

Supplementary appendices for Denise F. Lillvis and Robert J. McGrath. N.d. (forthcoming). “Directing Discipline: State Medical Board Responsiveness to State Legislatures.” *Journal of Health Politics, Policy and Law*.

## Appendix A - Descriptive Statistics

Table A1: Descriptive Statistics of Variables in Analyses

Dependent variable	N	Mean	SD	Min	Max
Total Disciplinary Actions per 1K Physicians	683	7.99	10.85	0	124.84
Independent variables	N	Mean	SD	Min	Max
State Legislative Ideology	683	-.03	.48	-.86	1.21
Unified Government	683	.41	.49	0	1
Democratic Governor	683	.38	.48	0	1
Citizen Ideology	683	49.24	14.69	8.45	95.97
Board Independence	683	.71	.45	0	1
Board Members per 1K Physicians	683	4.99	11.42	.19	119.04
Share of Outside Members on Board	683	.22	.10	0	.47
Reporting Requirements	683	7.65	3.82	0	15
State Govt. Spending as Share of GSP	683	.12	.02	.07	.31
Managed Care Share	683	.60	.28	0	1
Medical Malpractice Awards per 1K Physicians	683	15.06	7.81	0	57.60
PDMP Law in Effect	683	.31	.46	0	1
Mean Disciplinary Actions in Neighbor States	683	8.14	2.64	3.63	19.84
State Population (ln)	683	15.18	.99	13.1	17.39

Note: Summary statistics for sample included in model estimates found in table 1. All variables vary over time, but some vary less within unit than others: *Board Independence* varies for 19 state boards; *Share of Outside Members on Board* varies for 38 state boards; and *Reporting Requirements* for 55 state boards (out of 65 total state boards). The remaining variables vary more regularly within-state and within-board.

Table A2: Disciplinary Actions per 1K Physicians, by Board

Board	Mean (N)	SD
Alabama Board of Medical Examiners	5.62 (15)	1.96
Alaska State Medical Board	11.66 (15)	4.59
Arizona Medical Board	13.32 (15)	4.75
Arizona Board of Osteopathic Examiners in Medicine and Surgery	17.98 (15)	11.57
Arkansas State Medical Board	5.80 (15)	1.67
Medical Board of California	5.22 (15)	1.55
Osteopathic Medical Board of California	8.95 (15)	3.74
Colorado Medical Board	10.01 (15)	2.98
Connecticut Medical Examining Board Department of Public Health	4.67 (15)	1.50
Delaware Board of Medical Licensure and Discipline	2.37 (15)	1.55
Florida Board of Medicine	10.39 (15)	6.25
Florida Board of Osteopathic Medicine	9.84 (15)	5.84
Georgia Composite Medical Board	7.80 (15)	2.89
Hawaii Medical Board	3.44 (15)	1.45
Idaho Board of Medicine	4.99 (15)	1.60
Illinois Division of Professional Regulation	4.68 (15)	1.48
Medical Licensing Board of Indiana	5.29 (15)	2.28
Iowa Board of Medicine	9.62 (15)	3.48
Kansas State Board of Healing Arts	5.26 (15)	1.77
Kentucky Board of Medical Licensure	9.41 (15)	3.16
Louisiana State Board of Medical Examiners	5.72 (15)	1.87
Maine Board of Licensure in Medicine	5.97 (15)	2.55
Maine Board of Osteopathic Licensure	14.62 (15)	9.27
Maryland Board of Physicians	6.79 (15)	3.30
Massachusetts Board of Registration in Medicine	4.13 (15)	1.33
Michigan Board of Medicine	4.82 (15)	1.67
Michigan Board of Osteopathic Medicine and Surgery	7.19 (15)	1.87
Minnesota Board of Medical Practice	4.35 (15)	2.00
Mississippi State Board of Medical Licensure	7.11 (15)	4.52
Missouri Board of Registration for the Healing Arts	6.23 (15)	2.79
Montana Board of Medical Examiners	6.09 (15)	3.42
Nebraska Board of Medicine and Surgery	7.84 (15)	3.65
Nevada State Board of Medical Examiners	4.93 (15)	1.51
Nevada State Board of Osteopathic Medicine	3.64 (15)	3.03
New Hampshire Board of Medicine	5.12 (15)	2.50
New Jersey State Board of Medical Examiners	4.77 (15)	1.54
New Mexico Medical Board	6.27 (15)	2.48
New Mexico Board of Osteopathic Medical Examiners	3.97 (15)	6.09
New York State Office of Professional Medical Conduct	7.07 (15)	2.13
North Carolina Medical Board	6.27 (15)	2.11
North Dakota Board of Medical Examiners	10.73 (15)	3.98
State Medical Board of Ohio	8.03 (15)	1.88
Oklahoma Board of Medical Licensure and Supervision	9.961 (15)	2.84
Oklahoma State Board of Osteopathic Examiners	11.28 (15)	3.83
Oregon Medical Board	5.33 (15)	1.82
Pennsylvania State Board of Medicine	4.39 (15)	1.63
Pennsylvania State Board of Osteopathic Medicine	5.89 (15)	2.50
Rhode Island Board of Medical Licensure and Discipline	6.01 (15)	2.89
South Carolina Board of Medical Examiners	5.29 (14)	2.40
South Dakota Board of Medical and Osteopathic Examiners	4.92 (15)	3.03
Tennessee State Board of Medical Examiners	3.60 (15)	2.03
Tennessee Board of Osteopathic Examination	12.80 (15)	14.61
Texas Medical Board	7.32 (14)	2.00
Utah Physicians & Surgeons Licensing Board	4.18 (15)	1.67
Utah Osteopathic Physicians & Surgeons Licensing Board	58.10 (15)	49.52
Vermont Board of Medical Practice	9.01 (15)	3.76
Vermont Board of Osteopathic Physicians and Surgeons	30.74 (15)	19.78
Virginia Board of Medicine	5.09 (15)	1.28
Washington Medical Quality Assurance Commission	5.44 (15)	2.23
Washington Board of Osteopathic Medicine and Surgery	11.29 (15)	11.21
West Virginia Board of Medicine	10.92 (15)	4.11
West Virginia Board of Osteopathic Medicine	6.17 (15)	3.18
Wisconsin Medical Examining Board	6.21 (15)	.93
Wyoming Board of Medicine	12.07 (15)	5.48

## Appendix B: The Partisan Alternative

Table B1: Linear Models of Total Board Disciplinary Actions per 1,000 Physicians, 1993-2006

	(1) Unified Dem.	(2) Unified Rep.	(3) Dems in Leg.
Unified Government	-.940 (.945)	1.095 (.912)	-3.646 (3.055)
Democratic Governor	-1.212 (.808)		-1.053 (.801)
Democratic Governor × Unified Govt.	2.035 (1.520)		
Republican Governor		1.212 (.808)	
Republican Governor × Unified Govt.		-2.035 (1.520)	
Proportion Dems in Legislature			-1.901 (5.371)
Proportion Dems in Legislature × Unified Govt.			7.282 (5.866)
Citizen Ideology (higher scores more liberal)	-.082 (.051)	-.082 (.051)	-.075 (.052)
Board Independence	3.957*** (.998)	3.957*** (.998)	3.880*** (1.017)
Board Members per 1,000 Physicians	1.178*** (.061)	1.178*** (.061)	1.178*** (.061)
Share of Outside Members on Board	-5.711 (4.616)	-5.711 (4.616)	-6.837 (4.745)
Reporting Requirements	.037 (.117)	.037 (.117)	.033 (.125)
State Govt. Spending as Share of GSP	47.880* (29.036)	47.880* (29.036)	45.314 (29.552)
Managed Care Share	4.747*** (1.463)	4.747*** (1.463)	4.557*** (1.495)
Medical Malpractice Awards per 1,000 Physicians	-.089* (.046)	-.089* (.046)	-.096** (.047)
PDMP Law in Effect	-1.433* (.809)	-1.433* (.809)	-1.249 (.819)
Mean Disciplinary Actions in Neighbor States	.361*** (.111)	.361*** (.111)	.371*** (.113)
State Population (logged)	-15.478* (8.318)	-15.478* (8.318)	-14.543* (8.444)
Constant	229.085* (127.336)	227.873* (127.268)	216.159* (129.610)
Board FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	946	946	931
$R^2$	.704	.704	.704
$AIC$	5310.864	5310.864	5234.622
$BIC$	5734.701	5734.701	5656.910

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

Note: Dependent variable is the total number of disciplinary actions by a board per 1,000 in-state licensed and practicing physicians.

# Appendix C: Alternative Specifications (Random Effects Models)

Table C1: Linear Models of Total Board Disciplinary Actions per 1,000 Physicians, 1993-2006

	(1) All	(2) Unified Principals	(3) Non/Semi-Prof.	(4) Professional
State Legislative Ideology	1.137 (1.187)	-1.154 (1.388)	-1.780 (1.912)	-.884 (.910)
State Legislative Ideology × Unified Govt.		3.160* (1.728)	2.071 (2.621)	3.090*** (1.343)
Unified Government		.659 (.639)	.332 (.860)	.411 (.556)
Democratic Governor	-.132 (.667)	-1.169 (.861)	-.521 (1.105)	-3.130*** (.968)
Citizen Ideology (higher scores more liberal)	-.129*** (.047)	-.130*** (.048)	-.114* (.061)	-.139*** (.050)
Board Independence	2.646** (1.038)	2.337** (1.065)	2.695* (1.548)	1.116* (.677)
Board Members per 1,000 Physicians	.735*** (.051)	.737*** (.051)	.759*** (.059)	.713*** (.175)
Share of Outside Members on Board	-14.378** (5.778)	-14.315** (5.787)	-15.546* (8.331)	-9.103*** (3.188)
Reporting Requirements	.138 (.138)	.156 (.138)	.170 (.191)	.185** (.093)
State Govt. Spending as Share of GSP	23.403 (25.510)	18.629 (25.584)	27.704 (31.967)	-14.916 (17.995)
Managed Care Share	3.745** (1.786)	3.639** (1.790)	3.191 (2.303)	2.213* (1.192)
Medical Malpractice Awards per 1,000 Physicians	.100* (.053)	.096* (.054)	.116* (.068)	.034 (.027)
PDMP Law in Effect	-.709 (.903)	-.973 (.911)	-1.393 (1.221)	-1.713*** (.557)
Mean Disciplinary Actions in Neighbor States	.483*** (.118)	.508*** (.119)	.438*** (.147)	.621*** (.146)
State Population (logged)	2.460** (.996)	2.333** (.998)	2.573 (1.815)	.430 (.690)
Constant	-36.333** (16.841)	-33.152** (16.908)	-38.718 (29.584)	5.109 (12.859)
Year FE	Yes	Yes	Yes	Yes
Observations	683	683	522	161
$R^2$ overall	.399	.392	.406	.613
$R^2$ within	.412	.405	.429	.442
$R^2$ between	.389	.414	.417	.923
Hausman test Fixed vs. Random Effects ( $\chi^2$ )	121.93	120.76	109.65	37.89
Hausman test Fixed vs. Random Effects (p-value)	.0001	.0001	.0001	0.079

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

Note: Dependent variable is the total number of disciplinary actions by a board per 1,000 in-state licensed and practicing physicians. Columns 3 and 4 present estimates for sample split by legislative professionalism categories.