative for the forty-five to ninety age range. Figures 6 and 7 further show that turnout patterns in this age group are comparable in low and high salience elections.

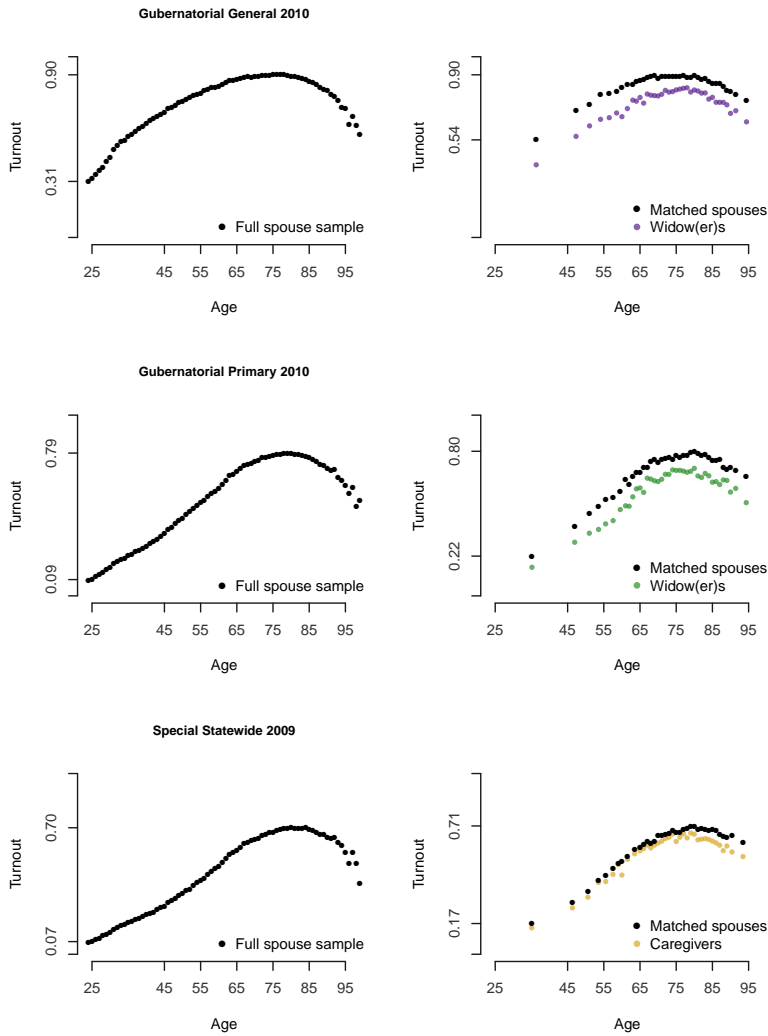


FIGURE 6: In-sample turnout, by age (identical voting histories only)

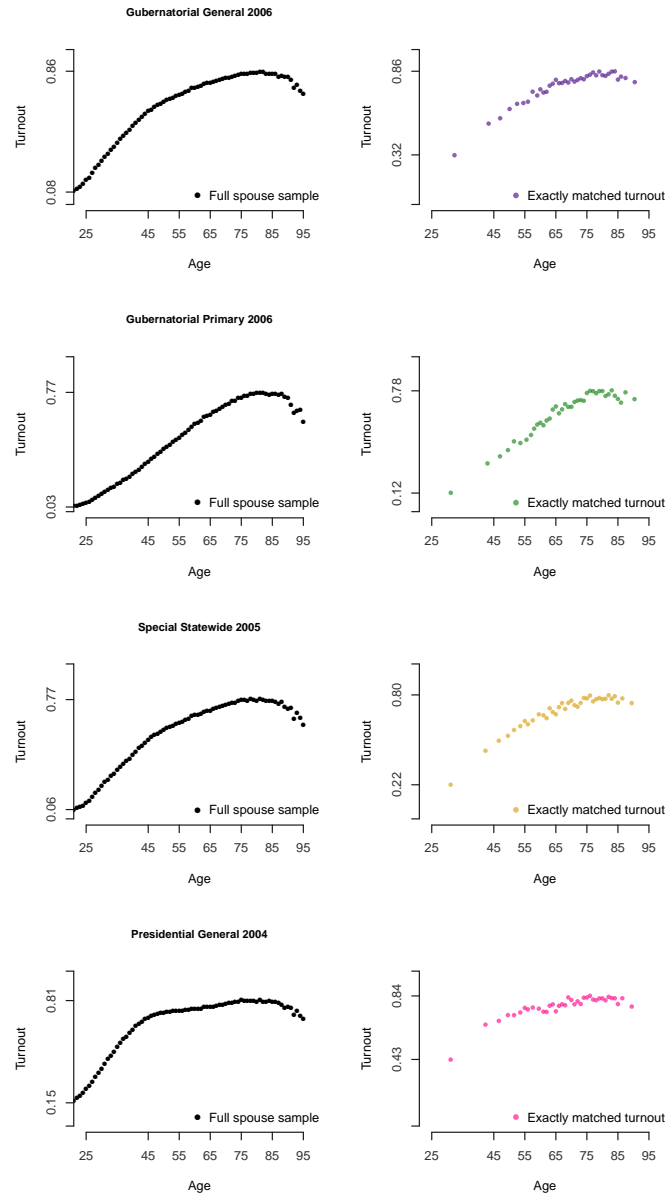


FIGURE 7: In-sample turnout in matched elections, by age (identical voting histories only)

Age-related disability and magnitude of widowhood effects

An alternative explanation for turnout discrepancies between spouses with different voting histories is the relative health of each spouse. If this is the case, that differences in past voting history are determined by disability, then we should observe smaller discrepancies in turnout among surviving, younger spouses for whom rates of long-term, debilitating illness are very low. That is,

though it is perhaps likely that the deceased spouses, both old and young, were chronically ill, it is much less likely that two young spouses have terminal or prohibitively debilitating illnesses than two older spouses.

Given this, we analyze changes in turnout by age. Consistent with disability-related dependency affecting the ability to vote, figure 8 shows that widowhood effects increase past age seventy-five. However, disability does not appear to be a determinant of turnout discrepancies between relative voting history subgroups (those who voted more or less than the deceased spouse). Figure 9 shows that the differences in widowhood effects between subjects whose spouse votes more and subjects whose spouse votes less are the same across age groups.

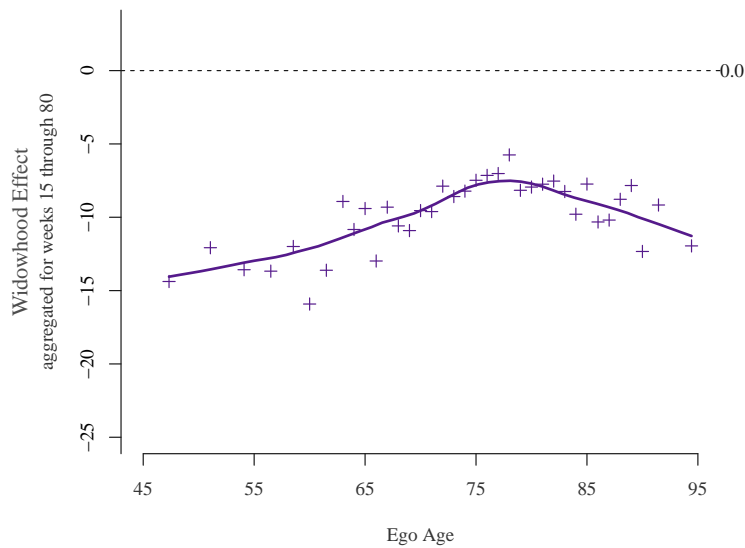


FIGURE 8: *Widowhood effects, by age.* This figure shows the loess smooth (span = .4) of the average treatment effect on the treated by age in the 2010 California Gubernatorial General election. It shows subjects whose spouses possessed identical voting histories. Cohorts include widows and widowers who lost a spouse 15 to 80 weeks prior to the election.

Recovery Analysis and Tests of Alternate Explanations

We show in the main text that returns to previous turnout rates past the one year anniversary of a spouse's death are significant only among those living with others at the time of the death (and presumably living with others in the time after the death). However, living with others or the ability to return to previous voting behavior is perhaps determined by other factors. For example,

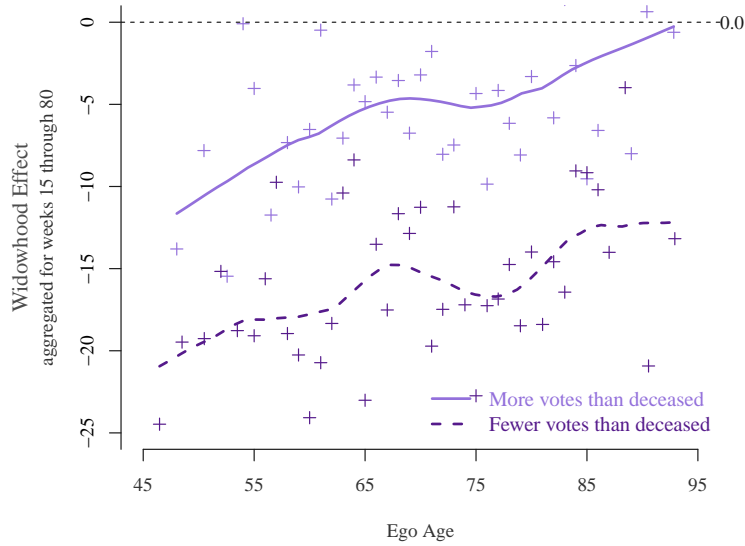


FIGURE 9: Voting history comparison, by age. This figure shows the loess smooth (span = .4) of the average treatment effect on the treated by age in the 2010 California Gubernatorial General election. It separates subjects whose deceased spouses vote more and those whose spouses voted less to show that past voting history is not a proxy for health. Cohorts include widows and widowers who lost a spouse 15 to 80 weeks prior to the election.

younger widows may be less likely to have functional limitations and therefore more able to return to previous behavior. Further, the ability to vote may be determined by community support and the accessibility of polling places. In Figures 10, 11, and 12, we show that the age, population density, and area per capita income are less strong predictors of recovery rates in the post-anniversary period than household occupancy.

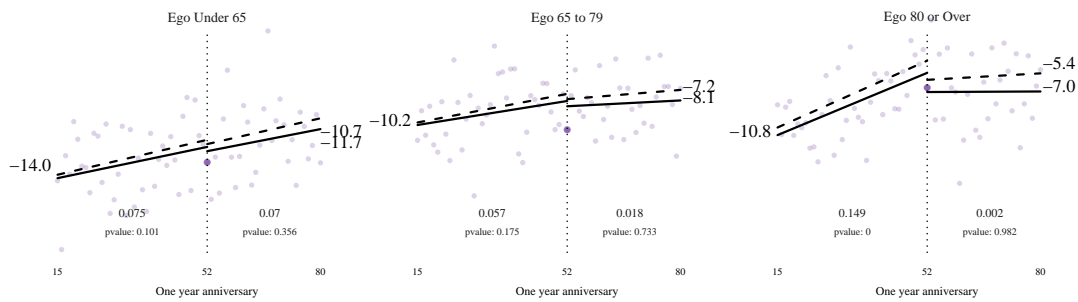


FIGURE 10: Recovery, by age

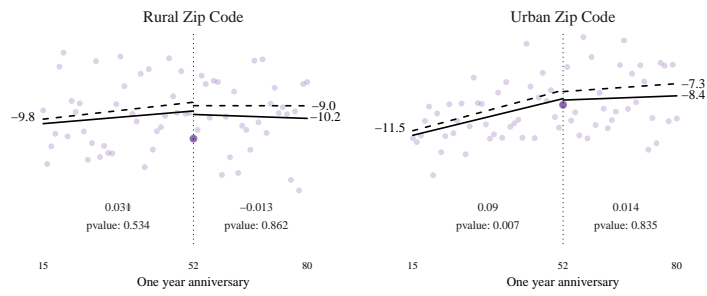


FIGURE 11: Recovery, by population density

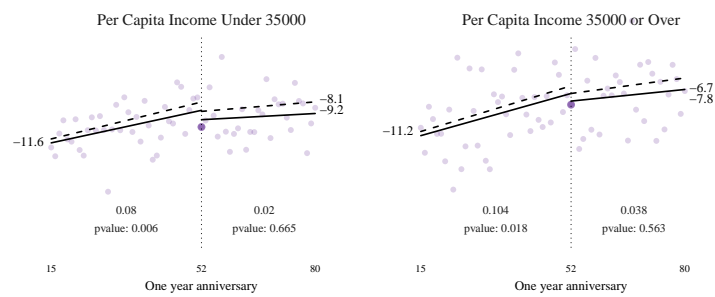


FIGURE 12: Recovery, by per capita income in zip code

Tests of Additional Alternative Explanations

To allow readers to easily assess significance levels, proportional treatment effects, and possible alternative explanations for observed patterns, we include below a number of aggregate results not displayed in the main article. In particular, we highlight that low past turnout rates are less strong predictors of widowhood effects than social, relative voting history comparisons.

TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
All Registered Voters						
<i>Special Statewide 2009</i>	-0.026 (-4.5%) (-0.023, -0.029) n = 26150, m = 0.98	-0.049 (-8.7%) (-0.046, -0.052) n = 23484, m = 0.98	-0.098 (-17.6%) (-0.093, -0.104) n = 8530, m = 0.98			
<i>Gubernatorial Primary 2010</i>			-0.089 (-13.6%) (-0.084, -0.094) n = 9402, m = 0.99	-0.149 (-22.6%) (-0.144, -0.154) n = 9763, m = 0.98	-0.096 (-14.6%) (-0.092, -0.099) n = 22459, m = 0.98	
<i>Gubernatorial General 2010</i>			-0.091 (-11%) (-0.088, -0.095) n = 10779, m = 0.98	-0.14 (-16.7%) (-0.136, -0.143) n = 9513, m = 0.99	-0.103 (-12.3%) (-0.1, -0.105) n = 23820, m = 0.98	-0.091 (-11%) (-0.088, -0.094) n = 16223, m = 0.98
Female Subject						
<i>Special Statewide 2009</i>	-0.03 (-5.3%) (-0.026, -0.035) n = 12468, m = 0.99	-0.055 (-9.7%) (-0.05, -0.059) n = 11174, m = 0.99	-0.098 (-17.3%) (-0.09, -0.105) n = 4036, m = 0.99			
<i>Gubernatorial Primary 2010</i>			-0.101 (-15.5%) (-0.094, -0.108) n = 4603, m = 0.99	-0.153 (-23.3%) (-0.146, -0.16) n = 4615, m = 0.99	-0.099 (-15.2%) (-0.095, -0.104) n = 10660, m = 0.99	
<i>Gubernatorial General 2010</i>			-0.101 (-12.1%) (-0.096, -0.106) n = 5109, m = 0.99	-0.151 (-18.1%) (-0.146, -0.157) n = 4522, m = 0.99	-0.103 (-12.4%) (-0.1, -0.107) n = 11425, m = 0.99	-0.088 (-10.6%) (-0.084, -0.092) n = 7660, m = 0.99
Male Subject						
<i>Special Statewide 2009</i>	-0.02 (-3.5%) (-0.014, -0.026) n = 6172, m = 0.98	-0.036 (-6.3%) (-0.029, -0.043) n = 5561, m = 0.98	-0.088 (-15.7%) (-0.077, -0.1) n = 1924, m = 0.98			
<i>Gubernatorial Primary 2010</i>			-0.079 (-11.8%) (-0.068, -0.089) n = 2161, m = 0.98	-0.127 (-19.1%) (-0.117, -0.137) n = 2275, m = 0.98	-0.09 (-13.5%) (-0.083, -0.096) n = 5308, m = 0.98	
<i>Gubernatorial General 2010</i>			-0.079 (-9.5%) (-0.072, -0.087) n = 2552, m = 0.98	-0.106 (-12.6%) (-0.098, -0.114) n = 2256, m = 0.99	-0.091 (-10.9%) (-0.087, -0.096) n = 5622, m = 0.98	-0.087 (-10.5%) (-0.081, -0.093) n = 3731, m = 0.98

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TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
Subject Under 65						
<i>Special Statewide 2009</i>	-0.016 (-4.2%) (-0.01, -0.022) n = 6766, m = 1	-0.034 (-8.9%) (-0.028, -0.04) n = 6097, m = 0.99	-0.074 (-19.3%) (-0.064, -0.084) n = 2394, m = 1			
<i>Gubernatorial Primary 2010</i>			-0.071 (-14.8%) (-0.061, -0.081) n = 2506, m = 0.99	-0.135 (-28.2%) (-0.125, -0.145) n = 2493, m = 1	-0.104 (-21.9%) (-0.098, -0.111) n = 5997, m = 0.99	
<i>Gubernatorial General 2010</i>			-0.087 (-11.5%) (-0.079, -0.096) n = 2704, m = 1	-0.183 (-23.6%) (-0.174, -0.191) n = 2528, m = 0.99	-0.137 (-17.9%) (-0.132, -0.143) n = 6156, m = 0.99	-0.117 (-15.2%) (-0.11, -0.123) n = 4422, m = 1
Subject 65 to 79						
<i>Special Statewide 2009</i>	-0.021 (-3.4%) (-0.016, -0.026) n = 10481, m = 0.99	-0.041 (-6.6%) (-0.035, -0.046) n = 9321, m = 0.99	-0.095 (-15.5%) (-0.087, -0.104) n = 3369, m = 0.99			
<i>Gubernatorial Primary 2010</i>			-0.092 (-12.8%) (-0.085, -0.1) n = 3819, m = 0.99	-0.155 (-21.5%) (-0.148, -0.162) n = 3853, m = 0.99	-0.089 (-12.3%) (-0.084, -0.094) n = 8943, m = 0.99	
<i>Gubernatorial General 2010</i>			-0.083 (-9.5%) (-0.078, -0.088) n = 4323, m = 0.99	-0.116 (-13.2%) (-0.11, -0.121) n = 3795, m = 0.99	-0.094 (-10.7%) (-0.09, -0.097) n = 9475, m = 0.99	-0.085 (-9.7%) (-0.08, -0.089) n = 6445, m = 0.99
Subject 80 or Over						
<i>Special Statewide 2009</i>	-0.038 (-5.8%) (-0.033, -0.043) n = 8803, m = 0.96	-0.07 (-10.7%) (-0.065, -0.075) n = 7958, m = 0.96	-0.125 (-19.3%) (-0.116, -0.134) n = 2738, m = 0.95			
<i>Gubernatorial Primary 2010</i>			-0.1 (-13.9%) (-0.092, -0.108) n = 3043, m = 0.96	-0.154 (-21.4%) (-0.146, -0.162) n = 3368, m = 0.96	-0.097 (-13.4%) (-0.092, -0.102) n = 7434, m = 0.96	
<i>Gubernatorial General 2010</i>			-0.105 (-12.5%) (-0.098, -0.111) n = 3705, m = 0.96	-0.133 (-15.9%) (-0.126, -0.14) n = 3159, m = 0.97	-0.087 (-10.4%) (-0.082, -0.091) n = 8080, m = 0.96	-0.076 (-9.2%) (-0.071, -0.082) n = 5299, m = 0.96
Female Subject Under 65						

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TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
<i>Special Statewide 2009</i>	-0.019 (-5%) (-0.011, -0.028) n = 3284, m = 1	-0.032 (-8.4%) (-0.023, -0.041) n = 2940, m = 1	-0.075 (-19.3%) (-0.061, -0.09)			
<i>Gubernatorial Primary 2010</i>			-0.074 (-15.2%) (-0.06, -0.088) n = 1247, m = 1	-0.143 (-29.8%) (-0.129, -0.157) n = 1233, m = 1	-0.112 (-23.5%) (-0.103, -0.121) n = 2837, m = 1	
<i>Gubernatorial General 2010</i>			-0.091 (-11.7%) (-0.079, -0.103) n = 1264, m = 1	-0.195 (-24.8%) (-0.183, -0.206) n = 1243, m = 1	-0.141 (-18.2%) (-0.134, -0.149) n = 3022, m = 1	-0.117 (-15%) (-0.108, -0.126) n = 2087, m = 1
Male Subject Under 65						
<i>Special Statewide 2009</i>	-0.002 (-0.6%) (0.01, -0.014) n = 1608, m = 0.99	-0.02 (-5.2%) (-0.007, -0.032) n = 1485, m = 0.99	-0.06 (-16.5%) (-0.04, -0.081) n = 549, m = 1			
<i>Gubernatorial Primary 2010</i>			-0.078 (-16.6%) (-0.057, -0.099) n = 572, m = 0.99	-0.103 (-21.4%) (-0.083, -0.124) n = 597, m = 1	-0.084 (-17.9%) (-0.071, -0.097) n = 1437, m = 0.99	
<i>Gubernatorial General 2010</i>			-0.062 (-8.3%) (-0.045, -0.079) n = 658, m = 0.99	-0.136 (-17.9%) (-0.119, -0.154) n = 598, m = 0.99	-0.115 (-15%) (-0.104, -0.126) n = 1483, m = 0.99	-0.094 (-12.5%) (-0.08, -0.107) n = 1033, m = 1
Female Subject 65 to 79						
<i>Special Statewide 2009</i>	-0.024 (-3.9%) (-0.017, -0.031) n = 5211, m = 0.99	-0.05 (-8%) (-0.042, -0.057) n = 4476, m = 0.99	-0.088 (-14.2%) (-0.076, -0.1) n = 1648, m = 0.99			
<i>Gubernatorial Primary 2010</i>			-0.11 (-15.1%) (-0.099, -0.12) n = 1945, m = 0.99	-0.161 (-22%) (-0.15, -0.171) n = 1804, m = 0.99	-0.09 (-12.4%) (-0.083, -0.097) n = 4337, m = 0.99	
<i>Gubernatorial General 2010</i>			-0.086 (-9.8%) (-0.079, -0.093) n = 2148, m = 0.99	-0.132 (-15.1%) (-0.124, -0.139) n = 1892, m = 0.99	-0.093 (-10.6%) (-0.089, -0.098) n = 4596, m = 0.99	-0.085 (-9.6%) (-0.079, -0.091) n = 3113, m = 0.99
Male Subject 65 to 79						
<i>Special Statewide 2009</i>	-0.022 (-3.6%)	-0.034 (-5.3%)	-0.085 (-13.7%)			

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TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
	(-0.012, -0.033)	(-0.023, -0.044)	(-0.066, -0.103)			
	n = 2206, m = 0.98	n = 2034, m = 0.99	n = 697, m = 0.98			
<i>Gubernatorial Primary 2010</i>			-0.072 (-10.1%)	-0.147 (-20.4%)	-0.092 (-12.6%)	
			(-0.056, -0.088)	(-0.132, -0.163)	(-0.082, -0.102)	
			n = 787, m = 0.99	n = 845, m = 0.99	n = 1942, m = 0.98	
<i>Gubernatorial General 2010</i>			-0.092 (-10.4%)	-0.091 (-10.3%)	-0.095 (-10.7%)	-0.082 (-9.3%)
			(-0.081, -0.103)	(-0.079, -0.102)	(-0.087, -0.102)	(-0.073, -0.09)
			n = 918, m = 0.98	n = 788, m = 0.99	n = 2065, m = 0.99	n = 1362, m = 0.98
Female Subject 80 or Over						
<i>Special Statewide 2009</i>	-0.049 (-7.4%)	-0.079 (-12.2%)	-0.134 (-20.7%)			
	(-0.041, -0.056)	(-0.071, -0.087)	(-0.121, -0.148)			
	n = 3932, m = 0.97	n = 3706, m = 0.96	n = 1255, m = 0.96			
<i>Gubernatorial Primary 2010</i>			-0.113 (-16%)	-0.153 (-21.6%)	-0.103 (-14.4%)	
			(-0.1, -0.125)	(-0.141, -0.165)	(-0.095, -0.111)	
			n = 1399, m = 0.97	n = 1551, m = 0.96	n = 3447, m = 0.96	
<i>Gubernatorial General 2010</i>			-0.129 (-15.4%)	-0.138 (-16.7%)	-0.084 (-10.2%)	-0.067 (-8.2%)
			(-0.12, -0.139)	(-0.128, -0.149)	(-0.077, -0.09)	(-0.059, -0.075)
			n = 1677, m = 0.96	n = 1373, m = 0.97	n = 3757, m = 0.96	n = 2432, m = 0.96
Male Subject 80 or Over						
<i>Special Statewide 2009</i>	-0.029 (-4.4%)	-0.049 (-7.4%)	-0.113 (-16.8%)			
	(-0.019, -0.039)	(-0.039, -0.06)	(-0.095, -0.131)			
	n = 2334, m = 0.96	n = 2019, m = 0.96	n = 669, m = 0.95			
<i>Gubernatorial Primary 2010</i>			-0.084 (-11.1%)	-0.127 (-17.1%)	-0.09 (-12.2%)	
			(-0.068, -0.099)	(-0.111, -0.142)	(-0.08, -0.101)	
			n = 795, m = 0.97	n = 825, m = 0.96	n = 1908, m = 0.96	
<i>Gubernatorial General 2010</i>			-0.082 (-9.7%)	-0.097 (-11.4%)	-0.074 (-8.7%)	-0.087 (-10.2%)
			(-0.07, -0.093)	(-0.085, -0.109)	(-0.066, -0.082)	(-0.077, -0.097)
			n = 964, m = 0.95	n = 863, m = 0.98	n = 2051, m = 0.96	n = 1323, m = 0.96
Female Subject - Opposite Sex Only						
<i>Special Statewide 2009</i>	-0.031 (-5.5%)	-0.051 (-9.1%)	-0.103 (-18%)			
	(-0.026, -0.036)	(-0.046, -0.056)	(-0.094, -0.111)			

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TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
	n = 10444, m = 0.99	n = 9382, m = 0.99	n = 3374, m = 0.99			
<i>Gubernatorial Primary 2010</i>			-0.101 (-15.5%) (-0.094, -0.109)	-0.156 (-23.7%) (-0.148, -0.163)	-0.104 (-15.8%) (-0.098, -0.109)	
			n = 3852, m = 0.99	n = 3820, m = 0.99	n = 8979, m = 0.99	
<i>Gubernatorial General 2010</i>			-0.103 (-12.3%) (-0.097, -0.109)	-0.153 (-18.2%) (-0.146, -0.159)	-0.105 (-12.6%) (-0.101, -0.109)	-0.088 (-10.5%) (-0.083, -0.093)
			n = 4289, m = 0.99	n = 3780, m = 0.99	n = 9543, m = 0.99	n = 6451, m = 0.99
Male Subject - Opposite Sex Only						
<i>Special Statewide 2009</i>	-0.021 (-3.7%) (-0.015, -0.028)	-0.032 (-5.5%) (-0.025, -0.04)	-0.095 (-16.2%) (-0.083, -0.107)			
	n = 5245, m = 0.99	n = 4741, m = 0.99	n = 1622, m = 0.99			
<i>Gubernatorial Primary 2010</i>			-0.079 (-11.6%) (-0.068, -0.09)	-0.137 (-20.2%) (-0.126, -0.148)	-0.091 (-13.4%) (-0.084, -0.098)	
			n = 1832, m = 0.99	n = 1944, m = 0.99	n = 4494, m = 0.99	
<i>Gubernatorial General 2010</i>			-0.081 (-9.6%) (-0.073, -0.088)	-0.102 (-12%) (-0.094, -0.11)	-0.096 (-11.2%) (-0.09, -0.101)	-0.09 (-10.7%) (-0.084, -0.097)
			n = 2176, m = 0.99	n = 1917, m = 1	n = 4795, m = 0.99	n = 3140, m = 0.99
More Votes than Spouse						
<i>Special Statewide 2009</i>	-0.009 (-1.8%) (-0.001, -0.017)	-0.026 (-5.3%) (-0.018, -0.035)	-0.053 (-10.8%) (-0.039, -0.067)			
	n = 3735, m = 0.92	n = 3472, m = 0.92	n = 1269, m = 0.93			
<i>Gubernatorial Primary 2010</i>			-0.076 (-12.3%) (-0.063, -0.089)	-0.091 (-15%) (-0.078, -0.104)	-0.04 (-6.6%) (-0.032, -0.049)	
			n = 1334, m = 0.93	n = 1397, m = 0.92	n = 3376, m = 0.93	
<i>Gubernatorial General 2010</i>			-0.07 (-8.3%) (-0.06, -0.079)	-0.09 (-10.8%) (-0.08, -0.101)	-0.057 (-6.8%) (-0.05, -0.063)	-0.052 (-6.2%) (-0.044, -0.059)
			n = 1539, m = 0.93	n = 1309, m = 0.93	n = 3517, m = 0.92	n = 2406, m = 0.92
Fewer Votes than Spouse						
<i>Special Statewide 2009</i>	-0.024 (-6.3%) (-0.015, -0.033)	-0.042 (-11%) (-0.032, -0.051)	-0.102 (-27.2%) (-0.087, -0.118)			
	n = 3088, m = 0.92	n = 2726, m = 0.93	n = 998, m = 0.91			

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TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
<i>Gubernatorial Primary 2010</i>			-0.091 (-19.8%) (-0.075, -0.106) n = 1091, m = 0.91	-0.171 (-36.1%) (-0.156, -0.186) n = 1113, m = 0.92	-0.122 (-26.6%) (-0.112, -0.131) n = 2657, m = 0.92	
<i>Gubernatorial General 2010</i>			-0.123 (-17.2%) (-0.11, -0.136) n = 1283, m = 0.92	-0.209 (-28.8%) (-0.196, -0.223) n = 1105, m = 0.92	-0.167 (-23.2%) (-0.158, -0.175) n = 2764, m = 0.93	-0.145 (-20.3%) (-0.135, -0.156) n = 1870, m = 0.92
Same Voting History						
<i>Special Statewide 2009</i>	-0.026 (-4.2%) (-0.022, -0.03) n = 18595, m = 0.98	-0.051 (-8.2%) (-0.047, -0.054) n = 16650, m = 0.98	-0.106 (-17.3%) (-0.099, -0.112) n = 6009, m = 0.98			
<i>Gubernatorial Primary 2010</i>			-0.089 (-12.8%) (-0.084, -0.095) n = 6700, m = 0.98	-0.156 (-22.2%) (-0.151, -0.162) n = 6978, m = 0.98	-0.101 (-14.4%) (-0.098, -0.105) n = 15815, m = 0.98	
<i>Gubernatorial General 2010</i>			-0.087 (-10.3%) (-0.083, -0.091) n = 7677, m = 0.98	-0.138 (-16.1%) (-0.133, -0.142) n = 6820, m = 0.98	-0.099 (-11.6%) (-0.096, -0.101) n = 16880, m = 0.98	-0.091 (-10.7%) (-0.088, -0.094) n = 11473, m = 0.98
Same Voting History - No Abstains						
<i>Special Statewide 2009</i>	-0.03 (-3.8%) (-0.025, -0.034) n = 9436, m = 1	-0.055 (-7.1%) (-0.051, -0.06) n = 8562, m = 1	-0.117 (-15.1%) (-0.109, -0.124) n = 3106, m = 1			
<i>Gubernatorial Primary 2010</i>			-0.091 (-10.4%) (-0.085, -0.097) n = 3356, m = 1	-0.166 (-19%) (-0.16, -0.171) n = 3559, m = 1	-0.115 (-13.1%) (-0.111, -0.118) n = 8194, m = 1	
<i>Gubernatorial General 2010</i>			-0.069 (-7.3%) (-0.065, -0.072) n = 3945, m = 1	-0.119 (-12.5%) (-0.115, -0.122) n = 3440, m = 1	-0.079 (-8.4%) (-0.077, -0.082) n = 8610, m = 1	-0.074 (-7.8%) (-0.071, -0.077) n = 5935, m = 1
Same Voting History - One Abstain						
<i>Special Statewide 2009</i>	-0.022 (-3.8%) (-0.013, -0.03) n = 3431, m = 0.97	-0.049 (-8.5%) (-0.04, -0.058) n = 2953, m = 0.97	-0.116 (-20.2%) (-0.101, -0.131) n = 1083, m = 0.97			
<i>Gubernatorial Primary 2010</i>			-0.116 (-17.1%)	-0.177 (-26.2%)	-0.112 (-16.7%)	

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TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
			(-0.102, -0.129)	(-0.163, -0.19)	(-0.103, -0.121)	
			n = 1250, m = 0.98	n = 1251, m = 0.97	n = 2812, m = 0.97	
<i>Gubernatorial General 2010</i>			-0.103 (-11.7%)	-0.169 (-19.1%)	-0.117 (-13.3%)	-0.108 (-12.3%)
			(-0.094, -0.112)	(-0.161, -0.178)	(-0.111, -0.123)	(-0.101, -0.116)
			n = 1366, m = 0.97	n = 1284, m = 0.98	n = 3083, m = 0.97	n = 2037, m = 0.97
Same Voting History - Two Abstains						
<i>Special Statewide 2009</i>	-0.028 (-5.5%)	-0.043 (-8.7%)	-0.11 (-23%)			
	(-0.017, -0.038)	(-0.032, -0.054)	(-0.091, -0.129)			
	n = 2244, m = 0.95	n = 2047, m = 0.95	n = 714, m = 0.95			
<i>Gubernatorial Primary 2010</i>			-0.093 (-16.2%)	-0.161 (-28.7%)	-0.077 (-13.7%)	
			(-0.076, -0.11)	(-0.144, -0.178)	(-0.066, -0.089)	
			n = 834, m = 0.95	n = 854, m = 0.95	n = 1895, m = 0.95	
<i>Gubernatorial General 2010</i>			-0.113 (-13.8%)	-0.166 (-20.2%)	-0.105 (-13%)	-0.128 (-15.6%)
			(-0.1, -0.125)	(-0.153, -0.179)	(-0.097, -0.114)	(-0.118, -0.139)
			n = 925, m = 0.95	n = 833, m = 0.95	n = 2074, m = 0.95	n = 1355, m = 0.95
Same Voting History - Three Abstains						
<i>Special Statewide 2009</i>	0.002 (0.7%)	-0.021 (-9.1%)	-0.036 (-16.5%)			
	(0.013, -0.01)	(-0.009, -0.034)	(-0.016, -0.056)			
	n = 1383, m = 0.95	n = 1215, m = 0.94	n = 424, m = 0.95			
<i>Gubernatorial Primary 2010</i>			-0.03 (-10.7%)	-0.075 (-25.2%)	-0.055 (-19.1%)	
			(-0.01, -0.051)	(-0.054, -0.095)	(-0.042, -0.069)	
			n = 486, m = 0.94	n = 504, m = 0.94	n = 1149, m = 0.95	
<i>Gubernatorial General 2010</i>			-0.108 (-18%)	-0.15 (-24.5%)	-0.113 (-19.1%)	-0.072 (-12.3%)
			(-0.088, -0.128)	(-0.128, -0.171)	(-0.098, -0.127)	(-0.055, -0.089)
			n = 595, m = 0.95	n = 504, m = 0.95	n = 1207, m = 0.94	n = 836, m = 0.94
Alone						
<i>Special Statewide 2009</i>	-0.03 (-4.8%)	-0.053 (-8.5%)	-0.11 (-18.2%)			
	(-0.026, -0.033)	(-0.049, -0.057)	(-0.104, -0.117)			
	n = 18656, m = 0.99	n = 16781, m = 0.99	n = 6094, m = 0.99			
<i>Gubernatorial Primary 2010</i>			-0.094 (-13.5%)	-0.16 (-22.8%)	-0.1 (-14.3%)	
			(-0.089, -0.1)	(-0.155, -0.166)	(-0.097, -0.104)	

Continued on next page

TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
			n = 6687, m = 0.99	n = 7003, m = 0.98	n = 16017, m = 0.99	
<i>Gubernatorial General 2010</i>			-0.098 (-11.4%) (-0.094, -0.102)	-0.141 (-16.5%) (-0.137, -0.145)	-0.105 (-12.3%) (-0.102, -0.108)	-0.097 (-11.3%) (-0.093, -0.1)
			n = 7621, m = 0.99	n = 6839, m = 0.99	n = 17055, m = 0.99	n = 11538, m = 0.99
Not Alone						
<i>Special Statewide 2009</i>	-0.016 (-3.5%) (-0.01, -0.022) n = 7494, m = 0.98	-0.04 (-9.1%) (-0.034, -0.047) n = 6703, m = 0.98	-0.068 (-15.5%) (-0.058, -0.078) n = 2436, m = 0.98			
<i>Gubernatorial Primary 2010</i>			-0.077 (-14.2%) (-0.068, -0.087) n = 2715, m = 0.98	-0.12 (-22%) (-0.111, -0.13) n = 2760, m = 0.98	-0.084 (-15.5%) (-0.077, -0.09) n = 6442, m = 0.98	
<i>Gubernatorial General 2010</i>			-0.076 (-9.8%) (-0.069, -0.084) n = 3158, m = 0.97	-0.136 (-17.5%) (-0.128, -0.144) n = 2674, m = 0.98	-0.096 (-12.4%) (-0.091, -0.101) n = 6765, m = 0.98	-0.078 (-10.1%) (-0.072, -0.084) n = 4685, m = 0.98
Rural Zip Code						
<i>Special Statewide 2009</i>	-0.033 (-5.3%) (-0.028, -0.038) n = 9159, m = 0.96	-0.06 (-9.6%) (-0.054, -0.065) n = 8296, m = 0.96	-0.115 (-18.7%) (-0.106, -0.123) n = 3003, m = 0.97			
<i>Gubernatorial Primary 2010</i>			-0.084 (-11.9%) (-0.076, -0.092) n = 3316, m = 0.97	-0.16 (-22.7%) (-0.152, -0.167) n = 3514, m = 0.97	-0.107 (-15.2%) (-0.102, -0.112) n = 7890, m = 0.96	
<i>Gubernatorial General 2010</i>			-0.091 (-10.6%) (-0.085, -0.097) n = 3743, m = 0.96	-0.139 (-16.1%) (-0.134, -0.145) n = 3339, m = 0.97	-0.111 (-12.9%) (-0.107, -0.115) n = 8457, m = 0.96	-0.094 (-11%) (-0.089, -0.099) n = 5720, m = 0.97
Urban Zip Code						
<i>Special Statewide 2009</i>	-0.025 (-4.6%) (-0.021, -0.029) n = 16085, m = 0.98	-0.043 (-7.9%) (-0.039, -0.047) n = 14352, m = 0.98	-0.089 (-16.8%) (-0.082, -0.096) n = 5254, m = 0.98			
<i>Gubernatorial Primary 2010</i>			-0.094 (-14.9%) (-0.088, -0.1) n = 5781, m = 0.98	-0.144 (-22.6%) (-0.138, -0.15) n = 5933, m = 0.98	-0.089 (-14.1%) (-0.085, -0.093) n = 13775, m = 0.98	

Continued on next page

TABLE 2: Aggregated widowhood effects with 95% confidence intervals, sample sizes, and match rates

	weeks -91 to 52	weeks -52 to -15	weeks -15 to 0	weeks 0 to 15	weeks 15 to 52	weeks 52 to 80
<i>Gubernatorial General 2010</i>			-0.093 (-11.4%) (-0.088, -0.098) n = 6644, m = 0.97	-0.143 (-17.4%) (-0.138, -0.148) n = 5856, m = 0.98	-0.098 (-12%) (-0.095, -0.102) n = 14541, m = 0.98	-0.088 (-10.8%) (-0.084, -0.092) n = 9960, m = 0.98
Per Capita Income Under 35000						
<i>Special Statewide 2009</i>	-0.025 (-4.5%) (-0.021, -0.029) n = 16945, m = 0.98	-0.05 (-8.9%) (-0.046, -0.054) n = 15242, m = 0.98	-0.103 (-18.6%) (-0.096, -0.11) n = 5554, m = 0.98			
<i>Gubernatorial Primary 2010</i>			-0.084 (-13.2%) (-0.078, -0.09) n = 6117, m = 0.98	-0.153 (-24.1%) (-0.147, -0.159) n = 6296, m = 0.98	-0.097 (-15.4%) (-0.093, -0.101) n = 14642, m = 0.98	
<i>Gubernatorial General 2010</i>			-0.09 (-11.1%) (-0.086, -0.095) n = 6968, m = 0.97	-0.143 (-17.4%) (-0.138, -0.148) n = 6171, m = 0.98	-0.106 (-13%) (-0.103, -0.109) n = 15467, m = 0.98	-0.097 (-11.9%) (-0.093, -0.1) n = 10511, m = 0.98
Per Capita Income 35000 or Over						
<i>Special Statewide 2009</i>	-0.032 (-5.4%) (-0.026, -0.037) n = 8346, m = 0.97	-0.05 (-8.4%) (-0.044, -0.056) n = 7390, m = 0.96	-0.093 (-16.1%) (-0.084, -0.103) n = 2706, m = 0.96			
<i>Gubernatorial Primary 2010</i>			-0.097 (-13.8%) (-0.089, -0.106) n = 2988, m = 0.97	-0.14 (-19.7%) (-0.132, -0.149) n = 3130, m = 0.96	-0.092 (-13%) (-0.087, -0.097) n = 7028, m = 0.96	
<i>Gubernatorial General 2010</i>			-0.093 (-10.7%) (-0.087, -0.099) n = 3452, m = 0.97	-0.135 (-15.6%) (-0.129, -0.141) n = 3024, m = 0.96	-0.095 (-11%) (-0.092, -0.099) n = 7516, m = 0.96	-0.077 (-8.9%) (-0.073, -0.082) n = 5169, m = 0.96

Data Notes

¹In 2003, respectively only two and three percent of women and men over the age of sixty-five lived with non-relatives, seventeen and seven percent lived with non-spouse relatives, and forty-one and seventy-one percent lived with their spouses US Census Bureau (2006). Many more women than men lived alone, forty to nineteen percent, due to greater rates of widowhood US Census Bureau (2006). We first accept these rates as given, and then we observe the incidence of same-sex couples with the same last name to infer the prevalence of non-spouses in our analysis.

²Not all of this data is complete, much like the Los Angeles County records used by Brady and McNulty 2011. For example, out of the over 17 million voters in the file, over 100,000 do not list a full date of birth (the majority of those who do, omit the year), around one-third do not include gender (partly because this is no longer included on voter registrations), and around 1.46 million voters were expunged between 2009 and 2010, in compliance with California voter record policy. The implications of the removal of voters from the registry are explained in the discussion section. Voters who experience long, debilitating illness are more likely to be absent from our analysis.

³The Social Security Death Master File cannot be fully relied upon to identify whether a voter is living. However, the California Registrar of Voters uses the Department of Public Health records to remove deceased voters from the voter registry. Comparing the rates of removal for voters identified by the Social Security Death Master File as deceased, we find that California counties remove eighty to ninety percent of deceased voters from the Voter Record prior to an election. Only Los Angeles County varies significantly from this. It has a thirty percent removal rate.

⁴It is relevant to note that the voters appearing on the more recent end (the left side of the figures) of the observation period are, on average, one year older than the voters on the earlier end (the right side). This is evident in the slightly lower base turnout rates. However, the turnout rates of the matched controls differ by only .25 percentage points. Also, there are around twelve percent more cases in the winter season (noticeable in the smaller variance for the winter season), and there are eight percent fewer cases in summer 2010 than in summer 2009. This discrepancy is likely due to both out-of-state changes of address among widow(er)s and the deaths of surviving spouses.

⁵We utilize two estimates of this unobserved recovery. The 2010-2011 Current Population Survey (CPS) US Census Bureau (2011*a*) estimates that 16% of American widow(er)s who move, move between states. This is higher than out-of-state movements from California, but we use it as a conservative estimate. We multiply 16% by the proportion of widows who re-register at new addresses before the anniversary of spousal death in our sample and multiply by 20% for re-registrations at new addresses after the anniversary (because out-of-state relocation might occur slightly later). We then multiply this by the turnout of controls (a widowhood effect of zero because re-registration is correlated with voting) and add this "unobserved recovery" estimate to the fitted values of the observed data. This first

estimate is the dotted line in Figure 4. The second estimate uses 16% before and after the anniversary and the case turnout (which takes an unobserved widowhood effect equal to the observed effect). The second estimate is the lower bound in our estimate of the recovery rate and the first estimate is the upper bound. We do not include this unobserved recovery in the overall estimates of the widowhood effect because of the likelihood of an unobserved effect from illnesses sufficiently debilitating and chronic to result in the de-registration of the dying and their caregivers before the observation period. This exclusion assumes the effect of long-term, debilitating illness is at least the size of the unobserved recovery (greater than one to two percent of the sample size).