

eAppendix Table 1. Sample Characteristics Stratified by State Consent Policy Type^{a,b}

	Consent Policy Type			
	Overall	Opt Out	Opt In	Other
n	3624	1015	648	950
Report Regulatory Barriers to HIE***	467(12.9)	129(12.7)	131 (20.2)	125 (13.2)
Percent of Transfers Sent w/ eSCR, mean (sd)**	43.0(24.3)	45.0(25.9)	41.7(24.0)	41.2 (22.4)
EHR Adoption Level				
Less than Basic	779 (22.2)	190 (19.4)	128 (20.2)	199 (21.5)
Basic EHR	981 (27.9)	274 (28.0)	163 (25.7)	264 (28.5)
Comprehensive EHR	1756(49.9)	513 (52.5)	343 (54.1)	464 (50.1)
Ownership***				
Local Government	807 (22.3)	182 (17.9)	139 (21.5)	212 (22.3)
For Profit Hospital	720 (19.9)	140 (13.8)	116 (17.9)	244 (25.7)
Nonprofit Hospital	2097 (57.9)	693 (68.3)	393 (60.6)	494 (52.0)
EHR Vendor**				
Allscripts/Eclipsys	101 (2.8)	29 (2.9)	27 (4.2)	20 (2.1)
Cerner	799 (22.0)	244 (24.0)	129 (19.9)	200 (21.1)
Epic Systems	872 (24.1)	263 (25.9)	164 (25.3)	261 (27.5)
McKesson	211 (5.8)	48 (4.7)	28 (4.3)	43 (4.5)
Meditech	684 (18.9)	178 (17.5)	154 (23.8)	167 (17.6)
CPSI	154 (4.2)	41 (4.0)	9 (1.4)	42 (4.4)
Evident	117 (3.2)	36 (3.5)	20 (3.1)	36 (3.8)
Other	686 (18.9)	176 (17.3)	117 (18.1)	181 (19.1)
Hospital Uses Dominant EHR Vendor	1483 (42.3)	406 (41.3)	284 (44.9)	405 (43.5)
RHIO Participant***	2155 (60.9)	663 (67.1)	426 (66.9)	528 (56.7)
Specialty Hospital*	680 (18.8)	171 (16.8)	102 (15.7)	194 (20.4)
HIE Capabilities				
Find***	1859 (52.5)	545 (55.1)	383 (60.2)	466 (50.2)
Send*	2923 (80.7)	854 (84.1)	535 (82.6)	759 (79.9)
Receive	2424 (66.9)	706 (69.6)	442 (68.2)	617 (64.9)
Integrate	1831 (50.5)	523 (51.5)	326 (50.3)	451 (47.5)
All Four**	1154 (32.8)	349 (35.2)	240 (37.7)	269 (29.7)
Size**				
Small (<100 beds)	1834 (50.9)	529 (52.5)	292 (45.2)	482 (51.0)
Midsize (100-400 beds)	1384 (38.4)	385 (38.2)	268 (41.5)	369 (39.0)
Large (>400 beds)	382 (10.6)	93 (9.2)	86 (13.3)	94 (9.9)

Region***				
North Central	1158 (32.0)	499 (49.2)	138 (21.3)	109 (11.5)
Northeast	508 (14.0)	196 (19.3)	212 (32.7)	30 (3.2)
South	1389 (38.3)	208 (20.5)	298 (46.0)	437 (46.0)
West	569 (15.7)	112 (11.0)	0 (0.0)	374 (39.4)
Medical Home**	817 (28.7)	231 (27.3)	163 (32.5)	185 (22.9)
Health System Member	2360 (65.6)	659 (65.4)	439 (68.1)	622 (65.8)
Teaching Hospital	1164 (32.4)	332 (32.9)	239 (37.1)	304 (32.2)
Critical Access Hospital***	831 (23.1)	283 (28.1)	134 (20.8)	181 (19.2)
ACO Member***	1064 (36.2)	358 (42.3)	204 (40.4)	242 (30.0)
Bundled Payment Participant*	572 (19.6)	176 (20.8)	117 (23.3)	138 (17.2)
Medicare Share of Inpatient Days, mean (sd)*	49.8 (22.0)	51.3 (21.7)	49.3(21.1)	48.8 (22.3)
Medicaid Share of Inpatient Days, mean(sd)	19.5 (16.6)	19.0 (15.0)	21.0(17.3)	19.6 (17.2)
CBSA Type***				
Rural	680 (18.9)	220 (21.8)	106 (16.4)	138 (14.6)
Micro	541 (15.0)	173 (17.2)	86 (13.3)	127 (13.4)
Metro	2375 (66.0)	615 (61.0)	453 (70.2)	680 (72.0)
HHI Classification**				
Unconcentrated	2757 (76.7)	769 (76.3)	512 (79.4)	685 (72.5)
Moderately Concentrated	583 (16.2)	158 (15.7)	101 (15.7)	178 (18.8)
Highly Concentrated	256 (7.1)	81 (8.0)	32 (5.0)	82 (8.7)

^a The table above presents hospital characteristics with respect to health IT adoption level and demographics commonly associated with health IT-related outcomes. Numbers of hospitals are reported with percentages of the sample in parentheses, unless otherwise specified.

^b Significance Levels: *p<0.05, **p<0.01, ***p<0.001

eAppendix Table 2. Full Regression Results, Aim One: Relationship Between State HIE Consent Policy and Probability of Reporting Regulatory Barriers to HIE^a

Consent Policy	Reporting Regulatory Barriers to HIE			
	<i>n=2023, AIC=1696.1</i>			
	<i>AME [95% CI]^b</i>	<i>Std Error</i>	<i>p-value</i>	<i>OR [95% CI]^c</i>
<i>Consent Policy</i>				
Opt-Out (reference)	--	--	--	--
Opt-In*	0.078 [0.006, 0.151]	0.037	0.034	1.82 [1.11, 2.99]
Other	0.024 [-0.054, 0.103]	0.04	0.539	1.23 [0.65, 2.32]
<i>EHR Adoption Level</i>				
Less than Basic (reference)	--	--	--	--
Basic EHR	0.03 [-0.062, 0.122]	0.047	0.519	1.28 [0.63, 2.61]
Comprehensive EHR	0.052 [-0.035, 0.14]	0.045	0.242	1.58 [0.76, 3.27]
<i>EHR Vendor</i>				
Allscripts/Eclipsys (reference)	--	--	--	--
Cerner	0.07 [-0.117, 0.258]	0.096	0.462	1.72 [0.47, 6.37]
Epic Systems	0.128 [-0.109, 0.365]	0.121	0.29	2.58 [0.55, 12.12]
McKesson	0.022 [-0.171, 0.216]	0.099	0.822	1.2 [0.28, 5.18]
Meditech	0.021 [-0.127, 0.168]	0.075	0.785	1.19 [0.37, 3.8]
CPSI	0.013 [-0.113, 0.139]	0.064	0.84	1.11 [0.41, 3.03]
Evident	0.024 [-0.143, 0.191]	0.085	0.78	1.21 [0.35, 4.25]
Other	0.029 [-0.113, 0.171]	0.072	0.686	1.27 [0.43, 3.71]
Hospital Uses Dominant Vendor*	-0.051 [-0.095, -0.007]	0.022	0.022	0.64 [0.43, 0.95]
<i>Ownership</i>				
For Profit (reference)	--	--	--	--
Local Government	0.128 [-0.009, 0.266]	0.07	0.068	2.48 [1.1, 5.57]
Nonprofit Hospital***	0.129 [0.069, 0.189]	0.03	<0.001	3.5 [1.89, 6.49]
<i>Size</i>				
Small (<100 beds) (reference)	--	--	--	--
Midsized (100-400 beds)	0.023 [-0.011, 0.056]	0.017	0.19	1.21 [0.91, 1.61]
Large (>400 beds)	0.017 [-0.034, 0.067]	0.026	0.518	1.15 [0.77, 1.71]
RHIO Participant	-0.017 [-0.058, 0.025]	0.021	0.432	0.87 [0.61, 1.23]
Specialty Hospital	0.03 [-0.047, 0.106]	0.039	0.451	1.27 [0.71, 2.27]
Medical Home	0.012 [-0.05, 0.074]	0.031	0.705	1.11 [0.67, 1.84]
Health System Member	0.027 [-0.006, 0.059]	0.016	0.104	1.27 [0.94, 1.7]

Teaching Hospital*	-0.029 [-0.053, -0.004]	0.012	0.021	0.78 [0.63, 0.96]
Critical Access Hospital	0.026 [-0.038, 0.091]	0.033	0.424	1.24 [0.75, 2.05]
Bundled Payment Participant	-0.005 [-0.063, 0.053]	0.03	0.875	0.96 [0.58, 1.59]
ACO Member**	0.07 [0.019, 0.12]	0.026	0.007	1.76 [1.21, 2.57]
Medicare Share of Inpatient Days	0 [-0.001, 0.001]	0	0.653	1 [0.99, 1.01]
Medicaid Share of Inpatient Days	-0.001 [-0.002, 0.001]	0.001	0.452	1 [0.98, 1.01]
CBSA Type				
Rural (reference)	--	--	--	--
Micro	-0.035 [-0.091, 0.02]	0.028	0.213	0.72 [0.41, 1.25]
Metro	-0.054 [-0.114, 0.005]	0.03	0.074	0.64 [0.4, 1.03]
Region				
North Central (reference)	--	--	--	--
Northeast	0.03 [-0.055, 0.115]	0.043	0.486	1.28 [0.67, 2.42]
South	0.038 [-0.027, 0.103]	0.033	0.252	1.37 [0.82, 2.31]
West	-0.009 [-0.086, 0.067]	0.039	0.812	0.92 [0.47, 1.81]
HRR Market Concentration				
Unconcentrated (reference)	--	--	--	--
Moderately Concentrated	-0.007 [-0.054, 0.039]	0.024	0.754	0.94 [0.62, 1.41]
Highly Concentrated	0.015 [-0.051, 0.081]	0.034	0.652	1.13 [0.67, 1.91]

^a Significance Levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

^b Column shows average marginal effects estimates for the multivariate logistic regression model. Errors are clustered at the state level.

^c Column shows odds ratio estimates for the multivariate logistic regression model. Errors are clustered at the state level.

eAppendix Table 3. Full Regression Results, Aim One: Relationship Between State HIE Consent Policy (alternate reference group) and Probability of Reporting Regulatory Barriers to HIE^{a,b}

Consent Policy	Reporting Regulatory Barriers to HIE		
	<i>n=2,023, AIC=1696.1</i>		
	<i>AME [95% CI]</i>	<i>Std Error</i>	<i>p-value</i>
<i>Consent Policy^c</i>			
Opt-Out	-0.024 [-0.096, 0.049]	0.037	0.524
Opt-In	0.049 [-0.031, 0.13]	0.041	0.226
Other (reference)	--	--	--
EHR Adoption Level			
Less than Basic (reference)	--	--	--
Basic EHR	0.03 [-0.062, 0.122]	0.047	0.519
Comprehensive EHR	0.052 [-0.035, 0.14]	0.045	0.242
Hospital Uses Dominant EHR Vendor*	-0.051 [-0.095, -0.007]	0.022	0.022
RHIO Participant	-0.017 [-0.058, 0.025]	0.021	0.432
EHR Vendor			
Allscripts/Eclipsys (reference)	--	--	--
Cerner	0.07 [-0.117, 0.258]	0.096	0.462
Epic Systems	0.128 [-0.109, 0.365]	0.121	0.29
McKesson	0.022 [-0.171, 0.216]	0.099	0.822
Meditech	0.021 [-0.127, 0.168]	0.075	0.785
CPSI	0.013 [-0.113, 0.139]	0.064	0.84
Evident	0.024 [-0.143, 0.191]	0.085	0.78
Other	0.029 [-0.113, 0.171]	0.072	0.686
Ownership			
For Profit Hospital (reference)	--	--	--
Local Government	0.128 [-0.009, 0.266]	0.07	0.068
Nonprofit Hospital***	0.129 [0.069, 0.189]	0.03	<0.001
Size			
Small (<100 beds) (reference)	--	--	--
Midsize (100-400 beds)	0.023 [-0.011, 0.056]	0.017	0.19
Large (>400 beds)	0.017 [-0.034, 0.067]	0.026	0.518
Specialty Hospital	0.03 [-0.047, 0.106]	0.039	0.451
Medical Home	0.012 [-0.05, 0.074]	0.031	0.705
Health System Member	0.027 [-0.006, 0.059]	0.016	0.104
Teaching Hospital	-0.029 [-0.053, -0.004]	0.012	0.021

Critical Access Hospital	0.026 [-0.038, 0.091]	0.033	0.424
Bundled Payment Participant	-0.005 [-0.063, 0.053]	0.03	0.875
ACO Member**	0.07 [0.019, 0.12]	0.026	0.007
Medicare Share of Inpatient Days	0 [-0.001, 0.001]	0	0.653
Medicaid Share of Inpatient Days	-0.001 [-0.002, 0.001]	0.001	0.452
CBSA Type			
Rural (reference)	--	--	--
Micro	-0.035 [-0.091, 0.02]	0.028	0.213
Metro	-0.054 [-0.114, 0.005]	0.03	0.074
Region			
North Central (reference)	--	--	--
Northeast	0.03 [-0.055, 0.115]	0.043	0.486
South	0.038 [-0.027, 0.103]	0.033	0.252
West	-0.009 [-0.086, 0.067]	0.039	0.812
HRR Market Concentration			
Unconcentrated (reference)	--	--	--
Moderately Concentrated	-0.007 [-0.054, 0.039]	0.024	0.754
Highly Concentrated	0.015 [-0.051, 0.081]	0.034	0.652

^a Table shows average marginal effects estimates for the multivariate logistic regression model. Errors are clustered at the state level.

^b Significance Levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

^c Model reports results from alternate specification of the primary independent variable: state consent policy. In this model, the reference category is “other” rather than “opt-out.”

eAppendix Table 4. Full Regression Results, Aim One Subgroup Analysis: Relationship Between State HIE Consent Policy Type and Probability of Reporting Regulatory Barriers to HIE, MU2-Attesting Hospitals Only^{a,b}

Consent Policy	<i>MU2-Attesting Hospitals Only^c</i>		
	Reporting Regulatory Barriers to HIE		
	<i>n=1336, AIC=1219.95</i>		
	<i>AME [95% CI]</i>	<i>Std Error</i>	<i>p-value</i>
<i>Consent Policy</i>			
Opt-Out (reference)	--	--	--
Opt-In	0.08 [-0.024, 0.183]	0.053	0.131
Other	0.025 [-0.093, 0.143]	0.06	0.677
EHR Adoption Level			
Less than Basic (reference)	--	--	--
Basic EHR	-0.021 [-0.138, 0.096]	0.06	0.726
Comprehensive EHR	0.006 [-0.114, 0.125]	0.061	0.924
EHR Vendor			
Allscripts/Eclipsys (reference)	--	--	--
Cerner	0.127 [-0.015, 0.27]	0.073	0.08
Epic Systems*	0.223 [0.031, 0.416]	0.098	0.023
McKesson	0.057 [-0.139, 0.254]	0.1	0.567
Meditech	0.088 [-0.063, 0.239]	0.077	0.255
CPSI	0.07 [-0.132, 0.271]	0.103	0.499
Evident	0.056 [-0.117, 0.228]	0.088	0.526
Other	0.14 [-0.055, 0.336]	0.1	0.159
Hospital Uses Dominant Vendor*	-0.068 [-0.127, -0.01]	0.03	0.022
Ownership			
For Profit (reference)	--	--	--
Local Government	0.207 [-0.014, 0.428]	0.113	0.066
Nonprofit Hospital***	0.179 [0.087, 0.271]	0.047	<0.001
Size			
Small (<100 beds) (reference)	--	--	--
Midsize (100-400 beds)	0.028 [-0.027, 0.084]	0.028	0.32
Large (>400 beds)	0.022 [-0.073, 0.117]	0.049	0.651
RHIO Participant*	-0.046 [-0.091, -0.001]	0.023	0.047
Specialty Hospital	0.096 [-0.174, 0.366]	0.138	0.485
Medical Home	0.022 [-0.046, 0.09]	0.035	0.527
Health System Member	0.043 [-0.006, 0.092]	0.025	0.084

Teaching Hospital	-0.043 [-0.089, 0.004]	0.024	0.071
Critical Access Hospital	-0.017 [-0.087, 0.053]	0.036	0.636
Bundled Payment Participant	-0.006 [-0.083, 0.07]	0.039	0.869
ACO Member	0.056 [-0.006, 0.119]	0.032	0.076
Medicare Share of Inpatient Days	0 [-0.002, 0.002]	0.001	0.773
Medicaid Share of Inpatient Days	0 [-0.002, 0.002]	0.001	0.866
CBSA Type			
Rural (reference)	--	--	--
Micro*	-0.062 [-0.119, -0.004]	0.029	0.037
Metro	-0.088 [-0.176, 0.001]	0.045	0.052
Region			
North Central (reference)	--	--	--
Northeast	0.017 [-0.094, 0.128]	0.057	0.764
South	0.046 [-0.043, 0.136]	0.046	0.311
West	-0.037 [-0.144, 0.07]	0.054	0.496
HRR Market Concentration			
Unconcentrated (reference)	--	--	--
Moderately Concentrated	-0.016 [-0.081, 0.049]	0.033	0.632
Highly Concentrated	0.058 [-0.024, 0.139]	0.042	0.165

^a Table shows average marginal effects estimates for the multivariate logistic regression model. Errors are clustered at the state level.

^b Significance Levels: *p<0.05, **p<0.01, ***p<0.001

^c Model includes only hospitals that attested to MU Stage 2 (i.e. had available data on the level of HIE usage).

eAppendix Table 5. Full Regression Results, Aim One Subgroup Analysis: Relationship Between State HIE Consent Policy Type and Probability of Reporting Regulatory Barriers to HIE, Non-MU2 Hospitals Only^{a,b}

Consent Policy	<i>Non-MU Attesting Hospitals^c</i>		
	Reporting Regulatory Barriers to HIE		
	<i>n=687, AIC=501.36</i>		
	<i>AME [95% CI]</i>	<i>Std Error</i>	<i>p-value</i>
<i>Consent Policy</i>			
Opt-Out (reference)	--	--	--
Opt-In*	0.077 [0.013, 0.142]	0.033	0.019
Other*	0.047 [0.004, 0.091]	0.022	0.034
EHR Adoption Level			
Less than Basic (reference)	--	--	--
Basic EHR	0.038 [-0.058, 0.134]	0.049	0.436
Comprehensive EHR	0.063 [-0.021, 0.147]	0.043	0.142
EHR Vendor			
Allscripts/Eclipsys (reference)	--	--	--
Cerner	-0.009 [-0.179, 0.161]	0.087	0.914
Epic Systems*	-0.01 [-0.187, 0.166]	0.09	0.907
McKesson	-0.029 [-0.195, 0.138]	0.085	0.736
Meditech	-0.062 [-0.155, 0.031]	0.047	0.191
CPSI	-0.035 [-0.178, 0.108]	0.073	0.633
Evident	-0.021 [-0.155, 0.112]	0.068	0.756
Other	-0.049 [-0.201, 0.104]	0.078	0.531
Hospital Uses Dominant Vendor*	-0.026 [-0.072, 0.02]	0.023	0.275
Ownership			
For Profit (reference)	--	--	--
Local Government	0.026 [-0.088, 0.139]	0.058	0.659
Nonprofit Hospital***	0.052 [-0.024, 0.128]	0.039	0.179
Size			
Small (<100 beds) (reference)	--	--	--
Midsize (100-400 beds)	0.003 [-0.047, 0.053]	0.026	0.918
Large (>400 beds)	-0.009 [-0.09, 0.071]	0.041	0.819
RHIO Participant	0.017 [-0.048, 0.083]	0.033	0.603
Specialty Hospital	0.066 [-0.004, 0.137]	0.036	0.065
Medical Home	-0.023 [-0.065, 0.019]	0.021	0.284
Health System Member	0 [-0.052, 0.051]	0.026	0.987

Teaching Hospital	0.003 [-0.041, 0.047]	0.022	0.899
Critical Access Hospital*	0.124 [0.007, 0.241]	0.06	0.038
Bundled Payment Participant	-0.002 [-0.054, 0.051]	0.027	0.954
ACO Member**	0.101 [0.041, 0.162]	0.031	0.001
Medicare Share of Inpatient Days	0 [-0.001, 0.001]	0.001	0.551
Medicaid Share of Inpatient Days	-0.001 [-0.003, 0]	0.001	0.077
CBSA Type			
Rural (reference)	--	--	--
Micro	0.014 [-0.071, 0.098]	0.043	0.748
Metro	-0.028 [-0.117, 0.061]	0.045	0.536
Region			
North Central (reference)	--	--	--
Northeast	0.065 [-0.028, 0.158]	0.047	0.169
South	0.034 [-0.018, 0.086]	0.027	0.203
West	0.057 [-0.014, 0.129]	0.037	0.118
HRR Market Concentration			
Unconcentrated (reference)	--	--	--
Moderately Concentrated	0.018 [-0.047, 0.083]	0.033	0.583
Highly Concentrated	-0.04 [-0.115, 0.036]	0.039	0.302

^a Table shows average marginal effects estimates for the multivariate logistic regression model. Errors are clustered at the state level.

^b Significance Levels: *p<0.05, **p<0.01, ***p<0.001

^c Model includes only hospitals that did not attest to MU Stage 2 (i.e. did not have data on the level of HIE usage).

eAppendix Table 6. Full Regression Results, Aim One Sensitivity Analysis: Relationship Between State HIE Consent Policy and Probability of Reporting Regulatory Barriers to HIE, Adjusting for Hospital HIE Capabilities^{a,c}

Consent Policy	Reporting Regulatory Barriers to HIE		
	<i>n=1952, AIC=1618.7</i>		
	<i>AME [95% CI]</i>	<i>Std Error</i>	<i>p-value</i>
<i>Consent Policy</i>			
Opt-Out (reference)	--	--	--
Opt-In*	0.074 [0.004, 0.143]	0.035	0.037
Other	0.036 [-0.04, 0.111]	0.039	0.355
<i>EHR Adoption Level</i>			
Less than Basic (reference)	--	--	--
Basic EHR	0.032 [-0.068, 0.132]	0.051	0.529
Comprehensive EHR	0.053 [-0.046, 0.153]	0.051	0.292
<i>HIE Capabilities^b</i>			
Find	0.041 [-0.016, 0.099]	0.029	0.159
Send	0.006 [-0.071, 0.083]	0.039	0.874
Receive**	-0.092 [-0.153, -0.031]	0.031	0.003
Integrate	-0.069 [-0.162, 0.024]	0.047	0.145
All Four	0.122 [-0.001, 0.245]	0.063	0.052
RHIO Participant	-0.027 [-0.068, 0.015]	0.021	0.206
<i>EHR Vendor</i>			
Allscripts/Eclipsys (reference)	--	--	--
Cerner	0.066 [-0.117, 0.25]	0.094	0.48
Epic Systems	0.108 [-0.112, 0.329]	0.112	0.336
McKesson	0.04 [-0.164, 0.243]	0.104	0.702
Meditech	0.018 [-0.124, 0.16]	0.072	0.803
CPSI	0.016 [-0.11, 0.143]	0.065	0.8
Evident	0.042 [-0.12, 0.204]	0.083	0.612
Other	0.013 [-0.131, 0.158]	0.074	0.857
Hospital Uses Dominant EHR Vendor*	-0.055 [-0.1, -0.01]	0.023	0.016
<i>Ownership</i>			
For Profit Hospital (reference)	--	--	--
Local Government	0.125 [-0.006, 0.256]	0.067	0.061
Nonprofit Hospital***	0.126 [0.074, 0.178]	0.027	<0.001
<i>Size</i>			
Small (<100 beds) (reference)	--	--	--

Midsized (100-400 beds)	0.016 [-0.015, 0.047]	0.016	0.307
Large (>400 beds)	0.011 [-0.039, 0.062]	0.026	0.66
Specialty Hospital	0.022 [-0.051, 0.095]	0.037	0.553
Medical Home	0.008 [-0.05, 0.066]	0.03	0.792
Health System Member	0.031 [-0.003, 0.064]	0.017	0.076
Teaching Hospital*	-0.024 [-0.048, 0]	0.012	0.047
Critical Access Hospital	0.018 [-0.048, 0.083]	0.033	0.592
Bundled Payment Participant	-0.008 [-0.064, 0.049]	0.029	0.792
ACO Member**	0.071 [0.023, 0.12]	0.025	0.004
Medicare Share of Inpatient Days	0 [-0.001, 0.001]	0	0.689
Medicaid Share of Inpatient Days	0 [-0.002, 0.001]	0.001	0.495
CBSA Type			
Rural (reference)	--	--	--
Micro	-0.031 [-0.083, 0.022]	0.027	0.252
Metro	-0.059 [-0.121, 0.003]	0.032	0.063
Region			
North Central (reference)	--	--	--
Northeast	0.015 [-0.058, 0.089]	0.037	0.678
South	0.029 [-0.03, 0.089]	0.03	0.335
West	-0.014 [-0.084, 0.056]	0.036	0.697
HRR Market Concentration			
Unconcentrated (reference)	--	--	--
Moderately Concentrated	-0.008 [-0.052, 0.036]	0.023	0.728
Highly Concentrated	0.013 [-0.052, 0.079]	0.034	0.688

^a Table shows average marginal effects estimates for the multivariate logistic regression model. Errors are clustered at the state level.

^b Hospital HIE capabilities are potential collider variables in the aim one analysis.

^c Significance Levels: *p<0.05, **p<0.01, ***p<0.001

eAppendix Table 7. Full Regression Results, Aim Two: Relationship Between State HIE Consent Policy Type and Level of HIE Usage^{a,b}

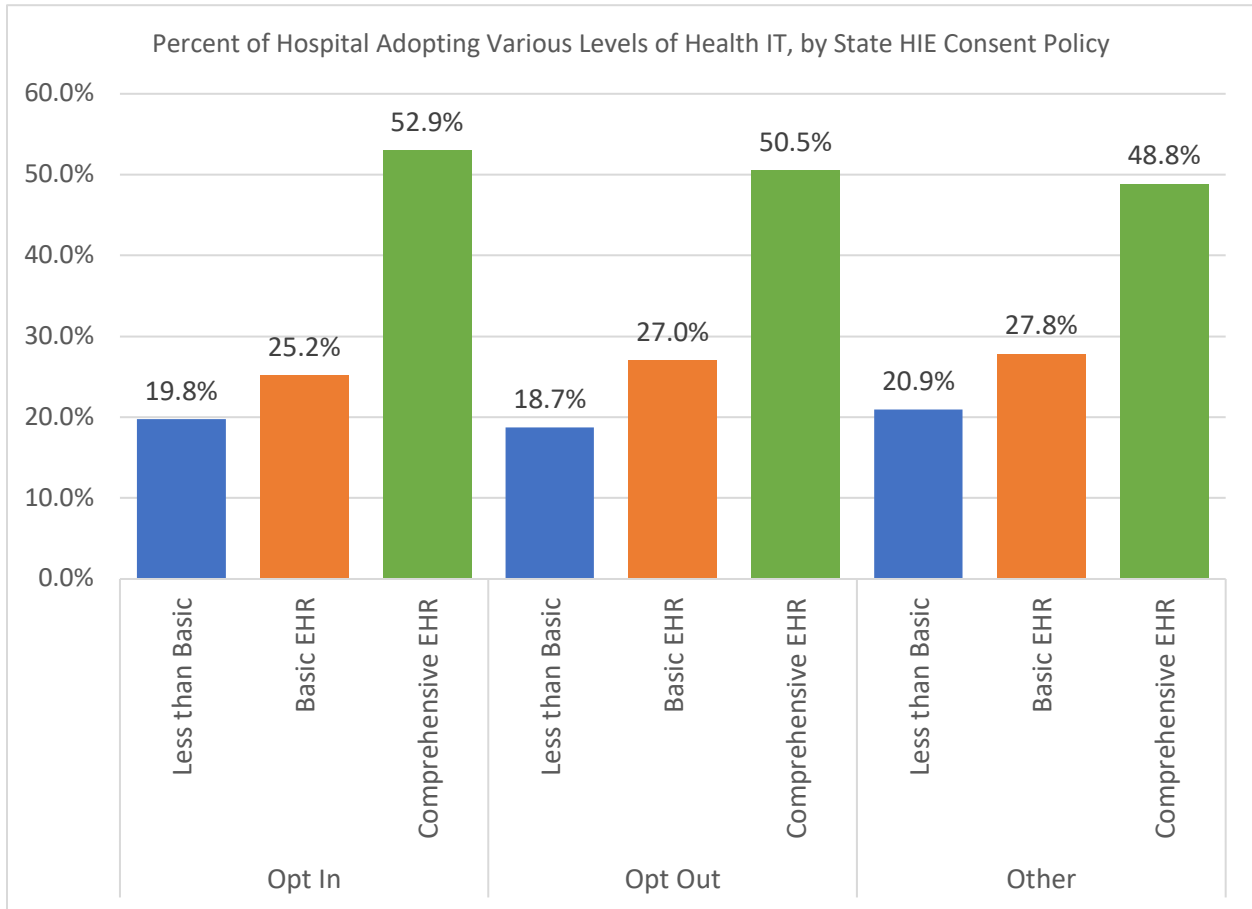
Consent Policy	HIE Usage Level (% eSCR)		
	<i>n=1127, Adj R-sq=0.0676</i>		
	<i>Beta [95% CI]</i>	<i>Std Error</i>	<i>p-value</i>
<i>Consent Policy</i>			
Opt-Out (reference)	--	--	--
Opt-In	0.56 [-3.1, 4.23]	1.87	0.763
Other*	-3.93 [-7.77, -0.1]	1.96	0.045
<i>EHR Adoption Level</i>			
Less than Basic (reference)	--	--	--
Basic EHR	-0.34 [-5.58, 4.9]	2.67	0.898
Comprehensive EHR	-0.91 [-6.11, 4.29]	2.65	0.731
<i>Meaningful Use Payment Year</i>			
Year 3 (reference)	--	--	--
Year 4*	7.39 [0.64, 14.14]	3.44	0.032
Year 5***	12.93 [6.24, 19.63]	3.42	0
Year 6**	10.76 [3.76, 17.75]	3.57	0.003
RHIO Participant	0.88 [-2.34, 4.09]	1.64	0.593
<i>EHR Vendor</i>			
Allscripts/Eclipsys (reference)	--	--	--
Cerner	-2.14 [-10, 5.72]	4.01	0.593
Epic Systems	2.08 [-5.93, 10.09]	4.09	0.611
McKesson	-6.36 [-15.57, 2.84]	4.7	0.176
Meditech	-4.33 [-12.25, 3.58]	4.04	0.283
CPSI	-4.53 [-16.87, 7.82]	6.3	0.472
Evident	-4.66 [-16.94, 7.61]	6.26	0.457
Other	-7.4 [-17, 2.2]	4.9	0.131
Uses Dominant EHR Vendor**	4.21 [1.08, 7.33]	1.6	0.009
<i>Ownership</i>			
Federal Government (reference)	--	--	--
Local Government	4.19 [-1.92, 10.3]	3.12	0.179
Nonprofit Hospital	1.27 [-3.92, 6.45]	2.64	0.632
<i>Size</i>			
Small (<100 beds) (reference)	--	--	--
Midsize (100-400 beds)	-3.21 [-7.26, 0.85]	2.07	0.121
Large (>400 beds)**	-8.96 [-14.63, -3.28]	2.89	0.002
Specialty Hospital	4.61 [-5.81, 15.03]	5.32	0.386

Medical Home	1.89 [-1.34, 5.13]	1.65	0.252
Health System Member	2.39 [-1.02, 5.8]	1.74	0.17
Teaching Hospital*	3.57 [0.19, 6.96]	1.73	0.039
Critical Access Hospital*	5.63 [0.55, 10.71]	2.59	0.03
Bundled Payment Participant	-1.16 [-4.63, 2.3]	1.77	0.511
ACO Member	0.61 [-2.43, 3.64]	1.55	0.696
Medicare Share of Inpatient Days	-0.07 [-0.19, 0.05]	0.06	0.26
Medicaid Share of Inpatient Days	-0.11 [-0.25, 0.03]	0.07	0.121
CBSA Type			
Rural (reference)	--	--	--
Micro	-0.49 [-6.33, 5.35]	2.98	0.869
Metro	-2.44 [-8.26, 3.39]	2.97	0.412
Region			
North Central (reference)	--	--	--
Northeast*	-5.44 [-9.79, -1.08]	2.22	0.015
South	-0.87 [-4.75, 3]	1.98	0.66
West	2.1 [-2.99, 7.2]	2.6	0.419
HRR Market Concentration			
Unconcentrated (reference)	--	--	--
Moderately Concentrated	2.65 [-1.05, 6.35]	1.89	0.161
Highly Concentrated	3.11 [-2.09, 8.3]	2.65	0.242
Intercept***	37.45 [21.65, 53.26]	8.06	<0.001

^a Table shows effect estimates for the multivariate linear regression model. Errors are clustered at the state level.

^b Significance Levels: *p<0.05, **p<0.01, ***p<0.001

eAppendix Figure. Hospital EHR Adoption Rates, Stratified by State Consent Policy



State Consent Policy	Hospital EHR Adoption	Proportion
Opt Out	Less than Basic	0.18719212
Opt Out	Basic EHR	0.26995074
Opt Out	Comprehensive EHR	0.50541872
OptIn	Less than Basic	0.19753086
OptIn	Basic EHR	0.25154321
OptIn	Comprehensive EHR	0.52932099
Other	Less than Basic	0.20947368
Other	Basic EHR	0.27789474
Other	Comprehensive EHR	0.48842105