Effect of Health System Consolidation on Hospital's Quality and Safety Outcomes: Evidence from the U.S. Military Health System Data Repository

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Disclaimer

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Non-Disclosure

- Patrick Richard, PhD has no conflicts to report.

OBJECTIVE

- Determine the effect of the 2017 National Defense Authorization Act that transferred administrative authority of over 700 Military Treatment Facilities (MTFs) worldwide from Military Branches (Army, Navy, Air Force) to a single entity, the Defense Health Agency (DHA), on the following hospitals quality and safety outcomes:
  - All cause 30-day mortality
  - All cause 60-day mortality
  - 30-day unplanned rehospitalizations
  - Inpatient falls
  - Hospital Acquired Infections (HACs)
  - Hospital Acquired Adverse Drug Events
- **Using military data**, we used CMS/AHRQ algorithms based on ICD-10 codes to measure these outcomes

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Policy Context: Key Takeaways

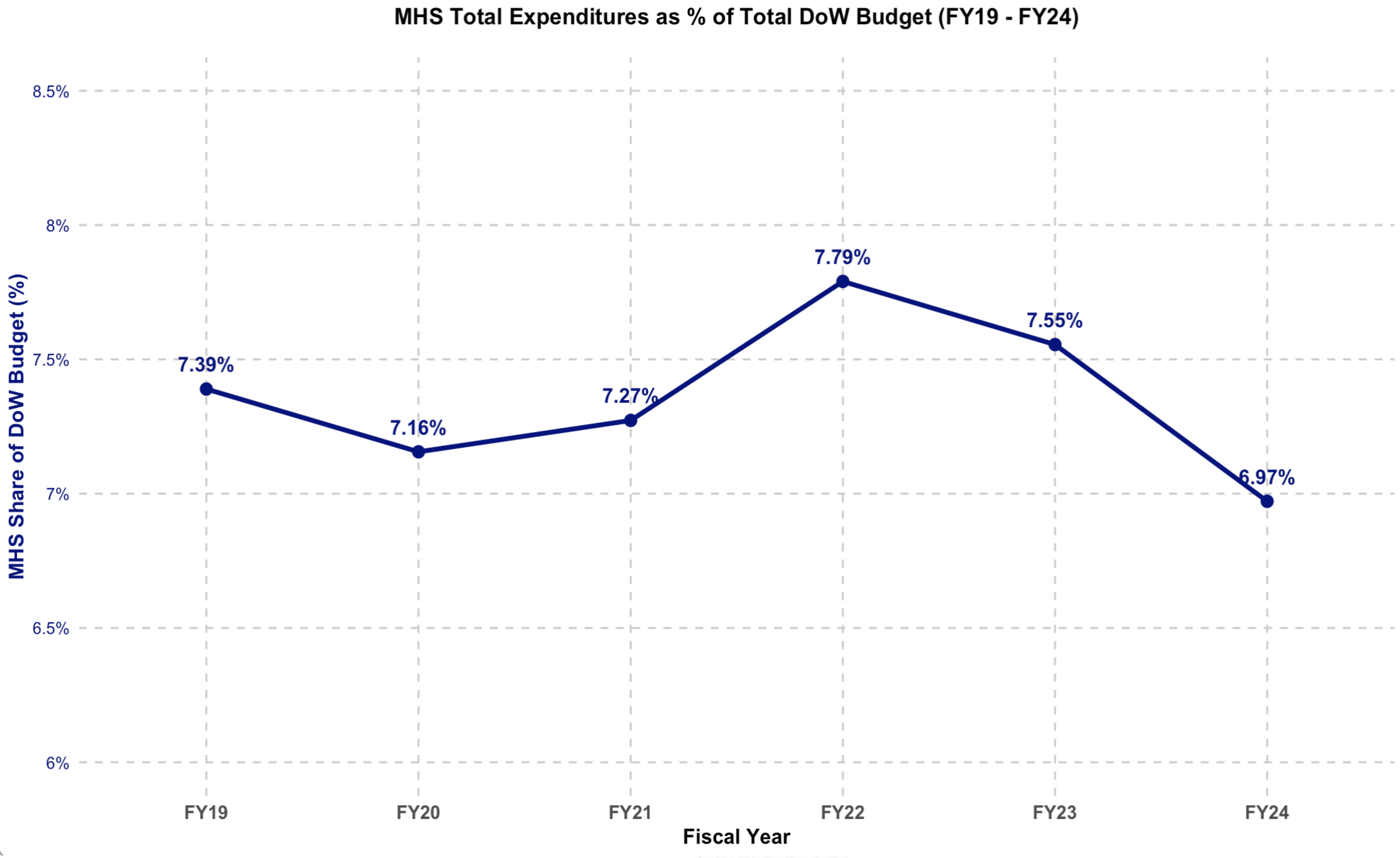
Scope: Centralized administration of more than 700 military hospitals and clinics under the Defense Health Agency.

Significance: Created one of the largest integrated healthcare systems in the United States.

Policy Rationale: Designed to improve quality, readiness, and efficiency while addressing the rising costs of military healthcare.

Research Relevance: Provides a unique opportunity to evaluate the effects of large-scale health system consolidation on patient safety outcomes.

Why This Major Policy Reform?



1. CONSOLIDATION
Hereafter called **Consolidation.**

2. PRESSURE
Persistent Cost and Budgetary Pressure Concerns.

3. LEADERSHIP CONCERN
Senior leaders in the DoW/MHS are concerned as MHS expenditures constitute about 7% of the total DoW budget.

Existing Literature On Hospital Consolidation – No Studies in the MHS

- An existing literature (Beaulieu et al., 2020; Ho & Hamilton, 2000; Romano & Balan, 2011; Mutter et al., 2011; Hayford, 2012; Neprash & McWilliams, 2019)… but findings are not consistent.
- Our study builds on Beaulieu et al. (2020), a relevant study that examined healthcare system consolidation and quality and controlled for population characteristics.
- Beaulieu et al. (2020) found that consolidation had mixed effects: a slight decline in patient experience, no change in readmission rates, but improvements in some clinical processes.
- These findings, combined with the MHS's unique mission, underscore the need for our specific research.

Simplified Conceptual Framework: How does "Consolidation" Affect Patient Quality and Safety Outcomes

- Potential benefits:

  - Reduces care fragmentation, redundancies, and multiple handoffs (Cutler et al., 2013; Encinosa et al., 2022; Beaulieu et al., 2020; Noether & May, 2017)
  - Improves communication and coordination across settings (Wennberg, 2011)
  - Optimizes patient management and the use of evidence-based treatment to improve outcomes (Encinosa et al., 2022)
  - Ensures continuity of care from diagnosis to acute care, particularly specialty care (Encinosa et al., 2022) and post-acute and rehabilitative services (Cutler et al., 2013).

Simplified Conceptual Framework:
How does "Consolidation" Affect Patient Quality and Safety Outcomes

- Potential disadvantages:
  - Leaders and managers might spend too much time on coordinating production and healthcare delivery activities, creating a "managerial overload" (Gaynor, 2019).

- Consolidation was strategically implemented in three phases (waves):

Study Design: Cases & Controls

2016-2025

	Treatment Groups = Direct Care Cases	Purchased Care Controls
Wave 0 (2020-Q1)	5 (240 observations)	151 (7,248 observations)
Wave 1 (2021-Q3)	14 (controls for w0; 672 observations)	344 (16,512 observations)
Wave 2 (2021-Q4)	13 (controls for w0 & w1; 624 observations)	162 (7,776 observations)

- **Inclusion Criteria:** Patients 18+ (all beneficiaries, ADSMs, Military Retirees, and their dependents).
- **Exclusion Criteria:** Guards and reservists; patients diagnosed with COVID 19; patients concurrently receiving care in both systems; overseas hospitals; hospitals that appeared in the inpatient data but were classified as clinics or transitioned to clinic status during the study period; Hospitals with fewer than 10 patients per quarter.
- **Controls matched to Cases** by Provider **Catchment Area:** MTF's 40-mile catchment area the care was delivered in.
- Analysis is conducted at the quarterly level (Total Observations = Facilities x Quarters).
- Further refinement of matching using synthetic controls.
- Number of controls varied by beneficiary population.

Military Data Repository (MDR)

MDR IS A CENTRALIZED DATA REPOSITORY FOR THE DEFENSE HEALTH AGENCY (DHA)

Contains:

Administrative claims data, including coverage, costs, workload, payment, and clinical information

Additional datasets describing deployment history, demographic, and clinical information

Covers all active-duty personnel, military retirees, and their dependents in the U.S. and abroad

We used quarterly data at the hospital level, from 2016-2025

Covariates

- Facility Characteristics (Readiness Service Prior to Transition, DHA Network)
- Patient Demographics (Age, Sex, Race, Marital Status)
- Patient Military Beneficiary Characteristics (Beneficiary Category, Branch of Service, Rank, Deployment History, Insurance Status)
- Case Mix (Charlson Comorbidity Index)

Econometric Strategy

- Staggered DiD based on the FLEX Model
- Tested for parallel trends and accounted for anticipation assumptions by using lags

FLEX MODELS
A FLEXIBLE, HETEROGENEOUS TREATMENT EFFECTS DIFFERENCE-IN-DIFFERENCES ESTIMATOR FOR REPEATED CROSS-SECTIONS (DEB ET AL., 2025)

Conventional TWFE (Wooldridge, 2007)

$$Quality_{ict} = \beta_0 + \beta_1 \cdot Treatment_{ict} + \beta_2 \cdot Post_{ict} + \beta_3 \cdot (Treatment_i \times Post_t) + \epsilon_{ict}$$

- 2 Key Assumptions:
  - Under the generalized DiD, any unmeasured determinants of the outcomes are either time-invariant or group-invariant when we have multiple groups and time periods (G ≥ 2 and T ≥ 2)
  - Strict exogeneity (anticipation)

FLEX MODELS

A Flexible, Heterogeneous Treatment Effects Difference-in-Differences Estimator for Repeated Cross-Sections (Deb et al., 2025)

The Problem

- The Two-Way Fixed Effects (TWFE) models are biased in staggered Difference-in-Differences (DiD) designs because they aggregate heterogeneous treatment effects that vary across groups and over time.

The Solution: Flex Model

- Flex Model (Deb et al., 2025) is a new, more advanced statistical method to measure the effect of a treatment or policy with staggered implementation (Waves).

- It is flexible because it allows for treatment effects to differ by groups, as opposed to the traditional TWFE models, specifically including:
  - Lags: Transition Group x Quarter – After
  - Leads: Transition Group x Quarter – Before
  - Independent variables
  - Time/Quarters x Independent variables
  - Lags and Leads with covariates
  - Absorb the fixed effects of Transition Groups

DIRECT CARE FACILITIES INCLUDED IN EACH WAVE

Wave-0 (2020 Q1)

1. NH JACKSONVILLE
2. WALTER REED NATIONAL MILITARY MEDICAL CNTR
3. KEESLER MEDICAL GROUP
4. AMC WOMACK-FT BRAGG
5. ALEXANDER T AUGUSTA MED CTR-FT BELVOIR

Wave-1 (2021 Q3)

1. TRAVIS MEDICAL GROUP
2. NH CAMP PENDLETON
3. NMC SAN DIEGO
4. ACH EVANS-CARSON
5. AMC EISENHOWER-FT GORDON
6. ACH MARTIN-FT BENNING
7. ACH WINN-FT STEWART
8. AMC TRIPLER-SHAFTER
9. ACH BLANCHFIELD-FT CAMPBELL
10. NMC CAMP LEJEUNE
11. AMC BAMC-FSH
12. AMC DARNALL-FT HOOD
13. NMC PORTSMOUTH
14. AMC MADIGAN-JBLM

Wave-2 (2021 Q4)

1. ACH BASSETT-WAINWRIGHT
2. ELMENDORF MEDICAL GROUP
3. NH TWENTYNINE PALMS
4. EGLIN MEDICAL GROUP
5. ACH IRWIN-RILEY
6. ACH BAYNE-JONES-FT POLK
7. ACH LEONARD WOOD
8. NELLIS MEDICAL GROUP
9. ACH KELLER-WEST POINT
10. WRIGHT-PATTERSON MEDICAL GROUP
11. NH BEAUFORT
12. AMC WILLIAM BEAUMONT-FT BLISS
13. ACH WEED-IRWIN

Excluded Facilities

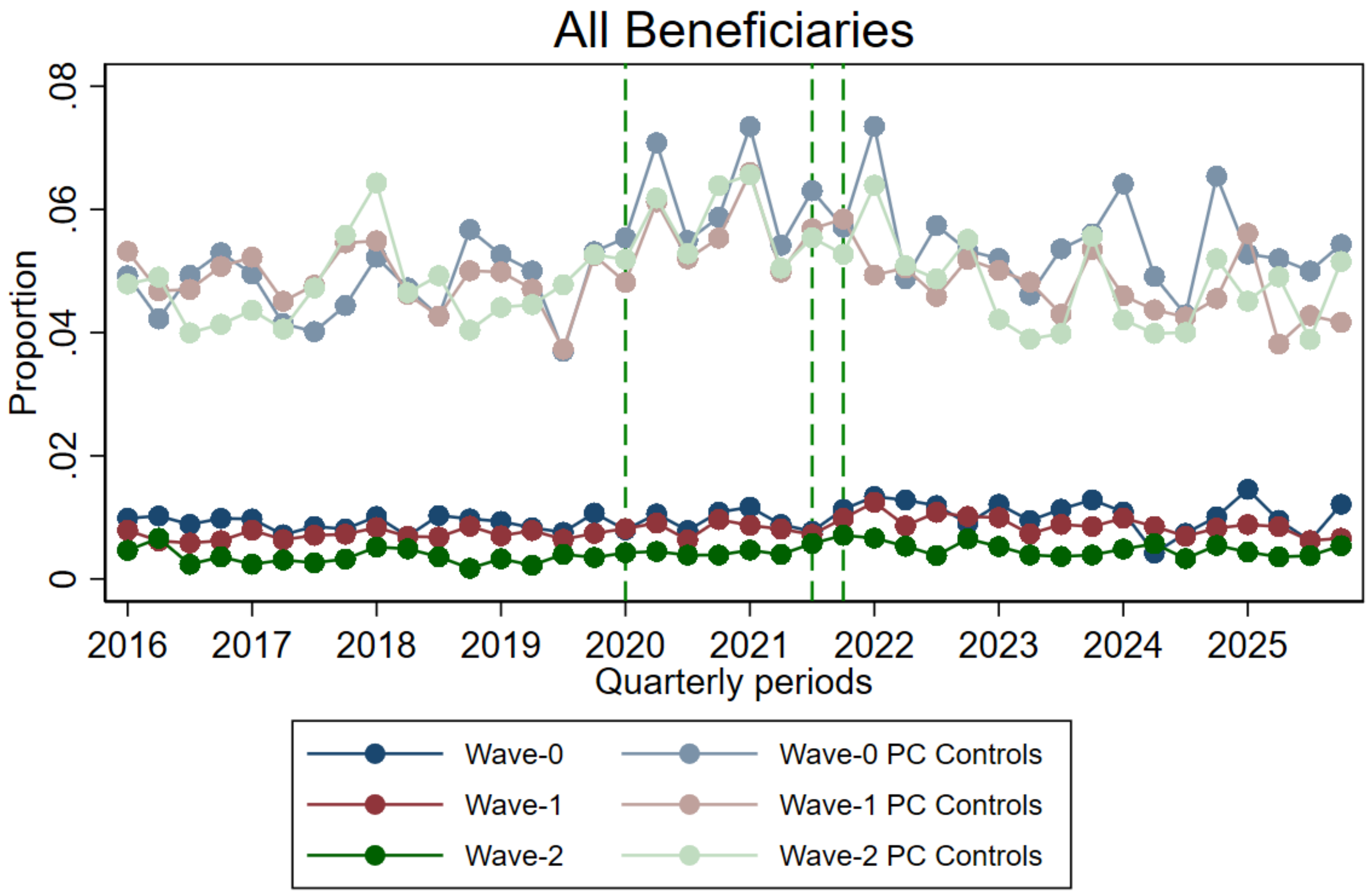
1. NHC PENSACOLA
2. MOUNTAIN HOME MEDICAL GROUP
3. AHC IRELAND-KNOX
4. AHC REYNOLDS-FT SILL
5. AHC MONCRIEF-JACKSON
6. LANGLEY MEDICAL GROUP
7. NHC BREMERTON
8. NHC OAK HARBOR
9. USCG CLINIC CAPE MAY

Table 1: Description of MTF and Purchased Care Hospital and Patient Populations by Wave (Baseline, CY 2016)

	Wave-0			Wave-1			Wave-2	
	Wave-0	Wave-0 DC Controls	Wave-0 PC Controls	Wave-1	Wave-1 DC Controls	Wave-1 PC Controls	Wave-2	Wave-2 PC Controls
Number of Facilities	5	27	99	14	13	205	13	99
N	20 (15.6%)	108 (84.4%)	344 (94.5%)	56 (51.9%)	52 (48.1%)	694 (92.5%)	52 (13.6%)	329 (86.4%)
Number of Patients	1,119.950 (599.695)	891.417 (813.871)	82.427 (106.124)***	1,359.911 (861.553)	386.885 (297.781)***	90.931 (113.169)***	386.885 (297.781)	57.146 (66.372)***
Patient Age								
18-29	0.274 (0.106)	0.469 (0.196)***	0.117 (0.158)***	0.431 (0.162)	0.509 (0.221)*	0.137 (0.163)***	0.509 (0.221)	0.148 (0.179)***
30-44	0.234 (0.047)	0.226 (0.058)	0.092 (0.076)***	0.225 (0.046)	0.227 (0.069)	0.100 (0.101)***	0.227 (0.069)	0.101 (0.100)***
45-54	0.113 (0.026)	0.071 (0.035)***	0.070 (0.058)***	0.080 (0.026)	0.060 (0.041)**	0.060 (0.065)*	0.060 (0.041)	0.058 (0.055)
55-64	0.145 (0.038)	0.086 (0.052)***	0.121 (0.090)	0.097 (0.040)	0.075 (0.061)*	0.108 (0.097)	0.075 (0.061)	0.099 (0.080)*
65 plus	0.234 (0.132)	0.148 (0.138)*	0.601 (0.246)***	0.167 (0.141)	0.129 (0.133)	0.595 (0.292)***	0.129 (0.133)	0.593 (0.274)***
Patient Beneficiary Category								
ADSM	0.210 (0.065)	0.306 (0.179)*	0.049 (0.118)***	0.286 (0.079)	0.326 (0.244)	0.049 (0.124)***	0.326 (0.244)	0.066 (0.131)***
Military Retirees	0.277 (0.083)	0.164 (0.113)***	0.384 (0.131)***	0.187 (0.101)	0.139 (0.121)*	0.360 (0.132)***	0.139 (0.121)	0.371 (0.139)***
Dependent of ADSM	0.268 (0.089)	0.363 (0.188)*	0.102 (0.115)***	0.340 (0.151)	0.388 (0.220)	0.134 (0.150)***	0.388 (0.220)	0.124 (0.144)***
Dependent of Military Retiree & Survivor	0.245 (0.059)	0.167 (0.107)**	0.465 (0.130)***	0.187 (0.091)	0.146 (0.119)*	0.457 (0.139)***	0.146 (0.119)	0.439 (0.144)***
Severity of Illness/Resource Intensity								
Charlson Comorbidity Index	0.626 (0.292)	0.423 (0.326)*	1.013 (0.697)*	0.495 (0.330)	0.347 (0.306)*	1.010 (0.707)***	0.347 (0.306)	1.025 (0.687)***

DEPENDENT VARIABLES: TREND ANALYSIS

Figure 2. Trends of 30-day Mortality in Military Hospitals and Purchased Care Facilities



Number of Facilities: Wave-0 (5); Wave-0 PC Controls (151); Wave-1 (14); Wave-1 PC Controls (344); Wave-2 (13); Wave-2 PC Controls (162)

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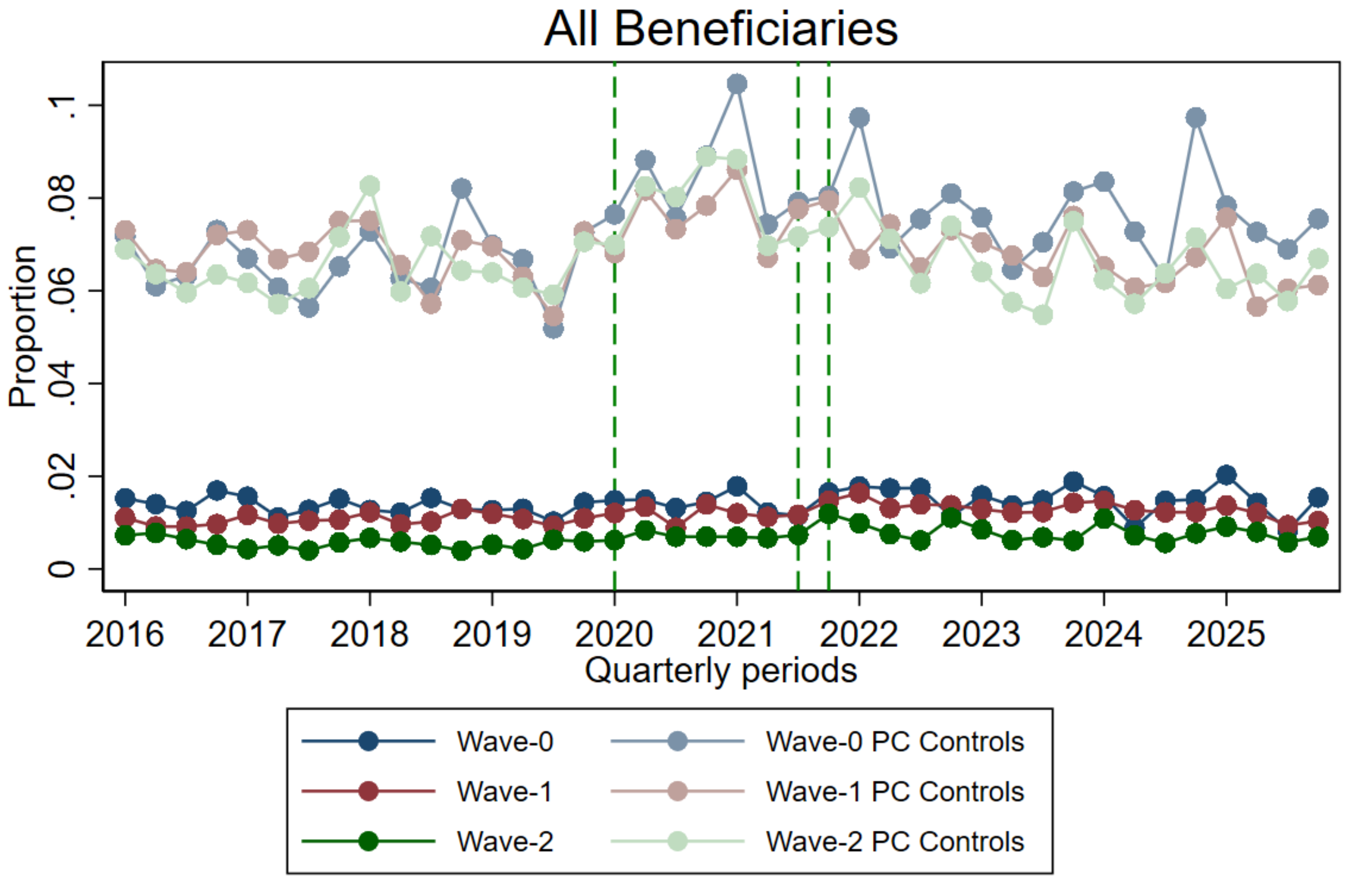
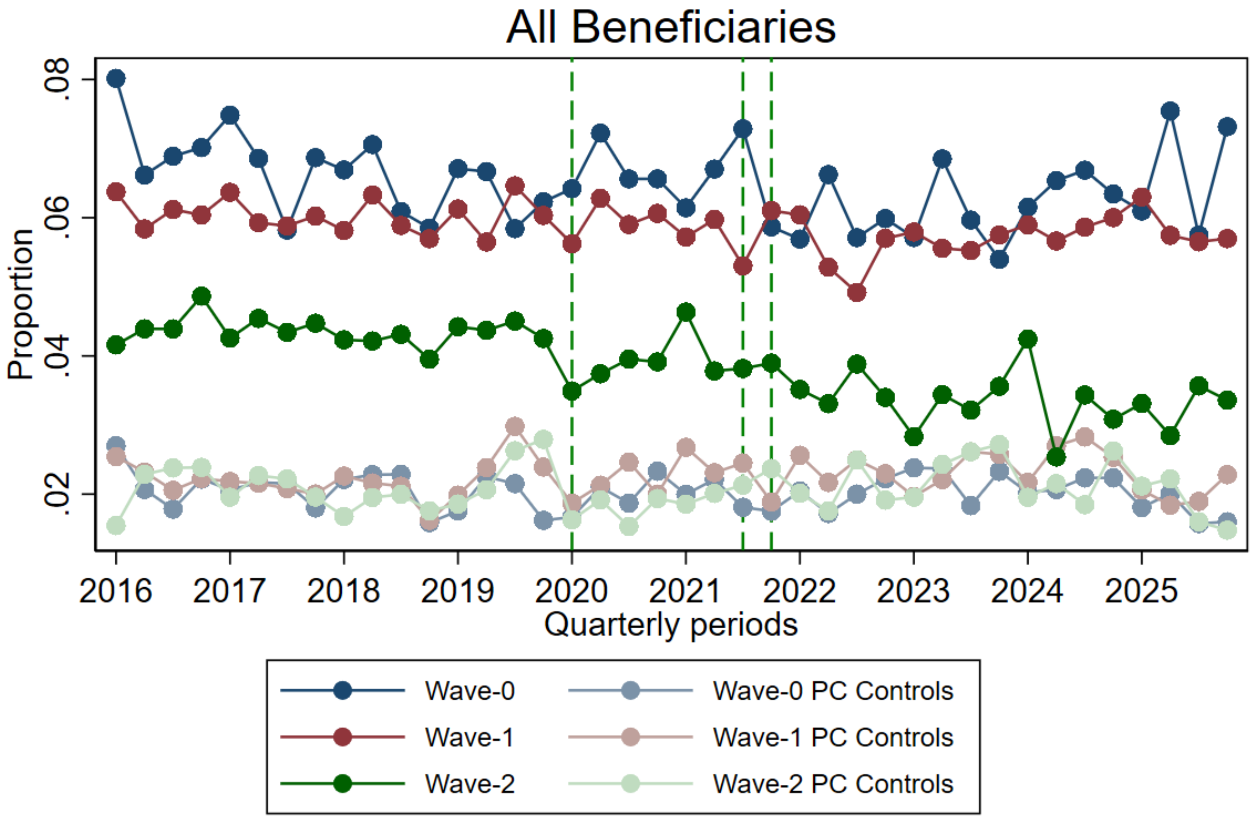
Figure 3. Trends of 60-day Mortality in Military Hospitals and Purchased Care Facilities



Number of Facilities: Wave-0 (5); Wave-0 PC Controls (151); Wave-1 (14); Wave-1 PC Controls (344); Wave-2 (13); Wave-2 PC Controls (162)

Figure 4. Trends of Unplanned Rehospitalization in Military Hospitals and Purchased Care Facilities



Number of Facilities: Wave-0 (5); Wave-0 PC Controls (151); Wave-1 (14); Wave-1 PC Controls (344); Wave-2 (13); Wave-2 PC Controls (162)

Based on the CMS Hospital-Wide All-Cause Unplanned Readmission (HWR) algorithm

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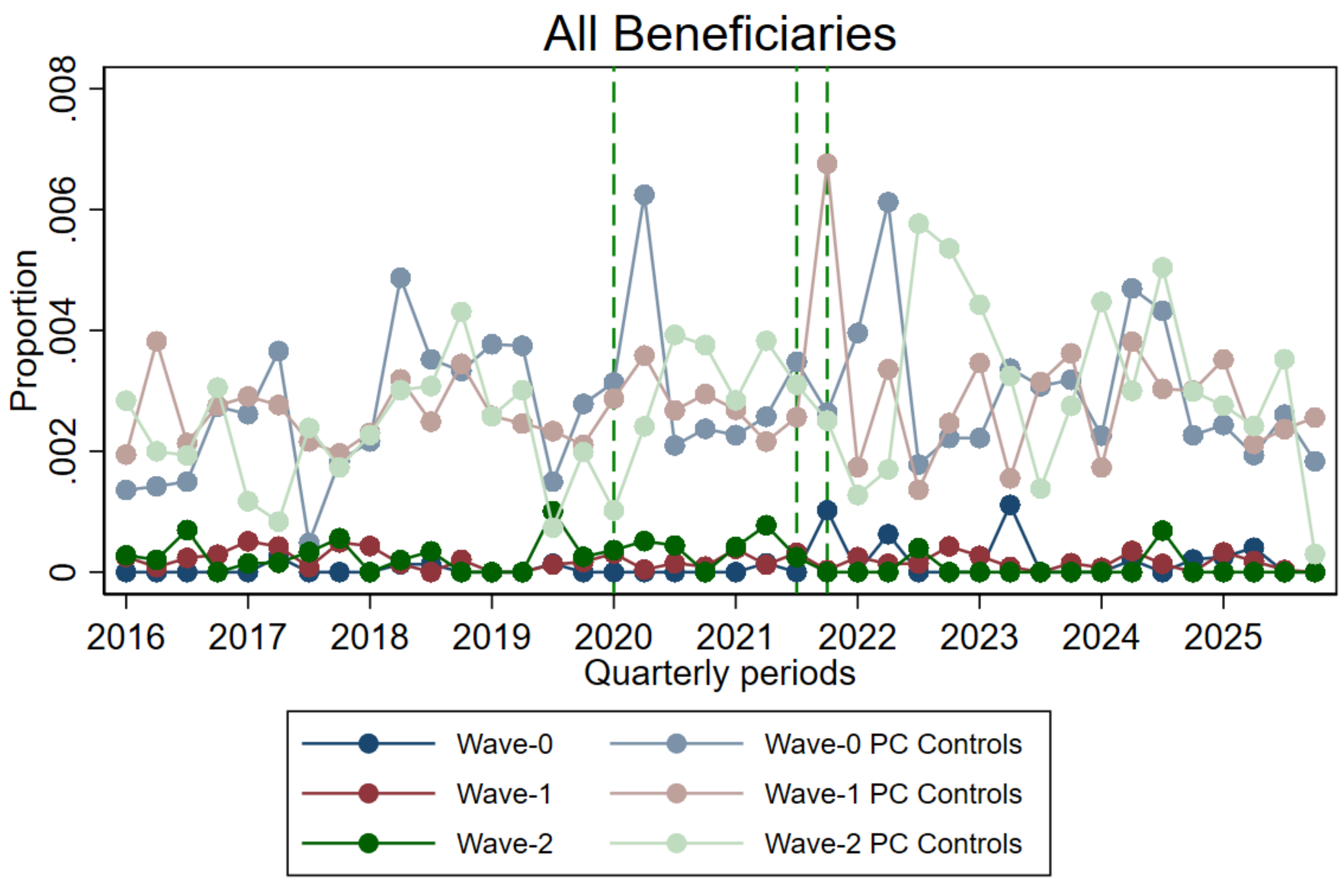
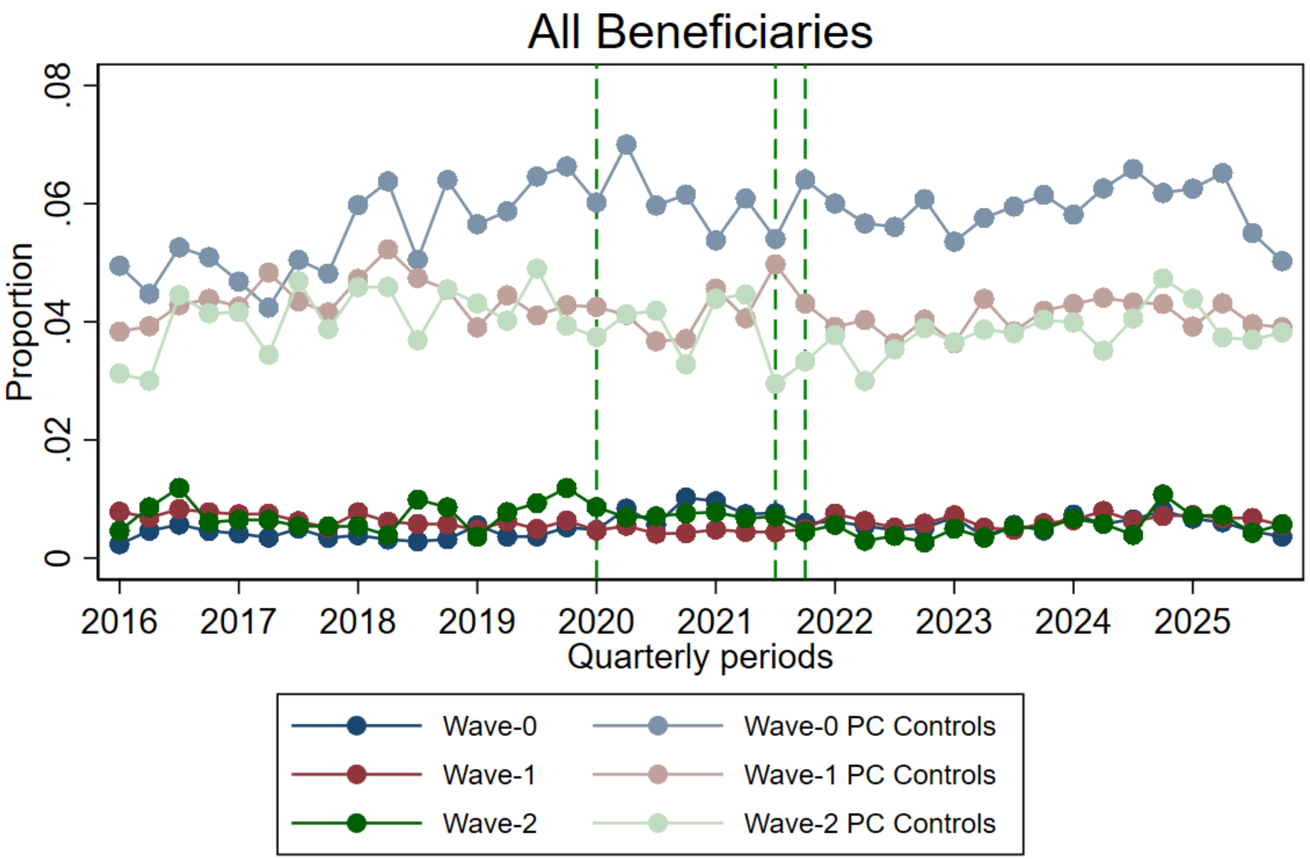
Figure 5. Trends of Inpatient Falls in Military Hospitals and Purchased Care Facilities



Number of Facilities: Wave-0 (5); Wave-0 PC Controls (151); Wave-1 (14); Wave-1 PC Controls (344); Wave-2 (13); Wave-2 PC Controls (162)

Figure 6. Trends of Hospital-acquired Infections in Military Hospitals and Purchased Care Facilities



Number of Facilities: Wave-0 (5); Wave-0 PC Controls (151); Wave-1 (14); Wave-1 PC Controls (344); Wave-2 (13); Wave-2 PC Controls (162)

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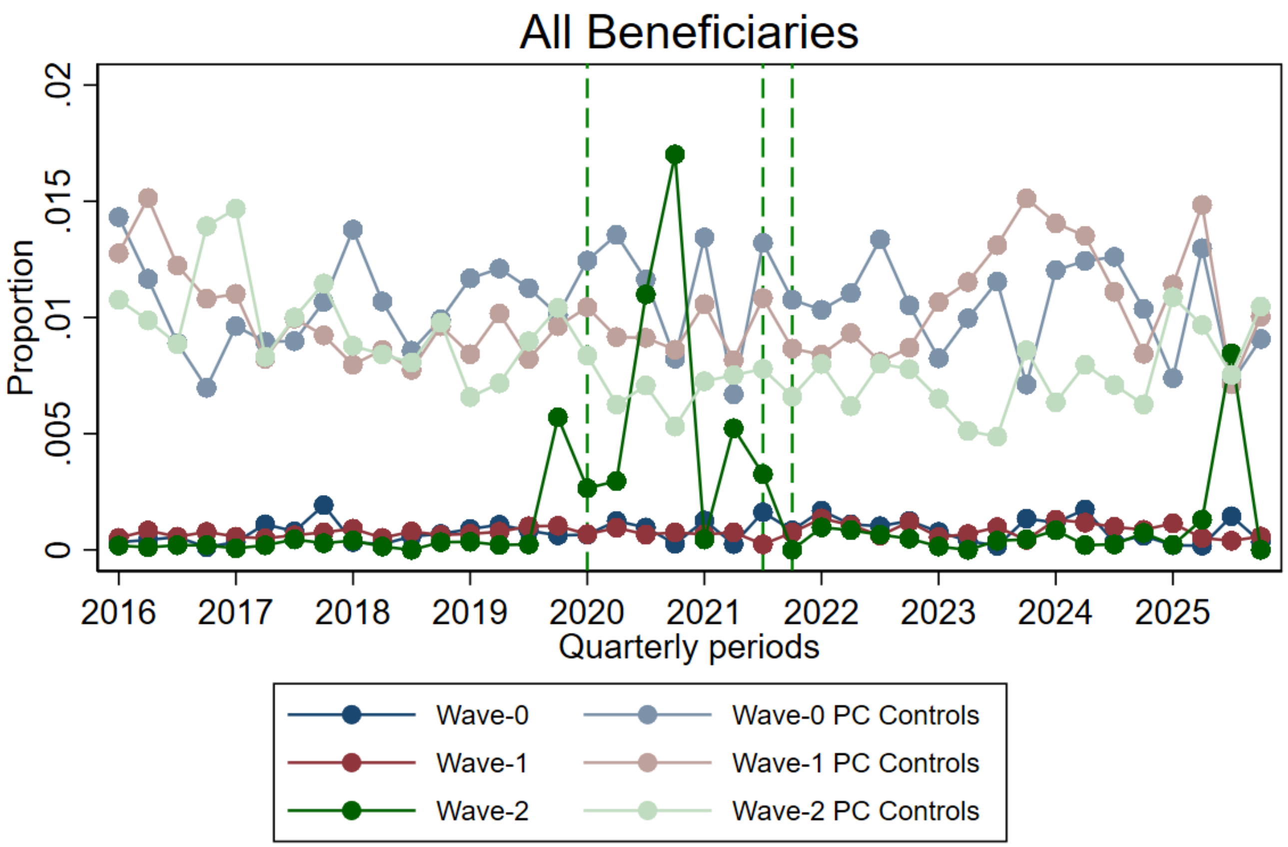
Figure 7. Trends of Hospital-acquired Adverse Drug Events in Military Hospitals and Purchased Care Facilities



Number of Facilities: Wave-0 (5); Wave-0 PC Controls (151); Wave-1 (14); Wave-1 PC Controls (344); Wave-2 (13); Wave-2 PC Controls (162)

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AVERAGE TREATMENT EFFECTS ON THE TREATED (ATT) ACROSS ALL OUTCOMES: FLEX MODEL BASELINE VS. SYNTHETIC CONTROLS

FIGURE 8. ATT ON 30-DAY MORTALITY: BASELINE VS. SYNTHETIC CONTROLS BY WAVE

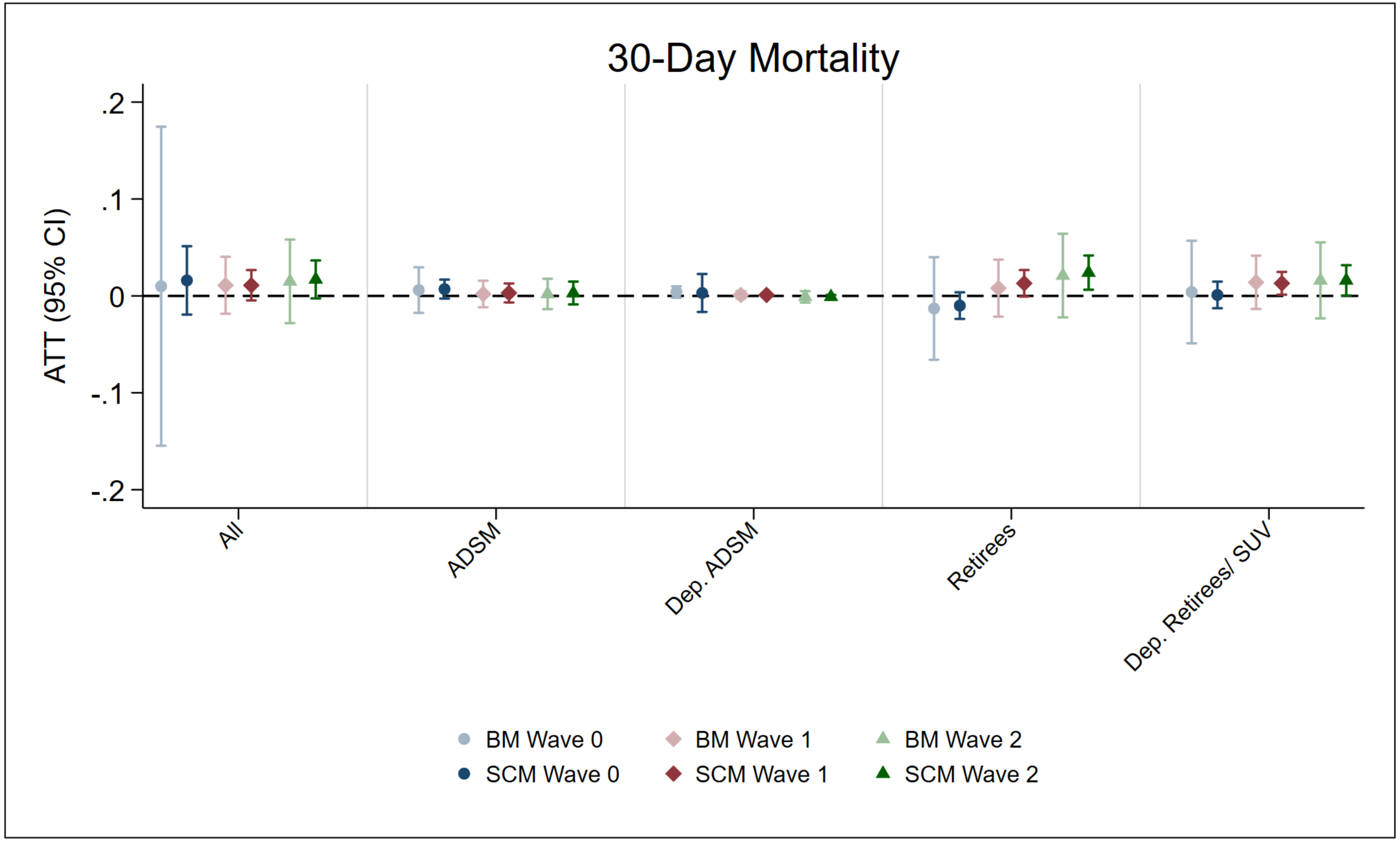

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FIGURE 9. ATT ON 60-DAY MORTALITY: BASELINE VS. SYNTHETIC CONTROLS BY WAVE

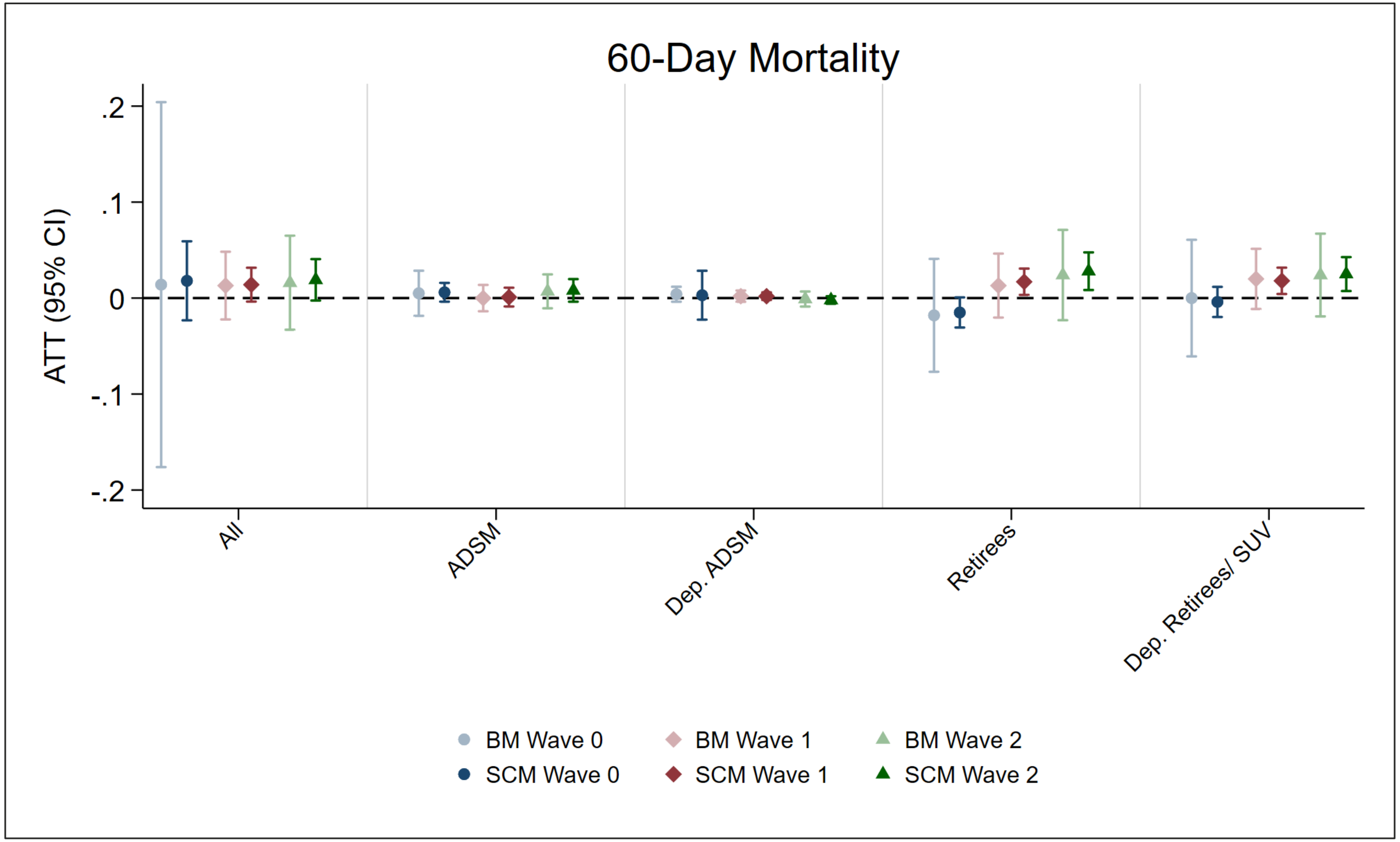

FIGURE 10. ATT ON UNPLANNED REHOSPITALIZATION 30-DAYS: BASELINE VS. SYNTHETIC CONTROLS BY WAVE

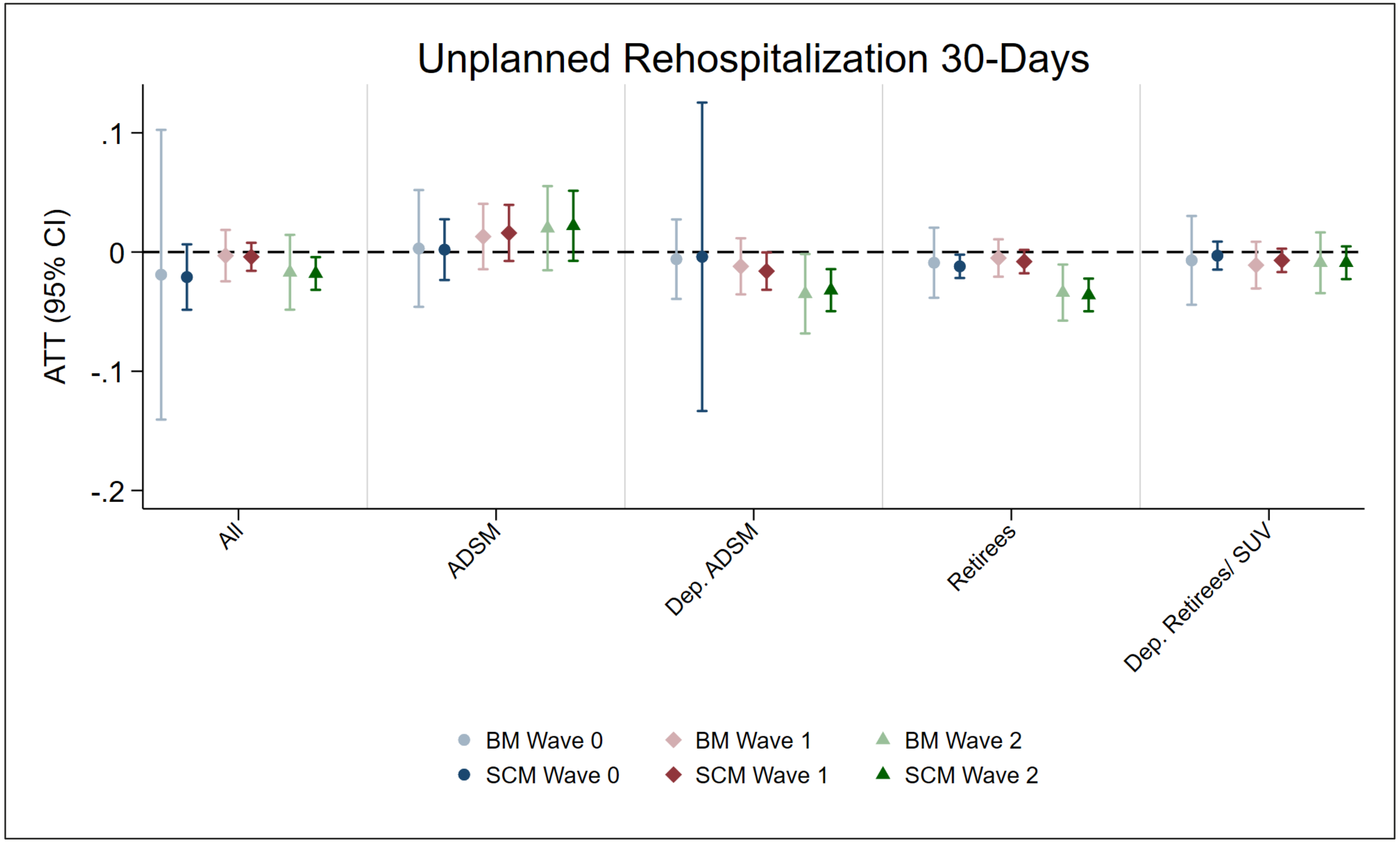

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FIGURE 11. ATT ON HOSPITAL ACQUIRED FALLS: BASELINE VS. SYNTHETIC CONTROLS BY WAVE

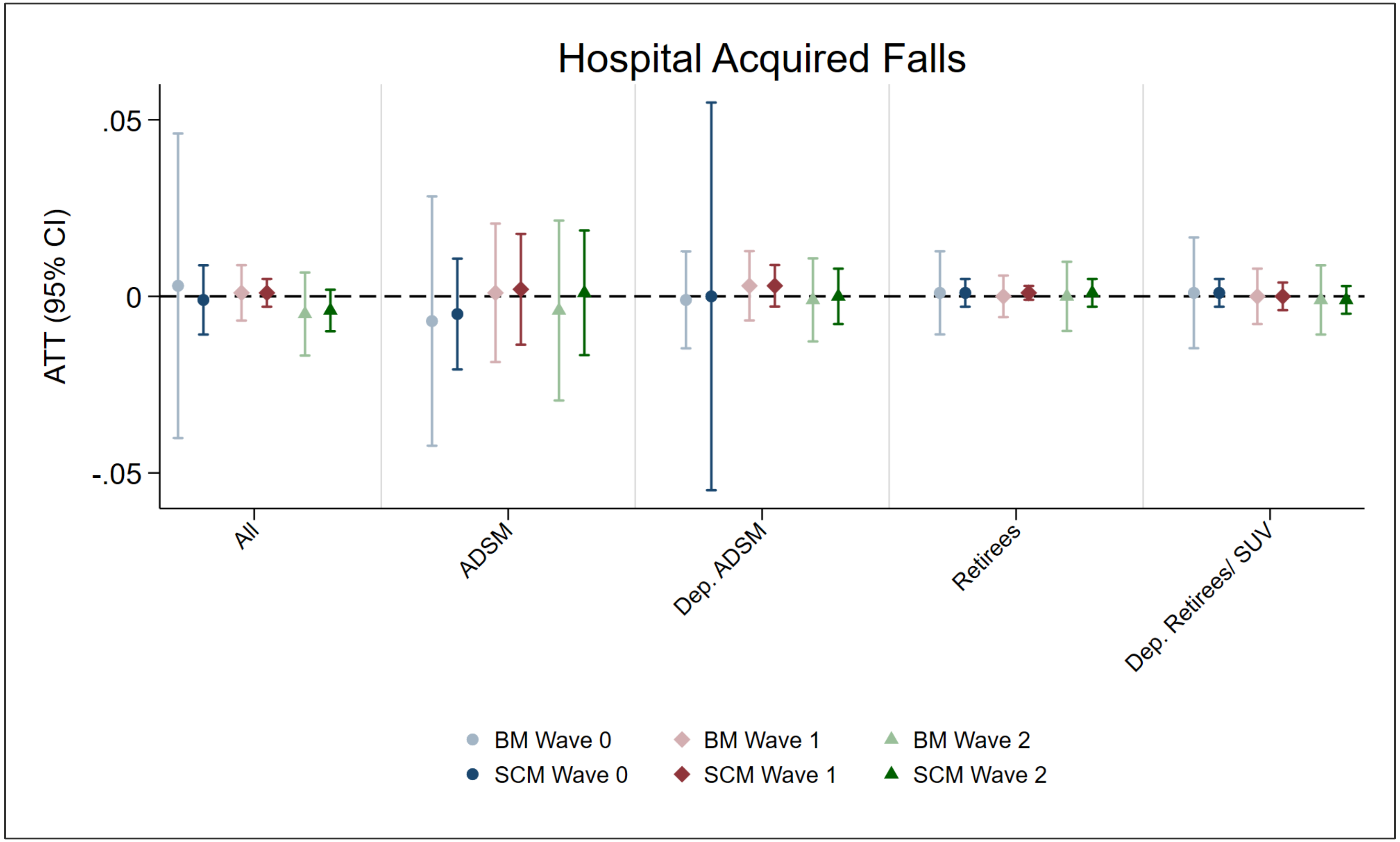

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FIGURE 12. ATT ON HOSPITAL ACQUIRED INFECTIONS: BASELINE VS. SYNTHETIC CONTROLS BY WAVE

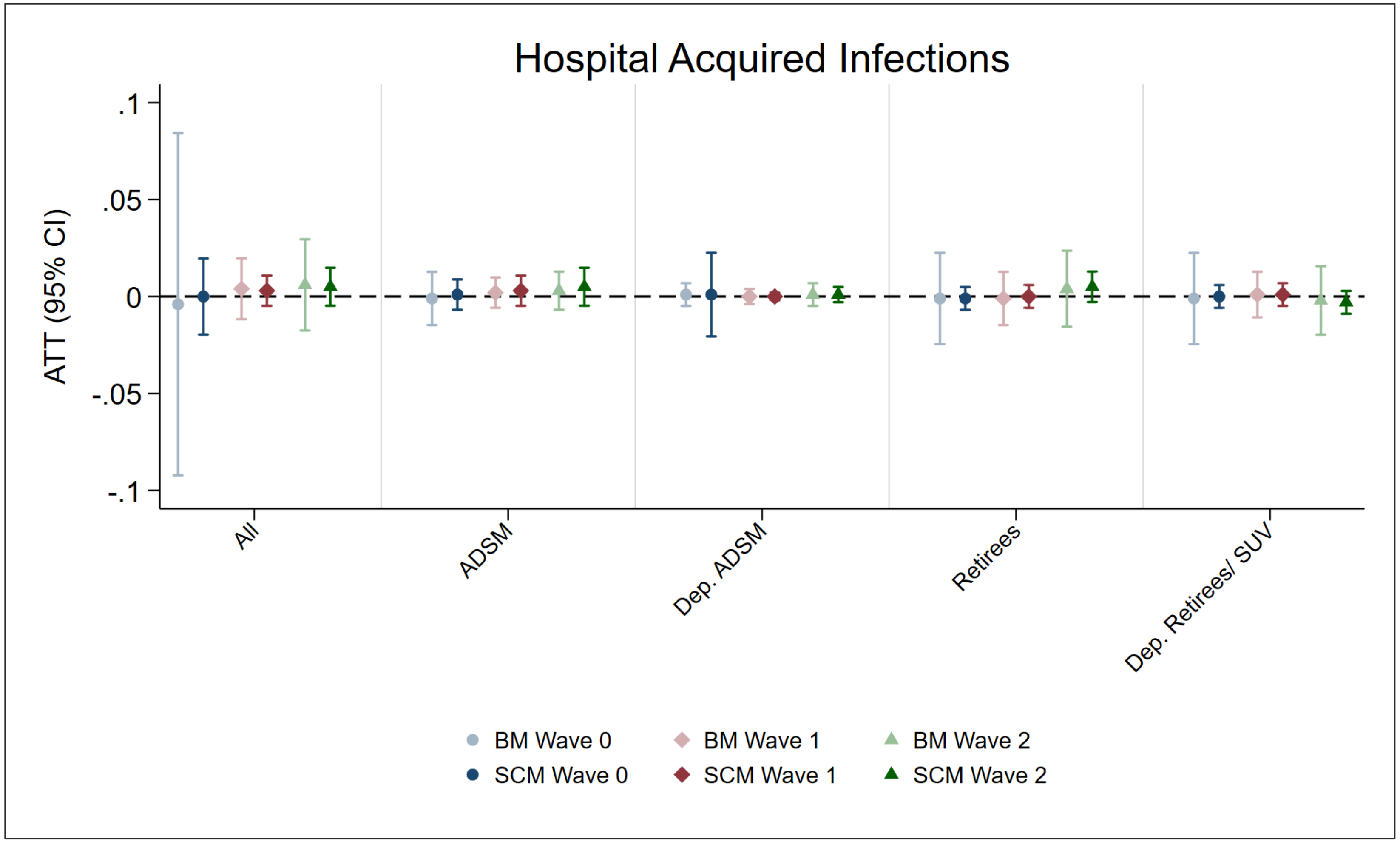
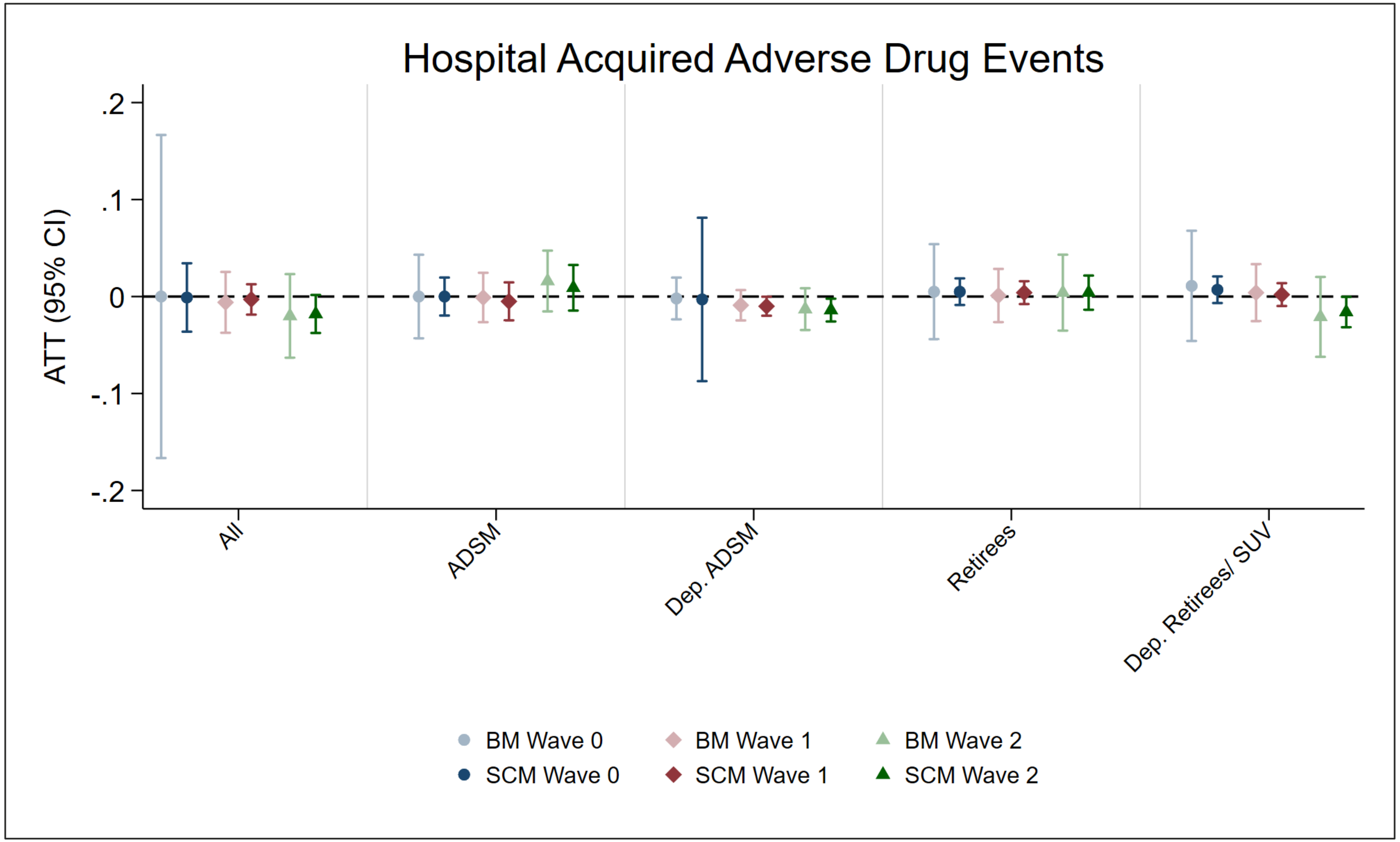


FIGURE 13. ATT ON HOSPITAL ACQUIRED ADVERSE DRUG EVENTS: BASELINE VS. SYNTHETIC CONTROLS BY WAVE



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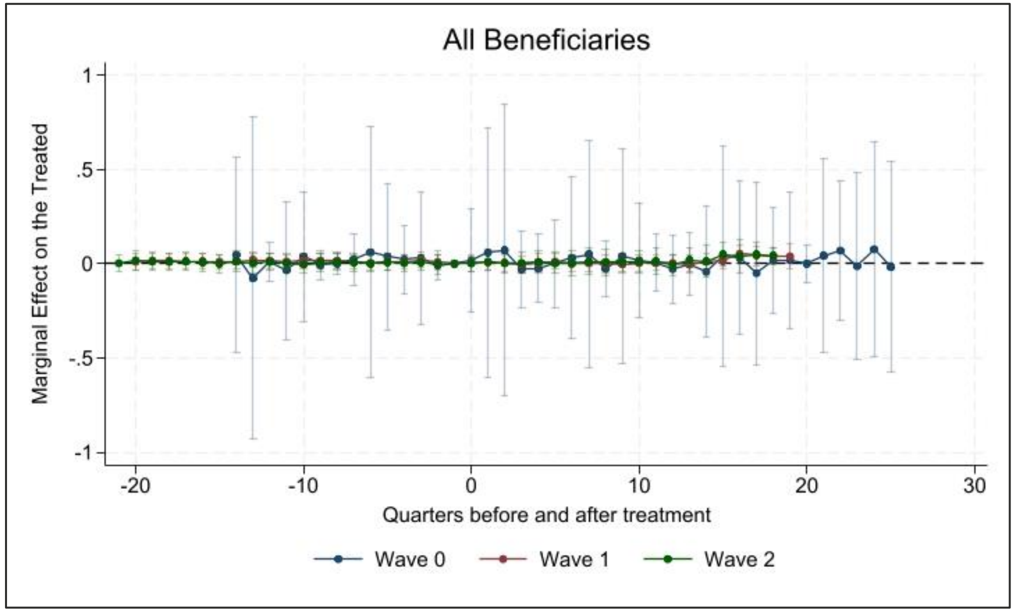
EVENT STUDY RESULTS

FIGURE 14A: EVENT STUDY ESTIMATES: 60-DAY MORTALITY – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



Synthetic Control

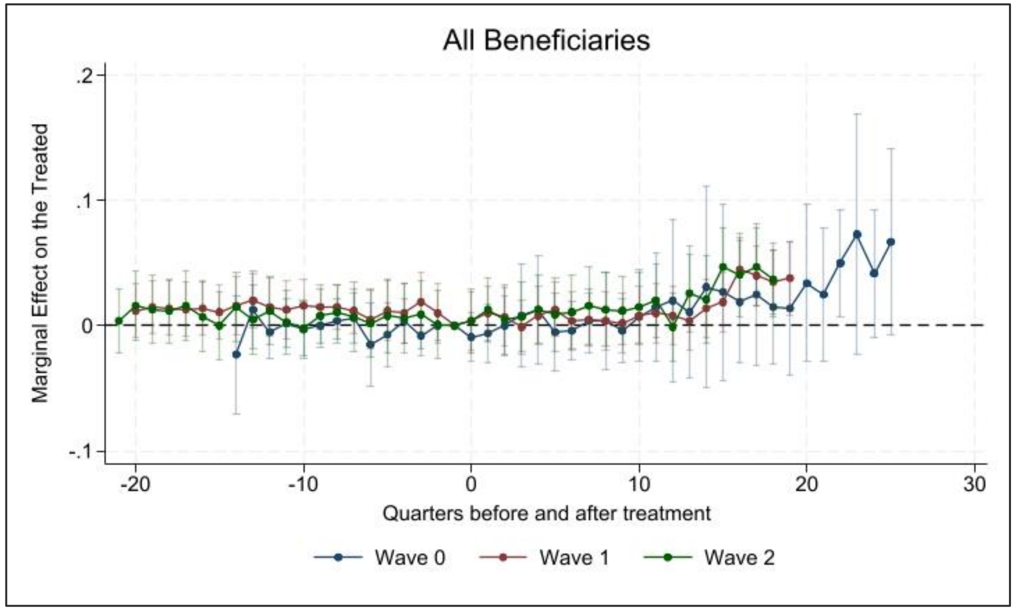


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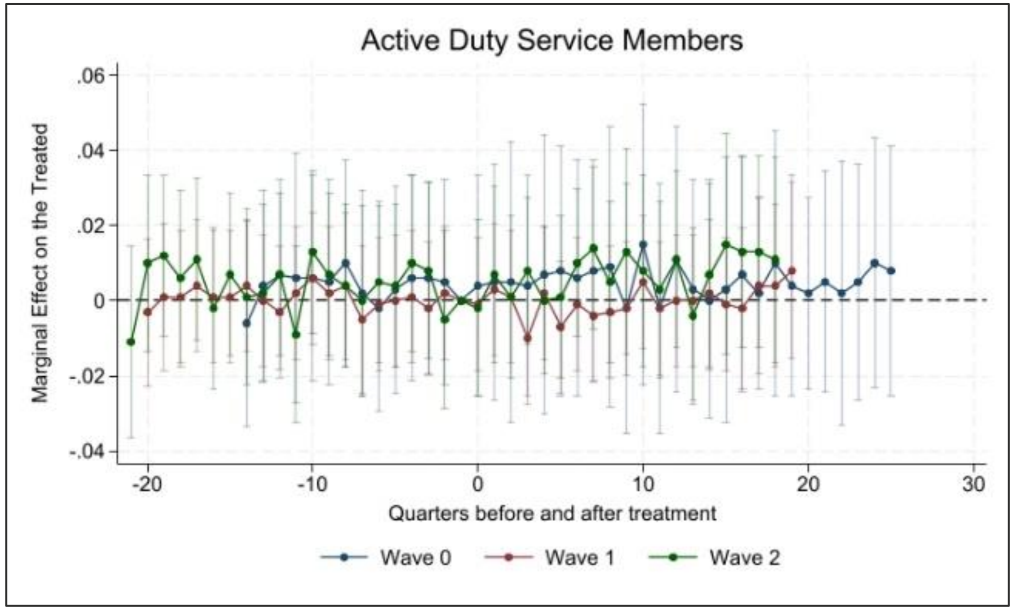
FIGURE 14B: EVENT STUDY ESTIMATES: 60-DAY MORTALITY: ADSM – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



Synthetic Control

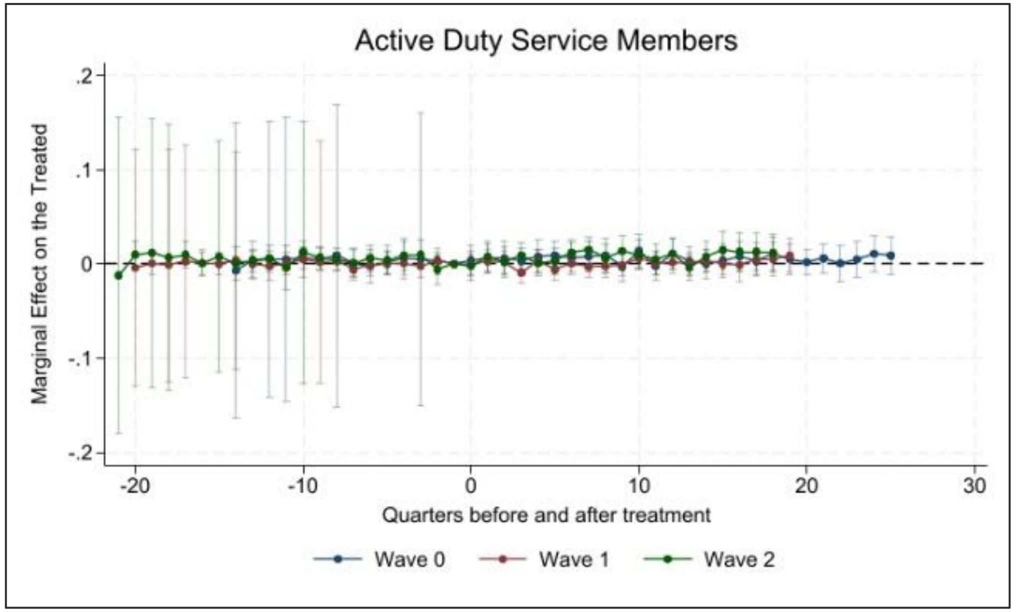
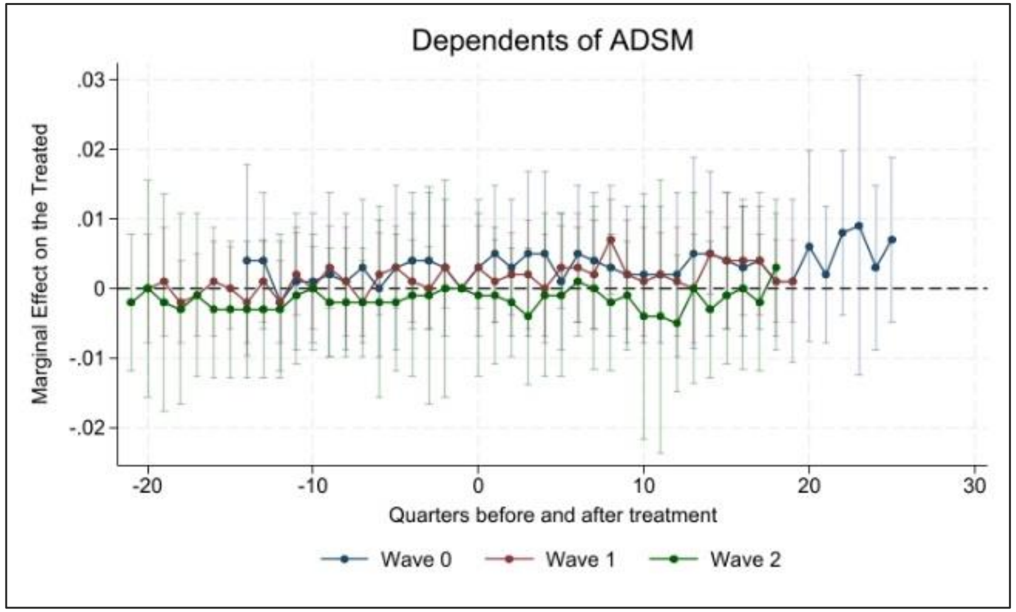


FIGURE 14C: EVENT STUDY ESTIMATES: 60-DAY MORTALITY: DEPENDENTS OF ADSM – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



Synthetic Control

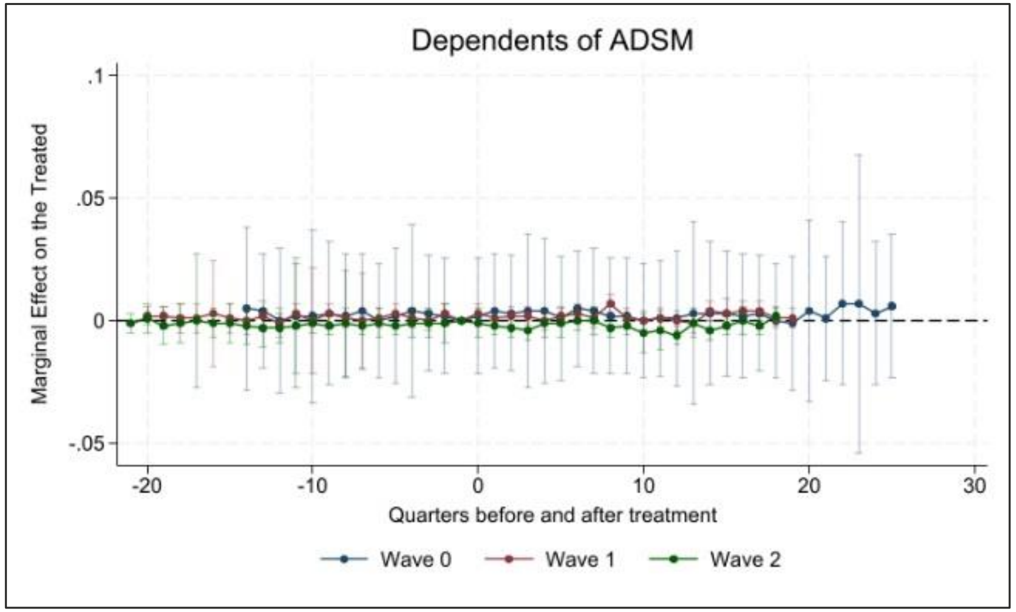


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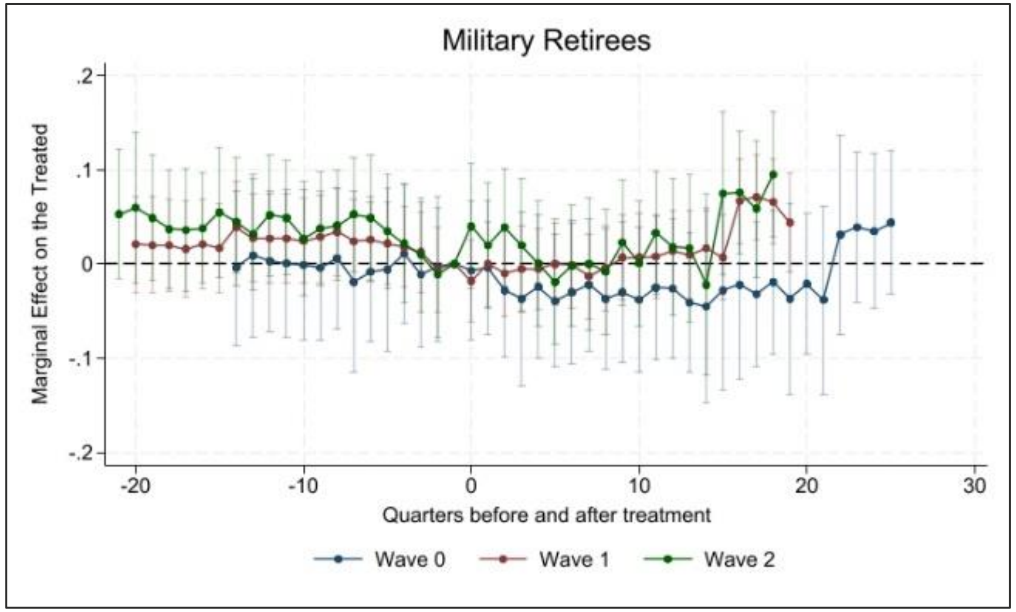
FIGURE 14D: EVENT STUDY ESTIMATES: 60-DAY MORTALITY: MILITARY RETIREES – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



Synthetic Control

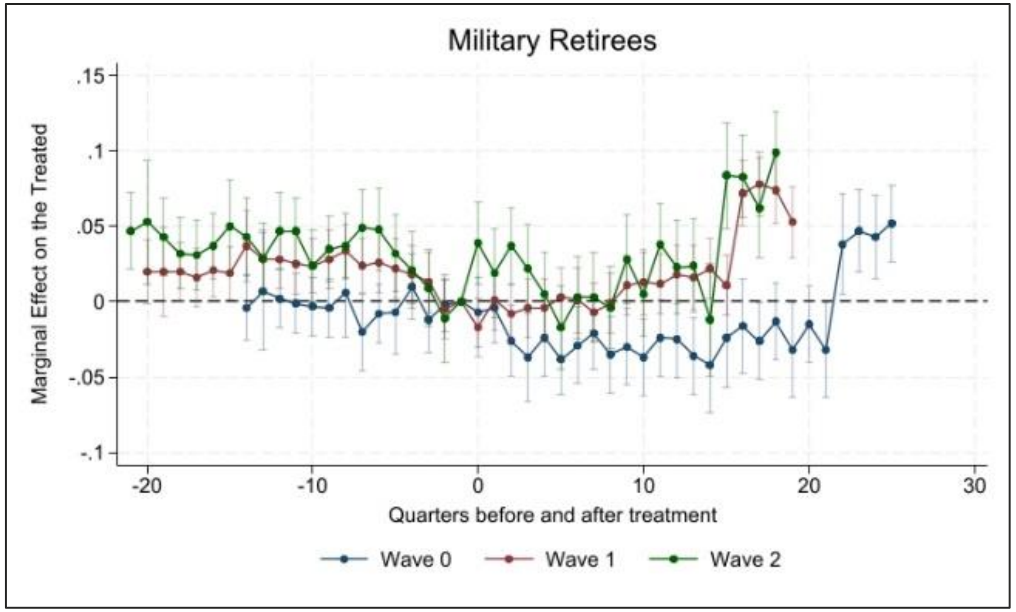


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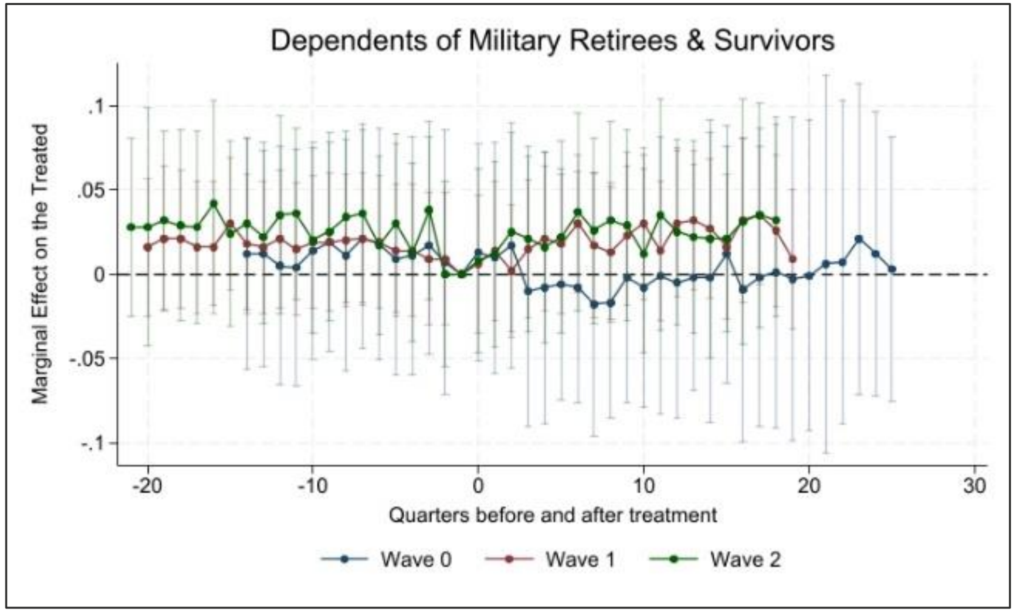
FIGURE 14E: EVENT STUDY ESTIMATES: 60-DAY MORTALITY: DEPENDENTS OF MILITARY RETIREES & SURVIVORS – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



Synthetic Control

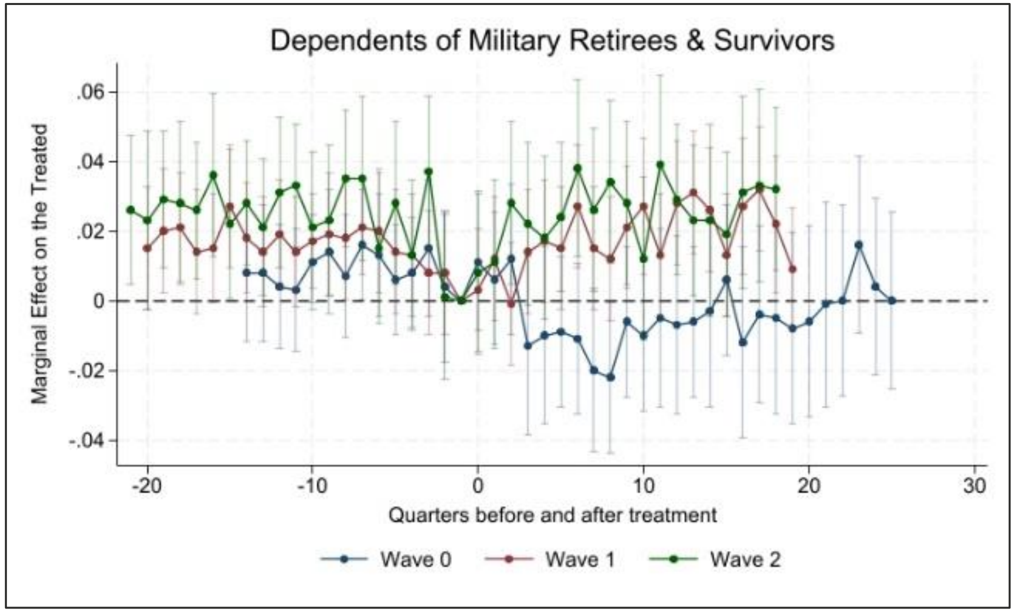


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Table 2. FLEX DID Model Estimates: Baseline vs SCM - Effects of Hospital Transition to DHA Management (All Beneficiaries)

	Baseline			SCM		
Outcome	Wave-0 Est (SE)	Wave-1 Est (SE)	Wave-2 Est (SE)	Wave-0 Est (SE)	Wave-1 Est (SE)	Wave-2 Est (SE)
All Beneficiaries						
30-Day Mortality	0.010 (0.084)	0.011 (0.015)	0.015 (0.022)	0.016 (0.018)	0.011 (0.008)	0.017 (0.010)
60-Day Mortality	0.014 (0.097)	0.013 (0.018)	0.016 (0.025)	0.018 (0.021)	0.014 (0.009)	0.019 (0.011)
Unplanned Rehospitalization 30-Days	-0.019 (0.062)	-0.003 (0.011)	-0.017 (0.016)	-0.021 (0.014)	-0.004 (0.006)	-0.018 (0.007)*
Hospital Acquired Falls	0.003 (0.022)	0.001 (0.004)	-0.005 (0.006)	-0.001 (0.005)	0.001 (0.002)	-0.004 (0.003)
Hospital Acquired Adverse Drug Events	0.000 (0.085)	-0.006 (0.016)	-0.020 (0.022)	-0.001 (0.018)	-0.003 (0.008)	-0.018 (0.010)
Hospital Acquired Infections	-0.004 (0.045)	0.004 (0.008)	0.006 (0.012)	-0.000 (0.010)	0.003 (0.004)	0.005 (0.005)

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Table 3. FLEX DID Model Estimates: Baseline vs SCM - Effects of Hospital Transition to DHA Management by Beneficiary Population

ADSM						
30-Day Mortality	0.006 (0.012)	0.002 (0.007)	0.002 (0.008)	0.007 (0.005)	0.003 (0.005)	0.003 (0.006)
60-Day Mortality	0.005 (0.012)	-0.000 (0.007)	0.007 (0.009)	0.006 (0.005)	0.001 (0.005)	0.008 (0.006)
Unplanned Rehospitalization 30-Days	0.003 (0.025)	0.013 (0.014)	0.020 (0.018)	0.002 (0.013)	0.016 (0.012)	0.022 (0.015)
Hospital Acquired Falls	-0.007 (0.018)	0.001 (0.010)	-0.004 (0.013)	-0.005 (0.008)	0.002 (0.008)	0.001 (0.009)
Hospital Acquired Adverse Drug Events	0.000 (0.022)	-0.001 (0.013)	0.016 (0.016)	-0.000 (0.010)	-0.005 (0.010)	0.009 (0.012)
Hospital Acquired Infections	-0.001 (0.007)	0.002 (0.004)	0.003 (0.005)	0.001 (0.004)	0.003 (0.004)	0.005 (0.005)
Dependents of ADSM						
30-Day Mortality	0.004 (0.003)	0.001 (0.002)	-0.001 (0.003)	0.003 (0.010)	0.001 (0.001)	-0.001 (0.001)
60-Day Mortality	0.004 (0.004)	0.002 (0.003)	-0.001 (0.004)	0.003 (0.013)	0.002 (0.002)	-0.002 (0.002)
Unplanned Rehospitalization 30-Days	-0.006 (0.017)	-0.012 (0.012)	-0.035 (0.017)*	-0.004 (0.066)	-0.016 (0.008)*	-0.032 (0.009)***
Hospital Acquired Falls	-0.001 (0.007)	0.003 (0.005)	-0.001 (0.006)	0.000 (0.028)	0.003 (0.003)	-0.000 (0.004)
Hospital Acquired Adverse Drug Events	-0.002 (0.011)	-0.009 (0.008)	-0.013 (0.011)	-0.003 (0.043)	-0.010 (0.005)*	-0.014 (0.006)*
Hospital Acquired Infections	0.001 (0.003)	0.000 (0.002)	0.001 (0.003)	0.001 (0.011)	0.000 (0.001)	0.001 (0.002)
Military Retirees						
30-Day Mortality	-0.013 (0.027)	0.008 (0.015)	0.021 (0.022)	-0.010 (0.007)	0.013 (0.007)*	0.024 (0.009)**
60-Day Mortality	-0.018 (0.030)	0.013 (0.017)	0.024 (0.024)	-0.015 (0.008)	0.017 (0.007)*	0.028 (0.010)**
Unplanned Rehospitalization 30-Days	-0.009 (0.015)	-0.005 (0.008)	-0.034 (0.012)**	-0.012 (0.005)*	-0.008 (0.005)	-0.036 (0.007)***
Hospital Acquired Falls	0.001 (0.006)	0.000 (0.003)	0.000 (0.005)	0.001 (0.002)	0.001 (0.001)	0.001 (0.002)
Hospital Acquired Adverse Drug Events	0.005 (0.025)	0.001 (0.014)	0.004 (0.020)	0.005 (0.007)	0.004 (0.006)	0.004 (0.009)
Hospital Acquired Infections	-0.001 (0.012)	-0.001 (0.007)	0.004 (0.010)	-0.001 (0.003)	-0.000 (0.003)	0.005 (0.004)
Dependents of Military Retirees and Survivors						
30-Day Mortality	0.004 (0.027)	0.014 (0.014)	0.016 (0.020)	0.001 (0.007)	0.013 (0.006)*	0.016 (0.008)*
60-Day Mortality	0.000 (0.031)	0.020 (0.016)	0.024 (0.022)	-0.004 (0.008)	0.018 (0.007)**	0.025 (0.009)**
Unplanned Rehospitalization 30-Days	-0.007 (0.019)	-0.011 (0.010)	-0.009 (0.013)	-0.003 (0.006)	-0.007 (0.005)	-0.009 (0.007)
Hospital Acquired Falls	0.001 (0.008)	0.000 (0.004)	-0.001 (0.005)	0.001 (0.002)	0.000 (0.002)	-0.001 (0.002)
Hospital Acquired Adverse Drug Events	0.011 (0.029)	0.004 (0.015)	-0.021 (0.021)	0.007 (0.007)	0.002 (0.006)	-0.016 (0.008)
Hospital Acquired Infections	-0.001 (0.012)	0.001 (0.006)	-0.002 (0.009)	-0.000 (0.003)	0.001 (0.003)	-0.003 (0.003)

Discussion/Conclusion

Mixed Effects on Quality and Safety Outcomes

Nuanced Cohort-Specific Impact (SCM estimates): Key clinical metrics (inpatient falls, infections) remain statistically null system-wide. However, SCM estimates reveal statistically significant **increases in 30- and 60-day mortality** during Wave 1 and Wave 2 for **Military Retirees** (Wave 2: **+2.4 percentage points** 30-day, **+2.8 percentage points** 60-day) and **Dependents of Military Retirees/Survivors** (Wave 2:**+1.6** percentage points 30-day, **+2.5 percentage** points 60-day).

Targeted Adverse Drug Event Reductions (SCM estimates): Dependents of ADSM experienced significant reductions in adverse drug events under SCM in Wave 1 (**-1.0 percentage points**) and Wave 2 (**-1.4 percentage points**).

Significant Rehospitalization Improvements

Strong Unplanned Rehospitalization Reduction: SCM estimates confirm a statistically significant reduction in 30-day unplanned rehospitalizations system-wide in Wave 2 (**-1.8 percentage points**, $p < 0.05$).

Focus Cohort & High-Value Impact: Reductions were strongest among **Dependents of ADSM** (**-3.2 percentage points** in Wave 2, $p < 0.001$) and **Military Retirees** (**-3.6 percentage points** in Wave 2, $p < 0.001$). This positive quality impact was most pronounced for high-utilization cohorts, contradicting null findings from many private sector mergers.

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Discussion/Conclusion

Beaulieu et al. (2020) Comparison

- **Nuanced Mortality Divergence:** While Beaulieu et al. (2020) reported null mortality impacts in private-sector hospital consolidations, MHS data reveals cohort-specific variation: mortality remained stable/null for active-duty populations, but increased modestly among military retirees and their dependents/survivors under SCM.
- **Transition Vulnerabilities Identified:** Indicates that while the administrative transition preserved safety for active force readiness, older/retiree populations may be more sensitive to system reorganization.

Divergent Positive Rehospitalization Effects

- **Overcoming Null Private Trends:** While private-sector consolidation typically shows no impact on rehospitalizations, MHS consolidation yielded highly significant reductions in 30-day unplanned rehospitalizations in Wave 2 across the overall population (−1.8 percentage points) and key high-utilization groups (−3.2 to −3.6 percentage points).
- **Integrated Advantage:** This divergence suggests that a single administrative authority (DHA) can leverage unified system-wide protocols to coordinate care transitions more effectively than fragmented private sector mergers.

EHR Rollout Confounders

The phased implementation of the unified electronic health record system, **MHS GENESIS**, occurred concurrently with the administrative waves, posing potential confounding effects on quality metrics.

Implications

Senior Leaders in DHA/MHS should emphasize the following through interventions:

- Reductions in care fragmentation, redundancies, and multiple handoffs
- Improve communication and coordination across settings
- Ensure continuity of care, especially for relocated military and civilian patients

Providers need to

- Optimize the use of evidence-based treatment to improve outcomes
- Focus on "recapturing" to increase volumes in some of the facilities

Researchers need

- A better understanding of the mechanisms through which "consolidation" effects quality and safety outcomes
- Account for issues of sample selection between direct care facilities and purchased care facilities

Researchers

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So What?

Supports MHS Stabilization Priorities

The observed reduction in Wave 2 30-day unplanned rehospitalizations aligns with the goals of the December 2023 Deputy Secretary of Defense memorandum to the Military Health System. Centralizing hospital management under the DHA establishes a more standardized and predictable healthcare delivery framework, which directly addresses quality and patient safety.

Foundation for Reattracting Beneficiaries

This demonstration of stable or improving quality metrics is essential to the MHS goal of *'reattracting at least 7% of available care from the private sector back to MTFs'*. Reducing readmission rates enhances patient trust, ensuring military hospitals provide a safe, competitive option for retirees and military families who had previously migrated to private sector care due to historical staffing volatility.

Sustains Operational and Clinical Readiness

Mitigating readmission and care transition gaps creates more stable capacity within MTFs. This, in turn, optimizes the clinical workload required for providers to maintain complex medical skills, directly advancing the broader mission of generating 'medically ready and ready "medical forces'.

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Thank You!

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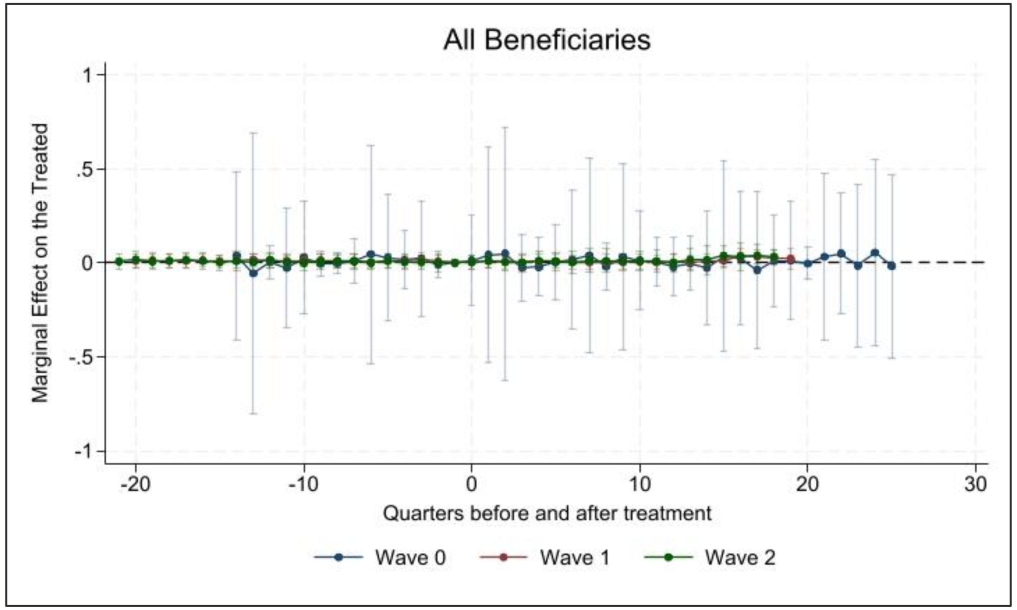
ADDITIONAL SLIDES

FIGURE 15: EVENT STUDY ESTIMATES: 30-DAY MORTALITY – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



Synthetic Control

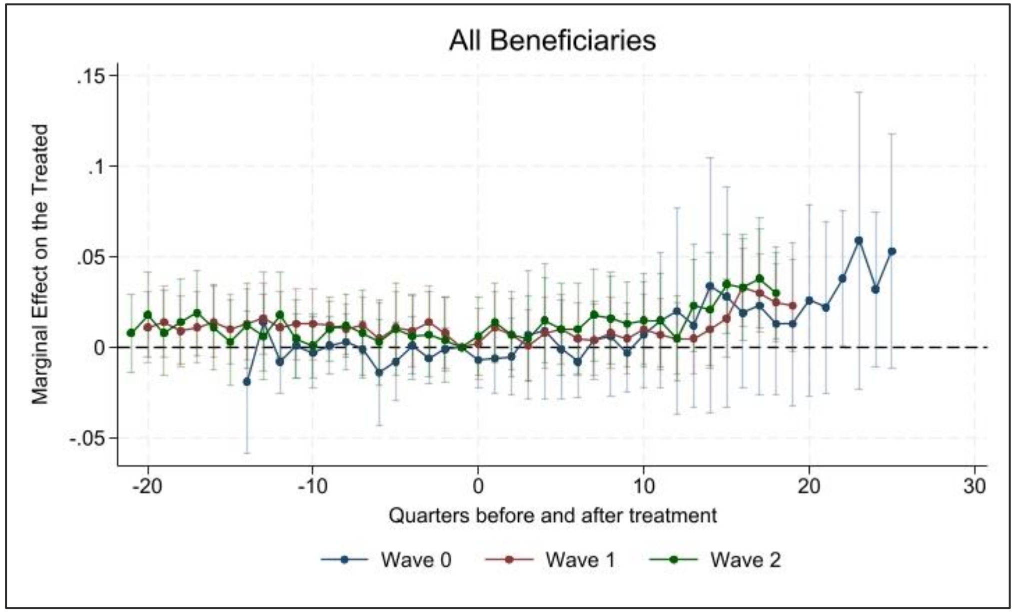


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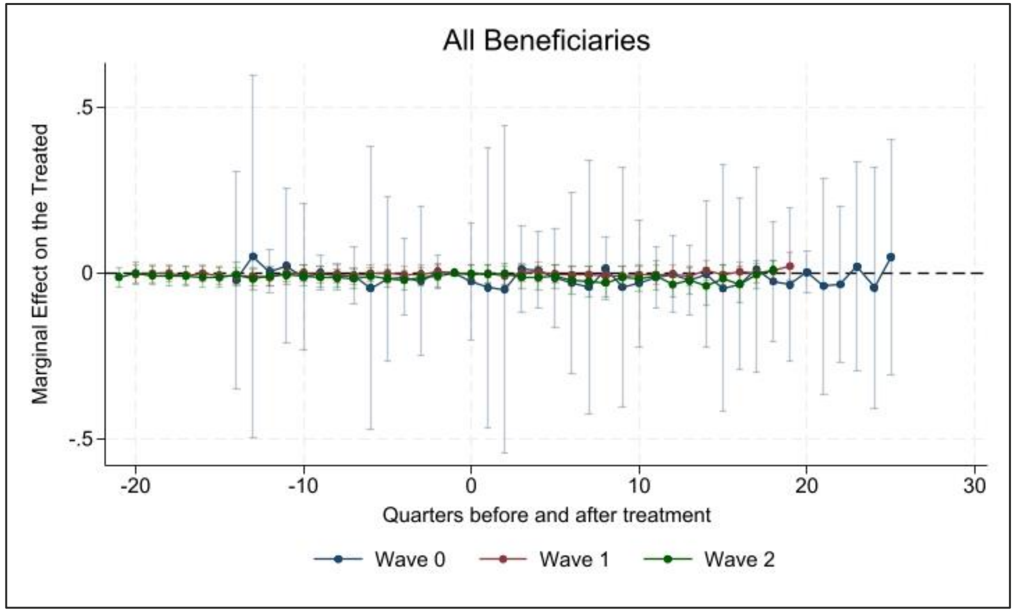
FIGURE 16: EVENT STUDY ESTIMATES: UNPLANNED REHOSPITALIZATION – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



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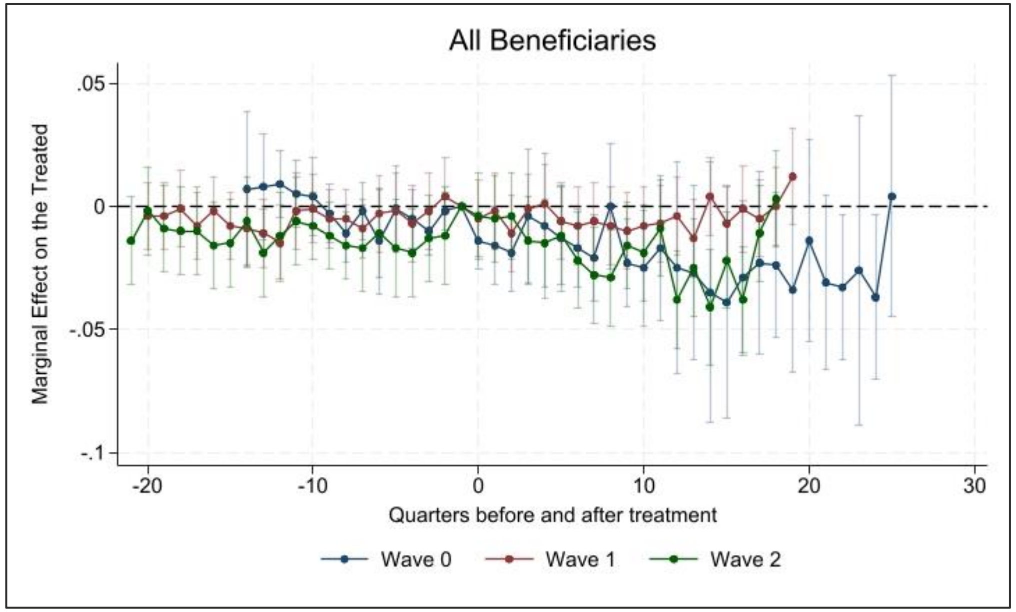

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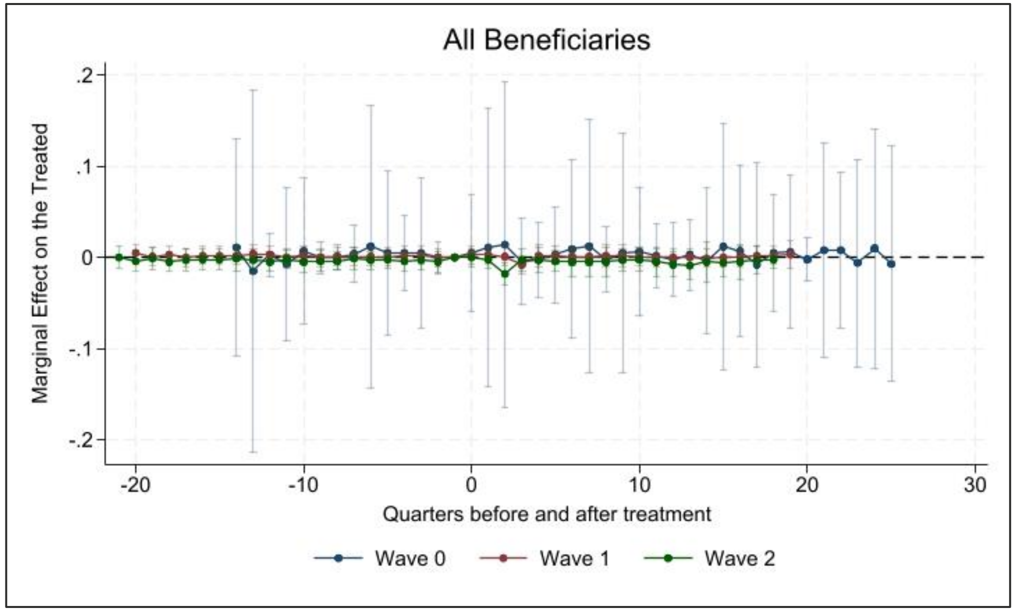
FIGURE 17: EVENT STUDY ESTIMATES: INPATIENT FALLS – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



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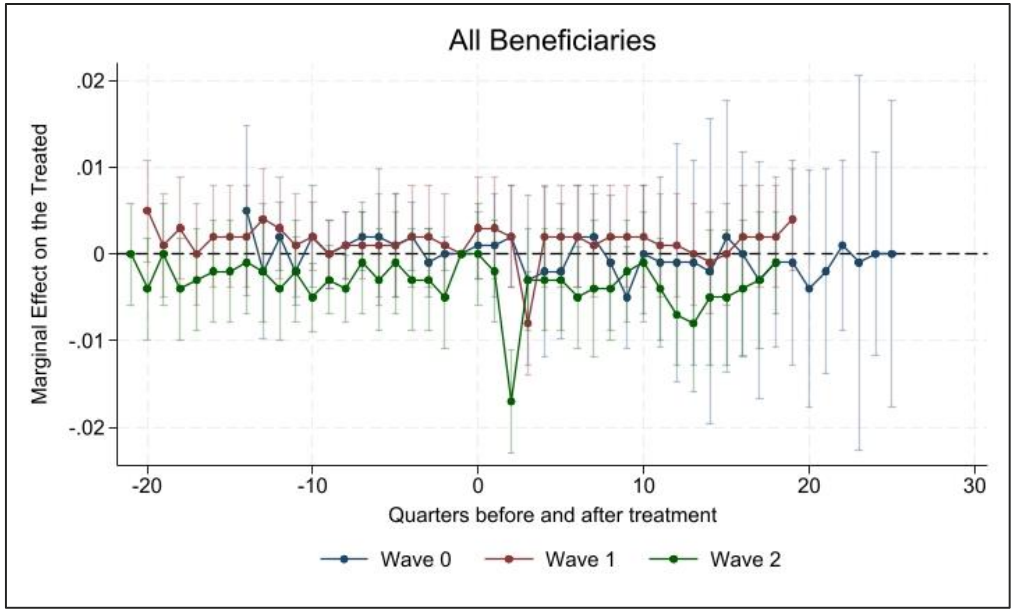

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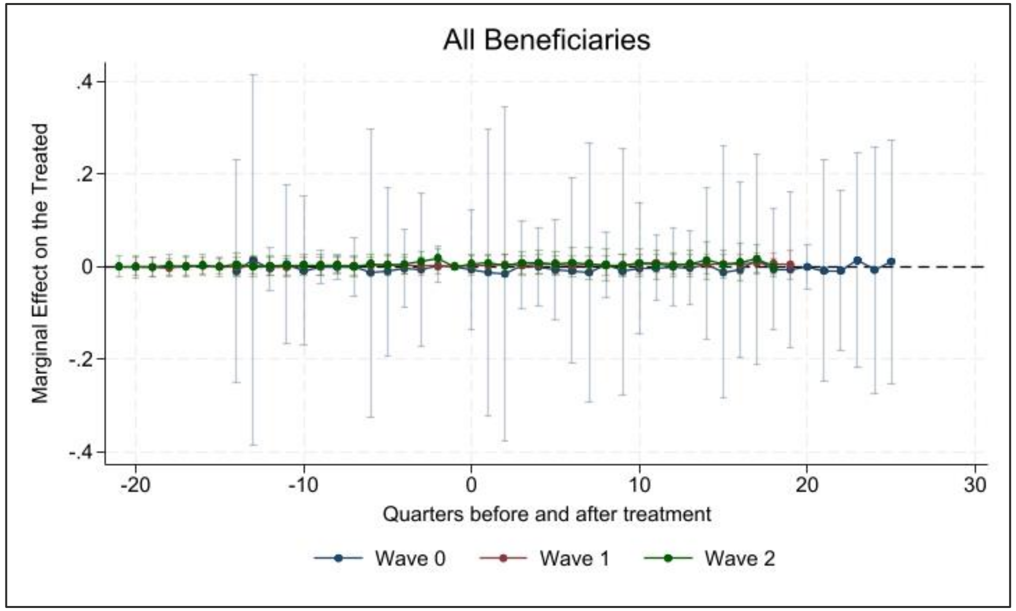
FIGURE 18: EVENT STUDY ESTIMATES: HOSPITAL-ACQUIRED INFECTIONS – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



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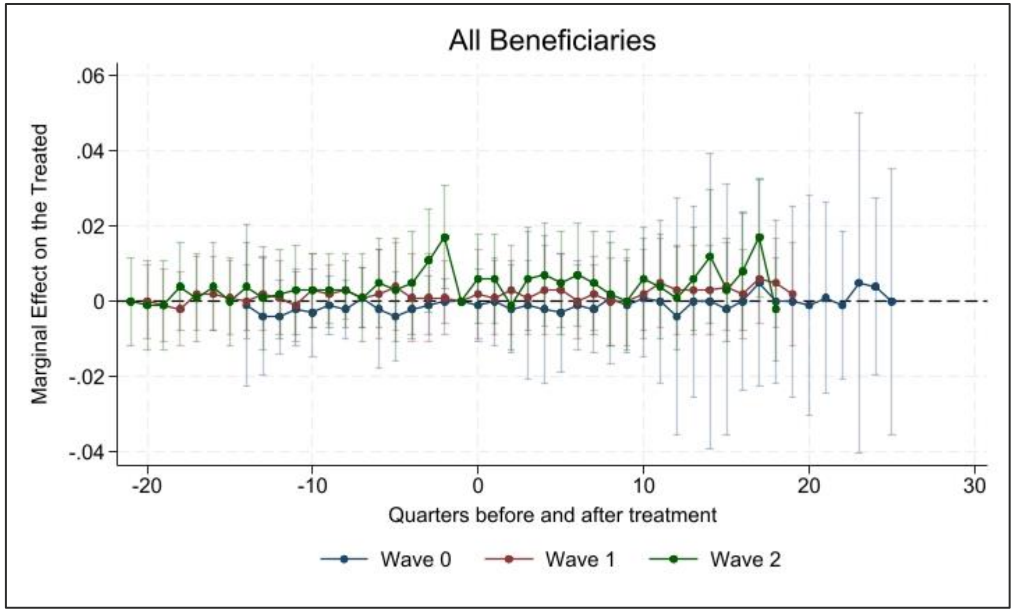

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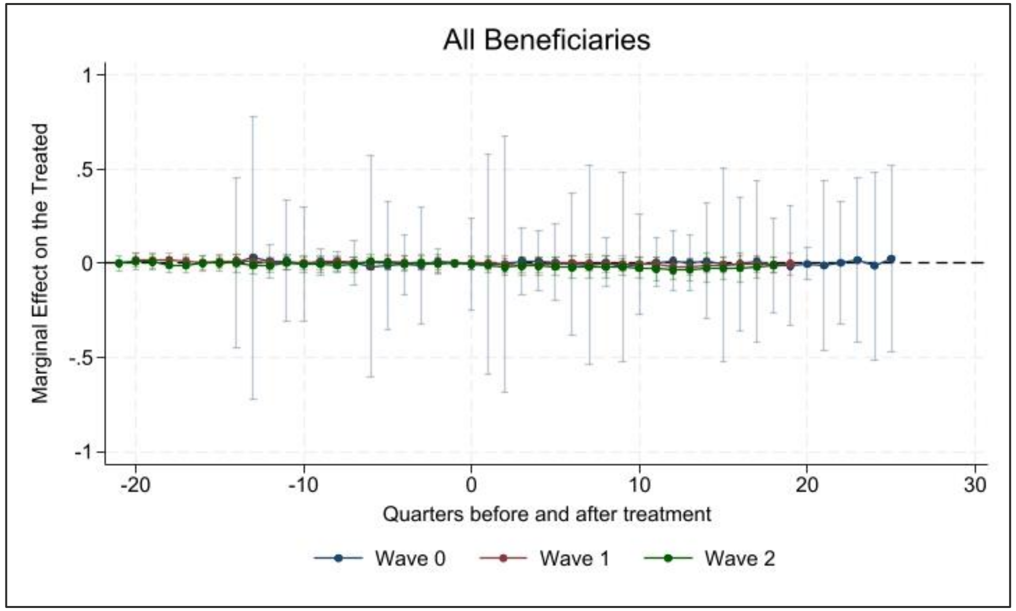
FIGURE 19: EVENT STUDY ESTIMATES: HOSPITAL-ACQUIRED ADVERSE DRUG EVENTS – BASELINE AND SYNTHETIC CONTROL MODELS

Baseline



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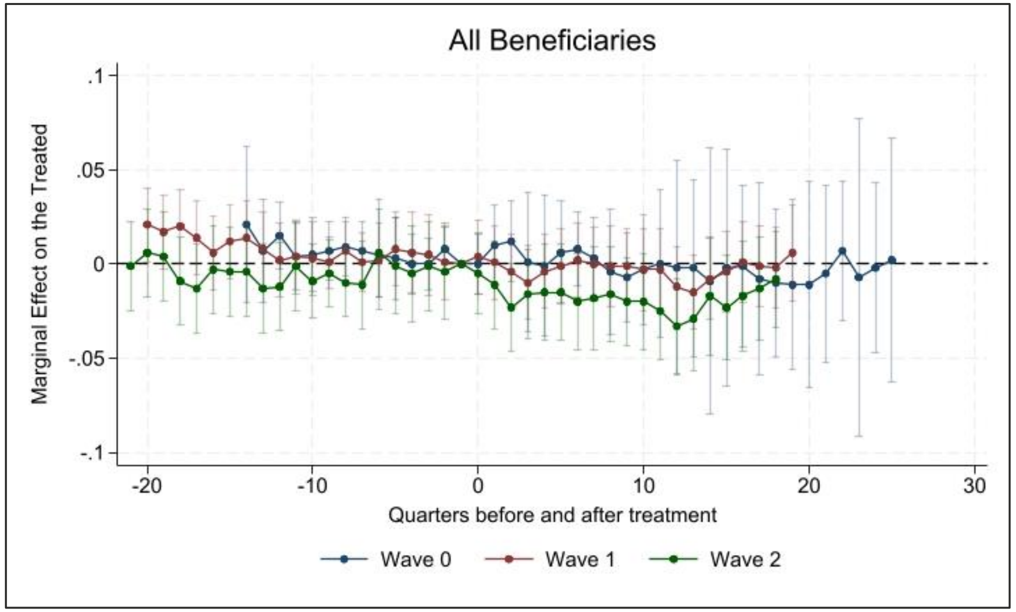

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