Online Appendix:

DEFENSIVE MEDICINE: EVIDENCE FROM MILITARY IMMUNITY

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Diagnostic Procedures

Below, we set forth the various diagnostic tests the incidence of any of which we code for in Table 5, by the indicated diagnostic category. Largely, we endeavored to focus on the most common, non-invasive diagnostic procedures relevant for the clinical encounter (beyond simple physician observation of the patient), with the relevant tests identified based on a combination of observing frequency counts within the MDR database and, more importantly, a review of the relevant medical literature. Most of the procedures indicated are either of the radiological imaging or endoscopic varieties.

Cardiac / circulatory: electrocardiogram, stress test, echocardiogram, positron emission tomography (PET) scan, Holter monitor, electrophysiology study, cardiac catheterization,[1] coronary (and other) angiogram, magnetic resonance imaging (MRI) of the heart, cardiac CT scan

Respiratory: bronchoscopy, chest fluoroscopy, chest ultrasound, chest x-ray, and CT scan of the chest.

Gastroenterology: lower gastrointestinal series / barium enema, abdominal angiogram, abdominal ultrasound, abdominal x-ray, colonoscopy, CT scan of the abdomen (including CT enterography), magnestic resonance imaging of the abdomen (including MR enterography), esophagogastroduodenoscopy, sigmoidoscopy, upper gastrointestinal series, endoscopy of small intestine, rigid proctrosigmoidoscopy, esophagoscopy, endoscopy and other imaging of biliary tract and pancreas

Orthopedics: x-ray, CT scan, magnetic resonance imaging, ultrasound (in each case of the head, neck, bones, spine, and joints)

Endocrine, nutritional and metabolic: any gastrointestinal test (see above), in addition to needle biopsy of thyroid gland and parathyroid glands

Neurological: spinal tap, electroencephalogram, electroencephalographic Monitoring, neurological function tests, electromyography, electronystagmogram, x-ray (e.g., x-ray of spine, head, face and neck), diagnostic ultrasound of the head and neck, thermography, magnetic resonance imaging (eg, of brain and brain Stem), polysomnogram

[1] The results are robust to dropping cardiac catheterization, being one of the more invasive diagnostic tools on this list.

Mental health: any neurological test, in addition to psychological interviewing and examination.[2]

Labor and Delivery. Importantly, we note that we do not include the labor and delivery admissions in the diagnostic analysis. To flag diagnostic tests within the MDR, we need to explore both ICD-9 and CPT procedure codes across the various MDR files. The prominent diagnostic tool used in deliveries is fetal monitoring; however, perhaps due now to the common nature of this tool, fetal monitoring is built into the CPT codes indicating the delivery itself, leaving it difficult to separately identify the use of fetal monitoring within our data. Diagnostic ultrasounds are sometimes performed during the time of delivery; though the incidence is far too low to warrant using ultrasounds as a proxy for childbirth diagnostics.

Military hospitals closed during sample[3]

Scott Air Force Base, 375th Medical Group, IL

Naval Hospital Great Lakes, IL

MacDill Air Force Base, 6th Medical Group, FL

Lackland Airforce Base, Wilford Hall Medical Center, San Antonio, TX

Naval Hospital Cherry Point, NC

U.S. Air Force Academy, 10th Medical Group, CO

Fort Eustace Medical Facility, VA

Walter Reed Army Medical Center, DC[4]

Andrews Air Force Base, 89th Medical Group, MD

Charleston Naval Hospital, SC

Sheppard Air Force Base Hospital, TX

[2] The mental health results are robust to excluding the psychological examinations and just focusing on the largely radiological-based testing representing the neurological tests.
[3] The results in the paper are robust to the one-by-one exclusion of each of the indicated bases. In most instances, the Military Health System retained a clinic after the closing of the indicated inpatient facility.
[4] Facilities at the WRAMC were incorporated into the Walter Reed Military Medical Center, Bethesda, MD, seven miles from the original WRAMC site. The Walter Reed Military Medical Center is the former site of the National Naval Medical Center (the two hospitals were merged into the new Military Medical Center).

Luke Air Force Base Hospital, AZ

Lyster Army Community Hospital, Ft. Rucker, AL

Ehrling Bergquist Hospital, Offutt Air Force Base, NE

Shaw Air Force Base Hospital, SC[5]

[5] The Ft. Rucker, Luke Air Force Base, Offutt Air Force Base, and Shaw Air Force Base events were each hospital closings (and conversions into clinics) that did not actually result from the BRAC process (to our understanding). The Ft. Rucker closure was the result of a decision by the Army Surgeon General.

TABLE A1

Summary Statistics

	(1)
Utilization Metrics	
Relative Weighted Product	0.77
	(1.08)
Bed Days	3.97
	(7.95)
Number of Procedures	1.79
	(1.72)
Incidence of Any Procedure	0.77
	(0.42)
Health Care Quality Metrics	
90-Day Mortality (per 100 people)	0.47
	(6.81)
1-Year Mortality (per 100 people)	0.84
	(9.15)
30-Day Unplanned Readmission (per 100 people)	4.01
	(19.62)
Any Patient Safety Incident (per 100 people)	1.54
	(12.005)
N	2,452,882

Source: 2003-2013 Military Health System Data Repository.

TABLE A2

Relationship between Base Closure and Relative Weighted Product (Logged): Binary Treatment of Base Closure

	(1)	(2)	(3)	(4)
Active	-0.019*	-0.019***	-0.002	0.006***
	(0.010)	(0.006)	(0.002)	(0.002)
				(0.004)
Post-Closing	0.012	-0.009	-0.007*	-0.012***
	(0.008)	(0.005)	(0.004)	(0.003)
Active * Post-Closing	**0.029***	**0.036*****	**0.039*****	**0.034*****
	(0.015)	**(0.007)**	**(0.007)**	**(0.006)**
N	201769	201769	1355848	1355848
Sample	Zip Codes Affected by Base Closure	Zip Codes Affected by Base Closure	All Zip Codes (Originally Within 40 Miles of a Base)	All Zip Codes (Originally Within 40 Miles of a Base)
Zip-code Fixed Effects?	NO	YES	YES	YES
Hospital Fixed Effects?	NO	NO	NO	YES

Notes: robust standard errors corrected for within-catchment-area correlation in the error term are reported in parentheses (based on original catchment area designations). Post-Closing equals 0 for all zip codes unaffected by a base closure (that is, all zip codes whose closest-MTF measure was not altered by a base closure) and 0 for years prior to the closure for those zip codes affected by a base closure. Post-Closing equals 1 for years after closure for those zip codes affected by a base closure. All regressions include year fixed effects, primary diagnosis code fixed effects and controls for patient age (dummies), sex, Charlson comorbidity and paygrade (dummies). *** Significant at the 1 percent level; ** Significant at the 5 percent level; * Significant at the 10 percent level.

Notes regarding alternative instrumental variables strategy. As discussed in footnote 18 of the text, we also estimate instrumental variables (IV) specifications analogous to that estimated in Column 6-8 of Table 3 of the paper but that simply instrument the ON-BASE and ON-BASE X ACTIVE indicator variables with indicator variables for the incidence of a hospital closing and for the interaction of this closing with the ACTIVE indicator (while focusing on regions initially within 40 miles of a base hospital). The primary distance-based IV specification employed in Table 3 of the text differs slightly in spirit from a model that relies on a binary hospital-closing indicator in that it offers a natural way to capture the difference in kind between the following two hypothetical closings: one MTF closing that leaves the next-closest alternative MTF at only 15 miles away versus another MTF closing that leaves the next-closest alternative MTF greater than 100 miles away. The latter type of closing would be expected to more strongly drive the affected population to use civilian facilities. In Table A8, we present results from this alternative IV approach based on binary closing indicators. As demonstrated, the results presented in Table 3 of the text are not sensitive to the use of this alternative IV approach instead, though the magnitude of the defensive medicine findings is slightly larger in the binary case.

As discussed in more detail in the next note in this Online Appendix, we present the corresponding first stage results from this alternative IV approach in Table A3_3.

First stage table notes. We begin in Table A3_1 by simply showing a distance gradient in MTF utilization, separately for active duty and non-active duty (using specifications that control for a range of covariates).

In Table A3_2, we then demonstrate the two first stage regressions implicit within the two-stage least squares regression estimated in Column 6 of Table 3 (doing so with and without zip-code fixed effects, where such effects force us to focus only on variation in distances to closest MTFs induced by base-hospital closures). The instruments associated with this two-stages least squares approach are a series of dummies representing distance bins for distances from patient residence to the closest base hospital, along with the interaction between such dummies and an indicator for active-duty patient status. Note, since the full specification estimated

in Column 6 of Table 3 contains two endogenous regressors—ON_BASE and ACTIVE_DUTY X ON_BASE—and since we need instruments for both such regressors, it is necessary to show two separate implicit first stages—i.e., one for each regressor. All of the instruments are represented in each implicit first stage.

Interpreting the coefficients in these implicit first stage regressions is difficult given both the interactions involved in the instruments and in the endogenous regressors. Given these interpretation difficulties, in Table A3_3, we show first stage results for a simpler IV framework (with full IV results shown in Table A8 below) in which we focus on zip-codes initially within 40 miles of a base hospital and instrument ON_BASE and ACTIVE_DUTY X ON_BASE with a post-base-hospital-closing indicator. To make this first stage interpretation even easier, we show this alternative first stage result separately for active duty and non-active duty patients. In each case, for an average patient initially living within 40 miles of a base hospital, a base hospital closing leads to a 23% reduction in the likelihood that they will receive inpatient care at any MTF.

TABLE A3_1

First Stage Analysis: Relationship between Absolute Distance Bins and Likelihood of Receiving Care at MTF, Separately for Active and Non-Active Duty

	(1)	*(2)*
Omitted: Absolute Distance < 10 Miles		
Absolute Distance 10-20 miles	0.003	-0.061***
	(0.016)	(0.017)
Absolute Distance 20-30 miles	-0.134***	-0.326***
	(0.026)	(0.030)
Absolute Distance 30-40 miles	-0.297***	-0.543***
	(0.033)	(0.025)
Absolute Distance 40+ miles	-0.493***	-0.647***
	(0.022)	(0.017)
N	927707	1490533
Sample?	ACTIVE DUTY	NON-ACTIVE DUTY

Notes: robust standard errors corrected for within-catchment-area correlation in the error term are reported in parentheses. All regressions included year fixed effects and controls for patient age (dummies), sex, Charlson comorbidity, paygrade (dummies) and primary diagnosis dummies. *Source*: 2003-2013 Military Health System Data Repository. *** Significant at the 1 percent level; ** Significant at the 5 percent level; * Significant at the 10 percent level.

TABLE A3_2

Implicit First Stage Regressions For Both Endogenous Regressors

	(1)	*(2)*	*(3)*	*(4)*
	WITHOUT ZIP-CODE FIXED EFFECTS		WITH ZIP-CODE FIXED EFFECTS	
	ON_BASE	ACTIVE_DUTY X ON_BASE	ON_BASE	ACTIVE_DUTY X ON_BASE
Omitted: Absolute Distance < 10 Miles				
Absolute Distance 10-20 miles	-0.058***	0.007**	-0.095***	-0.026*
	(0.016)	(0.003)	(0.028)	(0.014)
Absolute Distance 20-30 miles	-0.322***	0.014***	-0.213***	0.012
	(0.030)	(0.002)	(0.043)	(0.021)
Absolute Distance 30-40 miles	-0.541***	0.014***	-0.384***	0.039
	(0.025)	(0.002)	(0.082)	(0.024)
Absolute Distance 40+ miles	-0.644***	0.015***	-0.224***	0.121***
	(0.018)	(0.001)	(0.051)	(0.019)
Omitted: ACTIVE_DUTY X Absolute Distance < 10 Miles				
ACTIVE_DUTY X Absolute Distance 10-20 miles	0.052***	-0.013	0.050***	-0.013
	(0.015)	(0.019)	(0.015)	(0.020)
ACTIVE_DUTY X Absolute Distance 20-30 miles	0.178***	-0.167***	0.177***	-0.161***
	(0.030)	(0.026)	(0.030)	(0.029)
ACTIVE_DUTY X Absolute Distance 30-40 miles	0.237***	-0.327***	0.242***	-0.320***
	(0.024)	(0.035)	(0.025)	(0.035)
ACTIVE_DUTY X Absolute Distance 40+ miles	0.148***	-0.532***	0.156***	-0.525***
	(0.022)	(0.022)	(0.022)	(0.023)
N	2418240	2418240	2418240	2418240
F-Statistics for Test of Joint Significant of Instruments	200.28	188.49	18.48	80.31
P-value of F-statistic	0.00	0.00	0.00	0.00

Notes: robust standard errors corrected for within-catchment-area correlation in the error term are reported in parentheses. All regressions included year fixed effects and controls for patient age (dummies), sex, Charlson comorbidity, paygrade (dummies) and primary diagnosis dummies. *Source*: 2003-2013 Military Health System Data Repository. *** Significant at the 1 percent level; ** Significant at the 5 percent level; * Significant at the 10 percent level.

Table A3_3

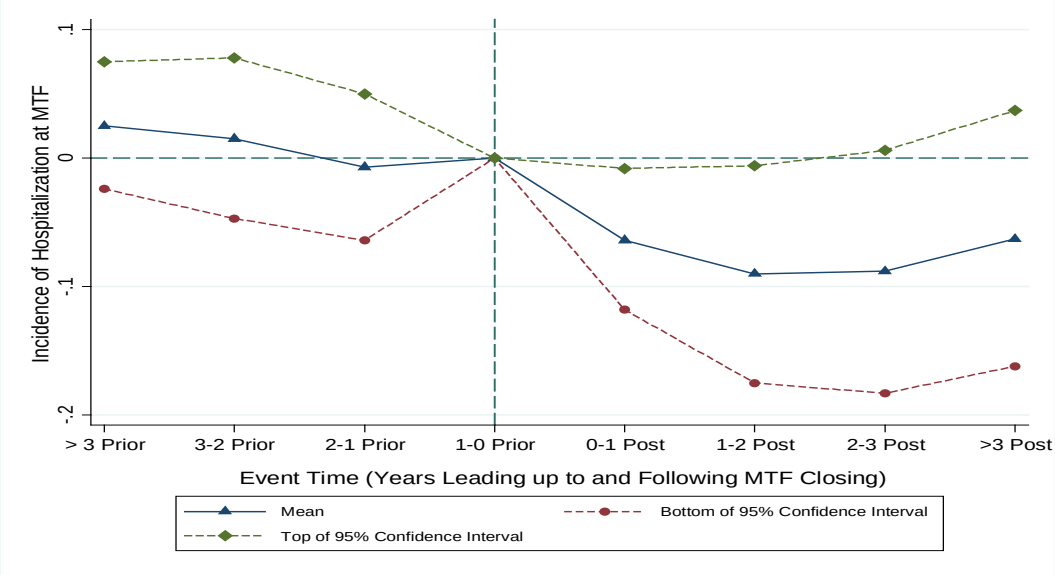
First Stage Analysis, Alternative IV Approach: Relationship between Binary Post-Closing Dummy and Likelihood of Receiving Care at Any MTF, Separately for Active and Non-Active Duty (For Zip-Codes Initially within 40 Miles of Base Hospital)

	(3)	*(4)*
Post-Closing Dummy	-0.131***	-0.100**
	(0.039)	(0.050)
Coefficient of Post-Closing Dummy as a Fraction of Respective Mean MTF Care Rate	-0.23	-0.23
N	650320	956395
Sample?	ACTIVE DUTY	NON--ACTIVE DUTY
Zip-Code Fixed Effects	YES	YES

Notes: robust standard errors corrected for within-catchment-area correlation in the error term are reported in parentheses. All regressions included year and zip-code effects and controls for patient age (dummies), sex, Charlson comorbidity, paygrade (dummies) and primary diagnosis dummies. Post-Closing equals 0 for all zip codes unaffected by a base closure (that is, all zip codes whose closest-MTF measure was not altered by a base closure) and 0 for years prior to the closure for those zip codes affected by a base closure. Post-Closing equals 1 for years after closure for those zip codes affected by a base closure. *Source*: 2003-2013 Military Health System Data Repository. *** Significant at the 1 percent level; ** Significant at the 5 percent level; * Significant at the 10 percent level.

FIGURE A1

First Stage Event-Study Analysis: Trend in Any MTF Utilization in Years Leading up to and Following MTF Closure



Notes: this figure plots coefficients from a regression of the incidence of a hospitalization occurring at an MTF (versus a civilian hospital) on a series of leads and lags of the closing variable (where the relevant lead and lag variable equals 1 in the indicated period of time and 0 in all other periods). The points in the graph represent the coefficients of the set of leads and logs of the interaction variables. The period of time representing the year leading up to the closing is the reference period. Source: 2003-2013 Military Health System Data Repository.

In this figure, we plot the effect of MTF closures on whether or not the relevant hospitalization occurs at any MTF hospital, focusing on those patients living in zipcodes that were within 40 miles of an MTF hospital at the beginning of the hospital period. The underlying regression includes year effects, zipcode effects and the various controls included in our primary specifications. The goal of this exercise is to determine whether the timing of the response documented in Figure 2 of the text corresponds with the timing of the shift towards civilian care induced by MTF closures. The substantial decline in MTF usage in the year proceeding the MTF closure indeed corresponds with the strong differential increase in treatment intensity for active duty relative to non-active duty that likewise occurs in the year proceeding an MTF closure (see Figure 2).

TABLE A4

Relationship between Medical Liability Immunity and Inpatient Encounter Costs, Reduced Form Results

	(1)
Active	-0.006
	(0.004)
Omitted: Absolute Distance < 10 Miles	
Absolute Distance 10-20 miles	-0.000
	(0.003)
Absolute Distance 20-30 miles	0.009
	(0.006)
Absolute Distance 30-40 miles	-0.022***
	(0.008)
Absolute Distance 40+ miles	-0.011***
	(0.005)
Omitted: Absolute Distance < 10 Miles*Active	
Absolute Distance 10-20 miles*Active	0.004
	(0.004)
Absolute Distance 20-30 miles * Active	0.022***
	(0.008)
Absolute Distance 30-40 miles * Active	0.033***
	(0.006)
Absolute Distance 40+ miles * Active	0.035***
	(0.005)
N	2027632

Notes: robust standard errors corrected for within-physician correlation in the error term are reported in parentheses. All regressions included hospital, year and zip-code fixed effects and controls for patient age (dummies), sex, Charlson comorbidity, paygrade (dummies) and primary diagnosis field (dummies). *Source*: 2003-2013 Military Health System Data Repository. *** Significant at the 1 percent level; ** Significant at the 5 percent level; * Significant at the 10 percent level.

TABLE A5

Testing for Selection Effects in Patient Spillover Analysis: Relationship between Predicted Treatment Intensity Based on Covariates and Active-Duty Patient Share of Provider

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
	PREDICTED LOG RELATIVE WEIGHTED PRODUCT		PREDICTED LOG NUMBER OF BED DAYS		PREDICTED LOG NUMBER OF PROCEDURES		PREDICTED INCIDENCE OF ANY PROCEDURE	
Panel A: Physician-Level Spillover Analysis. Outcome variable equals the indicated metric.								
Active Duty Patient Share of Physician	0.037	-	-0.014	-	-0.012	-	-0.016	-
	(0.009)		(0.006)		(0.006)		(0.005)	
(Omitted: 1st Quartile of Active Duty Patient Share)								
2nd Quartile of Active Duty Patient Share	-	0.001	-	-0.000	-	0.003	-	0.001
		(0.002)		(0.002)		(0.002)		(0.001)
3rd Quartile of Active Duty Patient Share	-	0.016	-	-0.005	-	-0.003	-	-0.005
		(0.004)		(0.002)		(0.002)		(0.002)
4th Quartile of Active Duty Patient Share	-	0.017	-	-0.003	-	-0.005	-	-0.007
		(0.005)		(0.005)		(0.004)		(0.003)
N	522630	522630	575579	575579	506035	506035	576187	576187
Panel B: Hospital-Level Spillover Analysis. Dependent variable equals the indicated metric.								
Active Duty Patient Share of Hospital	0.456	-	0.008	-	-0.011	-	-0.133	-
	(0.160)		(0.115)		(0.198)		(0.061)	
(Omitted: 1st Quartile of Active Duty Patient Share)								
2nd Quartile of Active Duty Patient Share	-	0.003	-	-0.004	-	0.003	-	-0.004
		(0.006)		(0.007)		(0.012)		(0.006)
3rd Quartile of Active Duty Patient Share	-	0.019	-	0.010	-	0.033	-	-0.001
		(0.009)		(0.010)		(0.019)		(0.007)
4th Quartile of Active Duty Patient Share	-	0.040	-	-0.014	-	-0.010	-	-0.017
		(0.014)		(0.017)		(0.026)		(0.009)
N	522630	522630	575579	575579	506035	506035	576187	576187

Notes: robust standard errors corrected for within-physician correlation in the error term are reported in parentheses. Predicted outcomes are based on regressions of the indicated intensity measure on year fixed effects, primary diagnosis code fixed effects, and controls for patient age (dummies), sex, Charlson comorbidity and paygrade (dummies). This analysis is confined to records from the direct-care setting on the base. The active-duty patient share of the physician or hospital is calculated annually. Specifications in Panel A include physician fixed effects, thereby drawing on within-physician variation over time in active-duty patient shares. Specifications in Panel B include hospital fixed effects, thereby drawing on within-hospital variation over time in active-duty patient shares.

TABLE A6

Relationship between Medical Liability Immunity and Treatment Intensity (Relative Weighted Product, Logged), among Sub-sample of Non-Deferrable Medical Conditions

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
MTF	-0.032*** (0.003)	-	-	-0.005 (0.019)	-	-
Active Duty Patient	0.035*** (0.005)	0.038*** (0.006)	0.027*** (0.005)	0.032*** (0.007)	0.034*** (0.005)	0.022*** (0.004)
Active Duty Patient X MTF	**-0.034*** (0.006)**	**-0.043*** (0.007)**	**-0.024*** (0.005)**	**-0.039*** (0.007)**	**-0.035*** (0.005)**	**-0.016*** (0.006)**
N	1152115	1152115	1152115	1152115	1152115	1152115
Hospital Fixed Effects	NO	YES	NO	NO	YES	NO
Physician Fixed Effects	NO	NO	YES	NO	NO	YES
Instrument for MTF & Active Duty Patient X MTF?	NO	NO	NO	YES	YES	YES
Zip code Fixed Effects?	NO	NO	NO	YES	YES	YES

Notes: robust standard errors corrected for within-catchment-area correlation in the error term are reported in parentheses (based on original catchment area designations). All regressions include year fixed effects and controls for patient age (dummies), sex, Charlson comorbidity and paygrade (dummies), along with primary diagnosis code dummies. The sample is limited to those admissions with a primary diagnosis code whose weekend share of admissions is at least as 20%. *** Significant at the 1 percent level; ** Significant at the 5 percent level; * Significant at the 10 percent level.

TABLE A7

Relationship between Medical Liability Immunity and Treatment Intensity
(Relative Weighted Product, Logged), including all Ages

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
MTF	-0.053*** (0.010)	-	-	0.082*** (0.029)	-	-
Active Duty Patient	0.019*** (0.005)	0.018*** (0.005)	0.019*** (0.005)	0.033*** (0.012)	0.059*** (0.010)	0.064*** (0.020)
Active Duty Patient X MTF	**-0.045*** (0.008)**	**-0.053*** (0.007)**	**-0.049*** (0.006)**	**-0.108*** (0.012)**	**-0.121*** (0.012)**	**-0.137*** (0.020)**
N	3403098	3403098	3403098	3403098	3403098	3403098
Hospital Fixed Effects	NO	YES	NO	NO	YES	NO
Physician Fixed Effects	NO	NO	YES	NO	NO	YES
Instrument for MTF & Active Duty Patient X MTF?	NO	NO	NO	YES	YES	YES
Zip code Fixed Effects?	NO	NO	NO	YES	YES	YES

Notes: robust standard errors corrected for within-catchment-area correlation in the error term are reported in parentheses (based on original catchment area designations). All regressions include year fixed effects and controls for patient age (dummies), sex, Charlson comorbidity and paygrade (dummies), along with primary diagnosis code dummies. The sample includes all non-retiree Prime beneficiaries of all ages (including children and those over 60). *** Significant at the 1 percent level; ** Significant at the 5 percent level; * Significant at the 10 percent level.

TABLE A8

Relationship between Medical Liability Immunity and Treatment Intensity (Relative Weighted Product, Logged), Alternative Instrumental Variables Approach

	(1)	*(2)*	*(3)*
MTF	-0.022 (0.035)	-	-
Active Duty Patient	0.066*** (0.017)	0.058*** (0.008)	0.051*** (0.009)
Active Duty Patient X MTF	**-0.075*** **(0.016)**	**-0.064*** **(0.010)**	**-0.055*** **(0.011)**
N	1355848	1355848	1355848
Hospital Fixed Effects	NO	YES	NO
Physician Fixed Effects	NO	NO	YES
Instrument for MTF & Active Duty Patient X MTF?	YES	YES	YES
Zip code Fixed Effects?	YES	YES	YES

Notes: robust standard errors corrected for within-catchment-area correlation in the error term are reported in parentheses (based on original catchment area designations). All regressions include year fixed effects and controls for patient age (dummies), sex, Charlson comorbidity and paygrade (dummies), along with primary diagnosis code dummies. *MTF* and *Active-Duty X MTF* are instrumented by a dummy variable indicating post-closing (for zip codes affected by a BRAC-induced hospital closing) and by the interaction between active-duty status and the post-closing dummy. The sample is limited to those zip codes initially within 40 miles of a base hospital at the beginning of the sample. ** Significant at the 5 percent level; * Significant at the 10 percent level.

TABLE A9

Relationship between Medical Liability Immunity and Treatment Intensity (Relative Weighted Product), Miscellaneous Robustness Checks

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Active Duty Patient	0.035***	0.036***	0.035***	0.035***	0.032***
	(0.004)	(0.005)	(0.005)	(0.005)	(0.010)
Active Duty Patient X MTF	**-0.044*** **	**-0.049*** **	**-0.049*** **	**-0.049*** **	**-0.053*** **
	(0.006)	**(0.007)**	**(0.007)**	**(0..007)**	**(0.015)**
N	1838092	749256	2027632	2027632	2236304
Relative Weighted Product in Levels or Logs	LOGS	LOGS	LOGS	LOGS	LEVELS
Drop Injury-Related Admissions?	YES	NO	NO	NO	NO
Limit Sample to MHS Beneficiaries that Do Not Move At All Over Sample Period?	NO	YES	NO	NO	NO
Include Control for Distance to Nearest Hospital of Any Kind	NO	NO	YES	NO	NO
Include Catchment Area Fixed Effects (Based on Time-Varying Catchment Area Assignments that update Following Base-Hospital Closures)	NO	NO	NO	YES	NO

Notes: robust standard errors corrected for within-catchment-area correlation in the error term are reported in parentheses (based on original catchment area designations). All regressions include year fixed effects, zip-code fixed effects, hospital fixed effects and controls for patient age (dummies), sex, Charlson comorbidity and paygrade (dummies), along with primary diagnosis code dummies. MTF and Active-Duty-Patient X MTF are instrumented by a series of dummy variables capturing different distance bins between a patient's residence and the closest MTF along with the interaction between such dummies and the active-duty-patient dummy. The coefficient of the MTF indicator is dropped due to the inclusion of provider fixed effects. *** Significant at the 1 percent level; ** Significant at the 5 percent level; * Significant at the 10 percent level.

TABLE A10

Balance in Predicted Treatment Intensity across Patient Categories, after Residualizing Out Various Additional Effects

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
	MEANS (STANDARD DEVIATIONS) OF INDICATED VARIABLES				
	ON-BASE		OFF-BASE		DIFFERENCE-IN-DIFFERENCE FOR INDICATED VARIABLE
	ACTIVE-DUTY	NON-ACTIVE DUTY	ACTIVE-DUTY	NON-ACTIVE-DUTY	
Predicted Log Relative Weighted Product, Based on Regression of Log of Relative Weighted Product on Covariates	-0.29 (0.47)	-0.53 (0.35)	-0.26 (0.49)	-0.49 (0.38)	0.02 (0.02)
Predicted Log Relative Weighted Product, Based on Regression of Log of Relative Weighted Product on Covariates, after Residualizing out Hospital Effects	-0.28 (0.45)	-0.52 (0.33)	-0.26 (0.47)	-0.48 (0.36)	0.02 (0.02)
Predicted Log Relative Weighted Product, Based on Regression of Log of Relative Weighted Product on Covariates, after Residualizing out Hospital-by-Year Effects	-0.28 (0.45)	-0.52 (0.33)	-0.26 (0.47)	-0.48 (0.367)	0.02 (0.02)
Predicted Log Relative Weighted Product, Based on Regression of Log of Relative Weighted Product on Covariates, after Residualizing out Patient Zip-code Effects	-0.28 (0.47)	-0.54 (0.35)	-0.25 (0.49)	-0.49 (0.38)	0.02 (0.02)

Notes: Standard errors in Column 5 are corrected for within-catchment area correlation in the error term (based on catchment areas as they are defined at the beginning of the sample, prior to any base closings) and are reported in parentheses. Covariates include patent sex, age dummies, Charlson comorbidity score, primary diagnosis dummies and dummies for the pay-grade status of the family sponsor.