Supplementary Online Content

Wilcock AD, Barnett ML, McWilliams JM, Grabowski DC, Mehrotra A. Hospital responses to incentives in episode-based payment for joint surgery: a controlled population-based study. *JAMA Intern Med*. Published online May 17, 2021. doi:10.1001/jamainternmed.2021.1897

This supplementary material has been provided by the authors to give readers additional information about their work.

Abbreviations used in Supplement

BPCI	Bundled Payments for Care Improvement
CJR	Comprehensive Care for Joint Replacement Model
CMS	Center for Medicare and Medicaid Services
DRG	Diagnosis related group
ED	Emergency department
HHA	Home health agency
ICD-9 or ICD-10	International Statistical Classification of Diseases and Related Health Problems, revision 9 or 10
IRF	Inpatient rehabilitation facility
LEJR	Lower extremity joint replacement
MSA	Metropolitan statistical area
PAC	Post-acute care
SNF	Skilled nursing facility

eMethods 1. CJR Program and Impact on Study Design

Randomization and Study Weights

The original CMS experiment randomized 196 eligible Metropolitan Statistical Areas (MSAs) to either CJR (75 treatment MSAs) or to no payment change (121 control MSAs). Selection into each group was random within 8 strata defined by below or above median population size (98 below, 98 above) and by historic LEJR episode spending (49 MSAs per quartile).

However there was not an equal number of MSAs selected for treatment vs. control. CMS intended that CJR would make up 38.3% (75/196) of the total number of eligible MSAs; yet, they also decided to select more CJR MSAs from historically higher cost strata. **eMethods Table A** shows the selection probabilities CMS used for CJR and control MSAs out of the 8 strata.

eMethods Table A: Probabilities Used by CMS to Select CJR MSAs

		Historic Spending Quartile (lowest cost) Qrt 1	Qrt 2	Qrt 3	(highest cost) Qrt 4	Total
Below Median Population	CJR	.30	.35	.40	.45	98
	Control	.70	.65	.60	.55	
Above Median Population	CJR	.30	.35	.40	.45	98
	Control	.70	.65	.60	.55	
	Total	49	49	49	49	196

As we did in prior work[1], to account for the varying probabilities of treatment assignment, we produced standardizing weights to weight episodes, hospitals and MSAs such that the probability of treatment or control MSAs being selected are equal within each stratum (i.e. analogous to "direct standardization"). We did this to improve baseline balance and minimize regression to the mean. The weights were chosen to match each stratum to the treatment/control probability of the entire sample.

The assignment probabilities and weights used are summarized in **eMethods Table B**. Among the 196 MSAs eligible for CJR, 38.3% (75 MSAs) were initially randomized to be in the treatment group and 61.7% (121 MSAs) were in the control group. This probability varied by MSA randomization stratum: for example, 30.3% of MSAs in Stratum 1 below were in the treatment group, whereas 44.0% were in the treatment group for Stratum 8. The treatment and control weights were derived to equalize the probability for each stratum to match the whole sample, with 38.3% of MSAs in the treatment group and 61.7% in the control group.

[1] Barnett ML, Wilcock A, McWilliams JM, et al. Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement. N Engl J Med 2019;380(3):252–62.

Table B: Derivation of Standardizing Weights for Treatment and Control Episodes

Stratum	Payment Quartile	Above/Below Median Population	Initial Treatment MSAs	Control MSAs	Treatment Probability	Control Probability	Treatment Weight (Overall Prob/Stratum Prob)	Control Weight (Overall Prob/Stratum Prob)
Overall	**-**	**-**	**75**	**121**	**0.383**	**0.617**	**-**	**-**
1	1 (low)	Below	10	23	0.303	0.697	1.263	0.886
2	1 (low)	Above	5	11	0.313	0.688	1.224	0.898
3	2	Below	7	12	0.368	0.632	1.039	0.977
4	2	Above	11	19	0.367	0.633	1.044	0.975
5	3	Below	9	13	0.409	0.591	0.935	1.045
6	3	Above	11	16	0.407	0.593	0.939	1.042
7	4 (high)	Below	11	13	0.458	0.542	0.835	1.140
8	4 (high)	Above	11	14	0.440	0.560	0.870	1.102

Post-Randomization Eligibility Adjustment

Post-randomization of the 196 MSAs into CJR and control, but before the start of the program, CMS found that some MSAs had additional BPCI participation making them ineligible for participation in the program. After removing these MSAs, there remained 171 MSAs: 67 selected to participate in CJR, and 104 selected for no payment change.

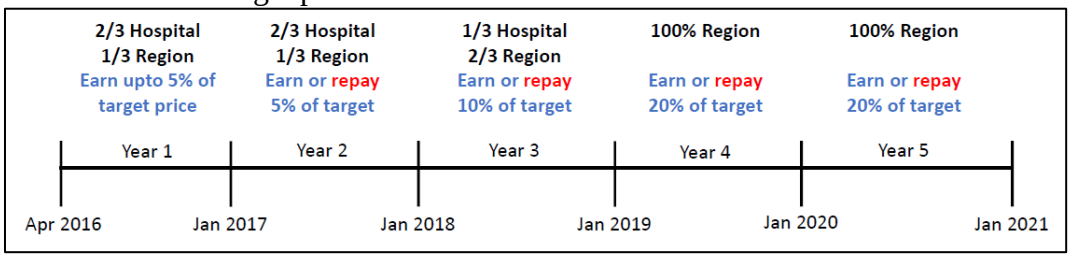
In this study we evaluated hospital responses in the 171 MSAs ultimately considered eligible for the CJR program, and in our analyses we continued to employ the standardizing weights described above to account for the original varying probability of assignment into CJR and control across the 8 strata.

Evolution of Hospital Target Prices

CJR was originally designed as a 5-year program. Hospitals participating in CJR are provided prospective episode target prices for each DRG 469/470 with and without fracture. The target prices are based on 3 years of historical episode spending with a two/three year lag, for example the target prices used in 2016 were based on episode spending from 2012-2014. Targets are updated every two years, which means that the target prices for performance years 1 & 2 (2016-17) were based on historical spending from 2012-14, performance years 3 & 4 (2018-19) were based on historical spending from 2014-16, and performance year 5 (2020) on 2016-2018.

Over the first three years a hospital's target prices were a blend of its own historical spending and the average of all hospital spending in their region. Regions are the 9 census divisions.

Figure A: Evolution of target prices and bonus in CJR



As shown in **Figure A**, targets were 2/3 own historical spending and 1/3 regional in years 1 & 2, then 2/3 regional and 1/3 own in year 3. Starting in year 4 the targets became 100% based on episode spending from a hospital's region.

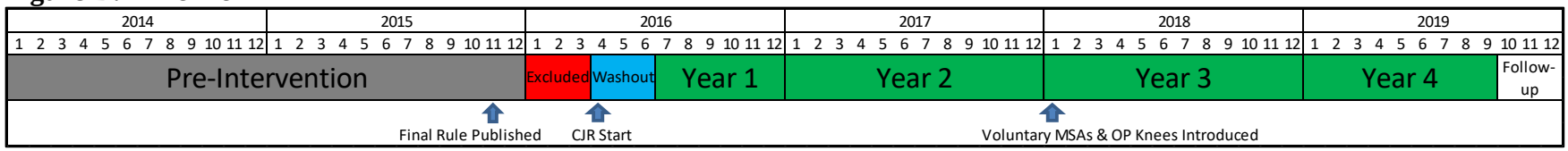
Likewise, bonus and penalties were phased in over time. Initially CJR was bonus only, where hospitals with episode spending below their target price (and meeting minimum quality standards) could earn up to 5% of their target price back as a bonus payment. Starting in year 2 hospitals with episode spending above their target price could be responsible for paying up to 5% of their target price as a penalty. Bonus and penalty percentages increased to 10% in year 3, then 20% in year 4 and after.

Timeline of CJR and Policy Changes

CJR rules and program participation were finalized in November 2015. The program started on April 1 2016 and the original program rules were followed through the end of performance year 2.

Two changes to the original program design were implmeented in January 2018. New rules were finalized the month before allowing hospitals in the 33 lowest cost (historically) CJR MSAs to drop out of the program (details below). Also, for the first time, total knee replacement could be performed in the outpatient setting (**eMethods Figure B**).

Figure B: Timeline



We defined the pre-period for our analysis as the 2 calendar years before the start of the CJR program, 2014-2015. As we did in our prior evaluation,[2] we excluded the first 2 quarters of 2016 from our analysis as a washout period to allow time for hospitals to respond to program rules. In our analyses, episodes are defined by the calendar year in which they started.[3] Year 1 included episodes starting from July 1 2016 through December 31 2016. In year 4 (2019) we only included episodes starting between January 1 2019 through September 2019. We only had data through the end of 2019 and episodes that started after September 2019 were not included in our analysis because 2020 data was not available.

[2] Barnett ML, Wilcock A, McWilliams JM, et al. Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement. N Engl J Med 2019;380(3):252–62.
[3] In the CJR program "program years" are technically defined by when the 90-day episode period ends. For example, 2017 would include episodes that start in October 2016 through September 2017. We chose to analyze episodes by when they started as we felt this was more intuitive for the reader and policy changes impact clinical care primarily at the beginning of the episode.

Evolution of Participation and Creation of Our Mandatory and Voluntary MSA Cohorts

As described above, 171 MSAs were ultimately considered eligible for CJR, with 67 selected to participate in CJR and 104 selected for no payment change (**eFigure 1).** Of the 171 MSAs, 86 of these MSAs came from the two low-cost quartiles of spending and 85 were from the two high-cost quartiles. Of the 67 MSAs selected to be in the program, 38 came from the two high-cost strata and 29 came from the low-cost quartiles.

In year 3 of the program, mandatory participation in CJR was continued only in high-cost quartiles. However, in another complexity, voluntary participation was also allowed in 4 MSA (28140, 30700, 34940, and 34980) that came from the high-cost quartiles.

To maintain the original randomization, in our analysis we divided MSAs into "voluntary" and "mandatory" based on whether the MSA was originally in one of the low-cost quartiles (voluntary) or one of the high-cost quartiles (mandatory). This allowed us to preserve the original set of MSAs selected for CJR or control from each strata and the experimental design CMS originally used; however, by doing so, hospitals in 4/38 MSAs we label as "mandatory" MSAs were allowed to drop from the program starting in year 3. This introduces some measurement error on the hospital responses we study in this paper, but we believe this only makes our estimates slightly conservative while allowing us the benefit of retaining the original experimental design.

eMethods 2. Details on Other Methods, Outcome Definitions and Model Specifications

Exclusions Used to Create Final Analytic Sample

There were 1.99 million LEJRs delivered to the traditional Medicare population in the 171 study MSAs over the period January 2014 through September 2019. We excluded 657,243 (33%) episodes from our analysis. As shown in **eFigure 2**, we excluded "overlaps" (more than 1 LEJR procedure in episode), episodes for beneficiaries that were not continuously enrolled in Medicare parts A and B in the year before their admission or in the 90 days after their discharge (or until death, whichever came first), episodes for patients enrolled in Medicare under end stage renal disease, and episodes delivered in hospitals that ever participated in the original BPCI initiative (models 1, 2 or 4) for LEJR.

Outcome Definitions

Primary outcomes in this paper include "institutional spending" and spending risk. Our measure of spending risk was in terms of "total spending". We define each of these outcomes below.

Institutional Spending

Our measure of "institutional spending" includes all spending except for what is included in the Medicare "Carrier" and "Part D" files. Inpatient, post-acute care and outpatient facility spending (e.g. payments to a hospital for an outpatient visit) comprise the vast majority of our "institutional" spending outcome, with DME being the one major exception to the "institutional" label. We chose the term "institutional spending" because it is the term used by Medicare and best encompassed non-clinician (Part B spending in CMS' Carrier file), non-pharmaceutical billing (spending included in CMS' Part D).

We chose institutional spending as a primary outcome because it makes up approximately 85% of all spending in LEJR episodes, it is the component of spending where prior LEJR bundled payment demonstrations have shown savings, and non-institutional spending (payments to physicians and other providers, ambulance, independent laboratories) was only available for a 20% random sample of Medicare beneficiaries, precluding estimation of total spending for the 100% sample of LEJR episodes without imputation or extrapolation. Summary details of the differences between institutional vs. total spending (a measure that would include claims from the 20% sample of Part B Carrier claims) are shown in **eMethods Table C** below.

To measure institutional spending, we did the following:

- Included the full unadjusted payments (spending) to institutional providers (including Medicare, patient and primary payer portions) that include common CMS adjustments such as wage index.
- Spending was pro-rated based on the percentage of days occurring within the episode, for example if a HHA service begins 86 days post discharge (i.e. 5 days left in the episode) and lasts 20 days, 5/20 or 25% of the HHA payment will be attributed to the LEJR episode.

- In the episode reconciliation process, CMS removes LEJR "unrelated" costs from calculated episode costs (see CMS website for more documentation, https://innovation.cms.gov/Files/worksheets/ccjr-exclusions.xlsx; Accessed June 20, 2018). We are not applying these exclusions to capture a broader picture of total institutional spending per episode.

Total Spending

Total spending included all of the components of institutional spending above plus Medicare Part B spending which incorporates spending on physicians and other providers for inpatient and outpatient services, independent clinical laboratories, ambulance providers and free-standing ambulatory surgical centers. Our data sample only has Part B claims for a 20% random sample. Our measure of total spending does not include Part D or pharmaceutical spending. Total spending was used to define our spending risk measure, which is explained in more detail below.

Table C: Explanation of Measures of Institutional vs. Total Spending

Primary Outcome: Institutional spending	**Total spending**
Payments to… • hospitals for inpatient admission or readmission • home health, skilled nursing facilities, hospice and inpatient rehabilitation • hospitals for outpatient hospital services (office visits, radiology, laboratory testing) • vendors for durable medical equipment Includes all Part A Medicare spending and some part B spending (e.g., home health services paid under Part B)	Institutional spending plus payments to… • physicians and other providers for inpatient and outpatient services • independent clinical laboratories • ambulance providers • free-standing ambulatory surgical centers Adds remainder of Part B Medicare spending. This does not include Part D or pharmaceutical spending.

Spending Risk

We defined a prognostic score for episode spending ("spending risk") by counting up expected spending associated with each episode characteristic. Expectations were the product of having a given characteristic and that characteristics' coefficient from a linear regression model of total spending fitted on a sample of 2013-2014 Medicare administrative claims data. The episodes used to fit this model were identified using the same exclusion criteria as our main analytic sample; however, they were limited to the 20% sample for which we had Carrier claims and episode total spending. We chose the 2013-4 year period as it was prior to our study period and therefore not impacted by the CJR program.

Model specification was the following:

$$TotalSpending_i = \beta_0 + X_i\tau + \varepsilon_i$$

- $TotalSpending_i$ is patient i's total episode spending
- β_0 is a constant
- ε_i is random error
- X_i are beneficiary demographics, including:
    - Age indicators (<65, 65 to 69, 70 to 74, 75 to 79, 80 to 84, 85 to 89, and 90+)
    - Female indicator
    - Race indicators (white, black, Asian, other, Hispanic)
    - Medicaid eligibility status (dual eligible or not)
    - Original entitlement reason indicators (age 65+, disability or end-stage renal disease)
    - Metro residence indicator set equal to 1 if the bene's Zip code is located within Rural-Urban Commuting Area (RUCAs) 1-3 (i.e., metropolitan area), and 0 otherwise
        - For 0.16% of beneficiaries with missing RUCA, we used a missing RUCA indicator set equal to one if the bene's Zip code did not have RUCA, and 0 otherwise
    - Prior inpatient use indicator equal to 1 if the patient had any admission to a short term or critical access hospital in the 12 months prior to their LEJR admission, and 0 otherwise
    - Prior PAC use indicator was set to 1 if the patient had any admission to an institutional PAC setting including SNF, IRF and long term care hospital in the 12 months prior to their LEJR admission, and 0 otherwise
    - 27 chronic condition indicators each set equal to 1 if the year of the (earliest) diagnosis detected by date was at least one year prior to the year of the LEJR index stay, and 0 otherwise
        - Conditions included: Alzheimer's disease, Alzheimer's disease and related disorders or senile dementia, anemia, asthma, atrial fibrillation, benign prostatic hyperplasia, breast cancer, cataract, chronic kidney disease, chronic obstructive pulmonary disease, colorectal cancer, depression, diabetes, endometrial cancer, glaucoma, heart failure, hip or pelvic fracture, hyperlipidemia, hypertension, hypothyroidism, ischemic heart disease, lung cancer, osteoporosis, prostate cancer, acute myocardial infarction, rheumatoid arthritis, and stroke or transient ischemic attack.

eTable 1 contains the coefficients we estimated to predict spending risk. In addition, **eTable 1** shows the contribution changes in each characteristic made to the overall change in spending risk we observed in mandatory and voluntary MSAs (described in main paper Table 3) in years 3-4.

Top Quartile of Spending Risk

We created an indicator for whether or not an episode, based purely on its characteristics, had "spending risk" that would have scored it in the top quartile of total spending in 2013-14. Using the scores from the spending risk model above, the top quartile included spending risk above $34,241.

The purpose of this outcome is to capture patient selection by hospitals subsequent to CJR implementation in a single, integrated measure. The concern is that to reduce spending per episode, hospitals will selectively perform on LEJR on patients who are healthier and therefore less costly.

Difference-in-Difference Specification

All difference-in-differences models used in this paper were estimated using linear regression with the MSA sampling weights described above (**eMethods Section 1**) and employed clustered standard errors at the MSA level.

Model specification was the following

$$Outcome_{ijq} = \beta_0 + \delta_j + \alpha_q + \beta_1 Year_q * Treatment_j + X_i\tau + \varepsilon_{ijq}$$

- $Outcome_{ijq}$ is patient i's (with LEJR in MSA j in year-quarter q) outcome value
  - For spending and patient risk spending outcomes this is a continuous value corresponding with the relevant outcome
  - For the proportion of top quartile risk patients, this corresponds to a binary outcome
- β_0 is a constant
- δ_j is a MSA fixed effect
- α_q are indicators for each year-quarter (excluding Q1 and Q2 of 2016 as a washout period)
- $Year_q * Treatment_j$ is equal to 1 for episodes delivered in a treatment MSA hospital during a given calendar year (including 2016, 2017, 2018 and 2019) and 0 otherwise; in before and after 2018 models, $Year_q$ was an indicator for years 2016-17 or years 2018-19
  - There are no main effects for *Post* or *Treatment* included because these are incorporated into MSA and year-quarter fixed effects
- ε_{ijq} is the error with MSA-level clustering
- X_i are beneficiary demographics:
  - **Note**: models using patient spending risk (manuscript Table 3) as outcomes **do not** include patient characteristics since these were used to generate the patient spending risk score.
  - Index episode indicators:
    - Indicator for DRG 469 (LEJR with complications)
    - Indicator for fracture as defined in NQF Measure #1550
    - Indicators for procedures: total knee, total hip, partial, or none as defined in NQF Measure #1550

- https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Measure-Methodology.html

- Age indicators (<65, 65 to 69, 70 to 74, 75 to 79, 80 to 84, 85 to 89, and 90+)
- Female indicator
- Race indicators (white, black, Asian, other, Hispanic)
- Medicaid eligibility status (dual eligible or not) in any month in the year prior to admission
- Original entitlement reason indicators (age 65+, disability or end-stage renal disease)
- Metro residence indicator set equal to 1 if the bene's Zip code is located within Rural-Urban Commuting Area (RUCAs) 1-3 (i.e., metropolitan area), and 0 otherwise
    - For 0.16% of beneficiaries with missing RUCA, we used a missing RUCA indicator set equal to one if the bene's Zip code did not have RUCA, and 0 otherwise
- 27 chronic condition indicators each set equal to 1 if the year of the (earliest) diagnosis detected by date was at least one year prior to the year of the LEJR index stay, and 0 otherwise
    - Conditions included: Alzheimer's disease, Alzheimer's disease and related disorders or senile dementia, anemia, asthma, atrial fibrillation, benign prostatic hyperplasia, breast cancer, cataract, chronic kidney disease, chronic obstructive pulmonary disease, colorectal cancer, depression, diabetes, endometrial cancer, glaucoma, heart failure, hip or pelvic fracture, hyperlipidemia, hypertension, hypothyroidism, ischemic heart disease, lung cancer, osteoporosis, prostate cancer, acute myocardial infarction, rheumatoid arthritis, and stroke or transient ischemic attack.

Ranking Hospitals Based on Historical Average Episode Spending

Table 2 of the main paper describes hospital drop-out in voluntary MSAs by quartiles of how far (measured in dollars) below or above their regional average for episode institutional spending they were. Using an analytic sample of LEJR episodes for hospitals in the 171 MSAs over the period 2012-14, which were the same years used to develop hospitals' regional component of their target prices, we used the same exclusions as our main analytic sample and replaced outlier values (those below the 1st or above the 99th percentile) with the 1st and 99th percentile values of institutional spending.

We estimated below and above regional average spending using the following hospital random effects model

$$InstSpend_{irh} = \beta_0 + \beta_1 DRG469_i + \beta_2 Fracture_i + \beta_3 Region_{r(h)} + \delta_h + \varepsilon_{irh}$$

where institutional spending for episode i was regressed on fixed effects for DRG 469 and fracture, fixed effects for a hospital's region (9 census divisions + Puerto Rico), and a random effect for the hospital. The random effect from this model captures the distance each hospital was

from their regions' average, either above or below. **Table D** shows the coefficients from this model.

Table D: Institutional Spending Coefficients from Hospital Random Effects Model

VARIABLES	Coef.	SE
DRG 469	11,093	(61.72)
Fracture	16,199	(39.47)
Census Region		
New England (ref)	--	--
Middle Atlantic	1,868	(813.4)
East North Central	-3,800	(786.5)
West North Central	-6,067	(877.8)
South Atlantic	-4,868	(794.5)
East South Central	-6,576	(937.4)
West South Central	-3,864	(796.5)
Mountain	-5,069	(936.8)
Pacific	1,716	(786.5)
Puerto Rico	-17,364	(1,510)
Constant	27,304	(693.7)
Observations	691,553	
Number of hospital random effects	1,671	

The quartiles used in Table 2 of the main paper were created by splitting the random effects for hospitals in voluntary MSAs into four equal groups.

eMethods 3. Comparison of Difference-in-Differences Analytic Strategy vs. Analysis of the CJR Program as a Randomized Control Trial

Given that CJR was a randomized experiment, it is also reasonable to study the impact of the payment program as a randomized trial. This has been the approach taken by other researchers.[4] In this section, we examine several methodological issues that impact the choice of our analytic strategy:

- Pre-intervention balance in spending across MSAs
- Spending trends pre-intervention
- Compositional changes in episodes after CJR.

Assessing Outcome and Characteristic Balance in the Pre-Period

We measured differences in MSA average outcomes and patient characteristics between CJR and control MSAs in the pre-period (**eMethods Table E Panel A**), finding that episodes in CJR MSAs were on average $573 more expensive than control MSAs. This was largely driven by the mandatory MSAs, where episodes were $1,019 more expensive in the pre-period, only half of which ($467) could be attributed to differences in patient risk. At the episode level (**eMethods Table E Panel B**) pre-period differences were larger, indicating that the more expensive MSAs randomized to CJR also had higher episode volumes in the pre-period; weighting the MSA level differences by LEJR episode volumes in the pre-period (**eMethods Table E Panel C**) resulted in similar differences to those at the episode level.

The sizeable differences in the pre-period indicate that the randomization did not achieve balance at the MSA or episode level. One explanation is that CMS made the decision to randomly select more MSAs from the historically higher cost strata (see **eMethods Table A**). Random selection occurred within strata, implying that outcomes and characteristics should be balanced after controlling for between strata differences. To assess balance within strata in the pre-period, we estimated the following MSA level model

(Eq. 1) $$Outcome_{j,2014-15} = \beta_0 + \beta_1 treat_j + \beta_2 Strata_{s(j)} + \varepsilon_j$$

where $Outcome_{j,2014-15}$ was the average value of an outcome (or characteristic) in MSA j in the pre-period (2014-2015), $treat_j$ was an indicator for whether or not MSA j was mandated to CJR, and $Strata_{s(j)}$ were indicators for each the 8 strata from which MSAs were randomly drawn from. We employed robust standard errors and estimated β_1 (the average difference between CJR and control MSAs) with and without LEJR episode volume weights. **eMethods Table F Panel A** provides the strata adjusted difference estimates and p values that indicate CJR MSAs were still more expensive and had greater patient risk in the pre-period even after adjusting for strata, most pronouncedly in the subset of mandated MSAs. Some of the estimated differences in predicted spending risk remained statistically significant. After weighting these differences by LEJR volume, the differences were even larger and remained similar to the episode level differences we describe in **eMethods Table F Panel B**.

[4] Finkelstein A, Ji Y, Mahoney N, Skinner J. Mandatory Medicare Bundled Payment Program for Lower Extremity Joint Replacement and Discharge to Institutional Postacute Care: Interim Analysis of the First Year of a 5-Year Randomized Trial. JAMA. 2018;320(9):892–900; Einav, L., Finkelstein, A., Ji, Y. and Mahoney, N., 2020. Voluntary Regulation: Evidence from Medicare Payment Reform (No. w27223). National Bureau of Economic Research; Einav, L., Finkelstein, A., Ji, Y. and Mahoney, N., 2020. Randomized trial shows healthcare payment reform has equal-sized spillover effects on patients not targeted by reform. Proceedings of the National Academy of Sciences.

Table E: Average Outcomes Differences in the Pre-Period (2014-15) at the MSA and Episode Level

	All 171 MSAs			85 Mandatory MSAs			86 Voluntary MSAs		
	CJR MSAs	Control MSAs	Difference	CJR MSAs	Control MSAs	Difference	CJR MSAs	Control MSAs	Difference
Panel A *Average MSA Level Differences in LEJR Outcomes*									
Institutional Spending ($)	25,000	24,427	573	25,763	24,744	1,019	24,001	24,166	-165
Predicted Total spending ($)	30,117	29,573	544	30,634	30,167	467	29,441	29,084	357
Top Quartile of predicted spending (%)	24.59%	22.39%	2.20%	26.74%	24.45%	2.29%	21.77%	20.69%	1.08%
Panel B *Average Episode Level Differences in LEJR Outcomes*									
Institutional Spending ($)	26,620	25,088	1,532	27,995	25,440	2,555	24,863	24,697	166
Predicted Total spending ($)	30478	29829	650	31,242	30,294	947	29502	29310	192
Top Quartile of predicted spending (%)	26.03%	23.13%	2.90%	29.36%	24.88%	4.48%	21.77%	21.17%	0.60%
Panel C *Weighted* Average MSA Level Differences in LEJR Outcomes*									
Institutional Spending ($)	26,796	25,045	1,751	28,037	25,417	2,620	24,802	24,680	122
Predicted Total spending ($)	30,589	29,787	802	31,263	30,289	974	29,506	29,296	210
Top Quartile of predicted spending (%)	26.51%	22.97%	3.54%	29.45%	24.86%	4.59%	21.79%	21.12%	0.67%

Table F: Strata and Lagged Outcome Adjusted Average MSA Level in the Pre-Period (2014-15)

	Unweighted						**Weighted by LEJR Episode Volume**					
	All MSA		Mandatory		Voluntary		All MSA		Mandatory		Voluntary	
	Diff.	P value	Diff.	P value	Diff.	P value	Diff.	P value	Diff.	P value	Diff.	P value
Panel A *Strata Adjusted Average MSA Level Differences in LEJR Outcomes*												
Institutional Spending ($)	422	0.371	1,001	0.091	-209	0.779	1,498	0.137	2,736	0.068	-152	0.872
Predicted Total spending ($)	385	0.020	434	0.046	331	0.194	657	0.011	1,005	0.011	192	0.327
Top Quartile of predicted spending (%)	1.59%	0.017	2.14%	0.020	0.99%	0.314	2.95%	0.009	4.70%	0.006	0.62%	0.430
Panel B *Outcome Lag and Strata Adjusted Average MSA Level Differences in LEJR Outcomes*												
Institutional Spending ($)	-17	0.906	258	0.159	-309	0.172	104	0.430	294	0.099	-137	0.485
Predicted Total spending ($)	12	0.825	40	0.611	-16	0.828	21	0.683	38	0.625	4	0.953
Top Quartile of predicted spending (%)	0.20%	0.420	0.34%	0.332	0.12%	0.726	0.23%	0.326	0.28%	0.451	0.21%	0.476

The differences we show in **Table E** and **Table F Panel A** are consistent with prior work[5] that described pre-period (2015 only) imbalances in spending and risk between CJR and control MSAs at the episode level. However, they contrast with other evaluations[6] which have found balance between CJR and control MSAs in the pre-period. These other evaluations established pre-period balance by further adjusting β_1 by lagged differences in $Outcome_j$, using the following specification

(Eq. 2) $$Outcome_{j,2014-15} = \beta_0 + \beta_1 treat_j + \beta_2 Outcome_{j,2013} + \beta_3 Outcome_{j,2012} + \beta_4 Strata_{s(j)} + \varepsilon_j$$

where $Outcome_{j,2013}$ and $Outcome_{j,2012}$ were lagged values of the outcome from the two years before the pre-period. The lagged outcomes in Eq. 2 can accomplish several things: (1) improve the precision of the estimate for β_1, as the authors argued, and (2) control for pre-period differences in $Outcome_{j,2014-15}$ if differences in the lagged outcomes are persistent year-over-year. The latter turns this pre-period check for balance into a difference-in-differences model that describes whether or not pre-period differences are any different from *pre*-pre-period differences—which is not a check of balance, but one of pre-period trend.

We estimated Eq. 2 and describe the estimates in **Table F Panel B**, which show that the inclusion of lagged outcome values does not simply improve precision in the estimated β_1 but explains away the pre-period differences in spending and risk observed in **Table E and Table F Panel A**.

Summary of Pre-Period Balance

We evaluated differences in average outcomes and patient characteristics between CJR and control MSAs in the pre-period. We found

- CJR MSAs had more expensive LEJR episodes and higher patient risk in the pre-period.

- Controlling for strata, or employing volume weights, did not explain these differences, in the case of volume weights the differences became larger.

- Adjusting for *pre*-pre-period differences in the outcomes nearly eliminated the spending and risk differences, which suggest outcome differences are persistent year-over-year.

Our assessment of pre-period balance suggests that employing a difference-in-differences approach as we do in this study is appropriate.

Outcome Trends in the Pre-Period

We created an additional analytic file for LEJR episodes over the period 2011 through 2015 that employed the same study exclusions described in the Exclusions section above. We

[5] Barnett ML, Wilcock A, McWilliams JM, et al. Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement. N Engl J Med 2019;380(3):252–62.

[6] Finkelstein A, Ji Y, Mahoney N, Skinner J. Mandatory Medicare Bundled Payment Program for Lower Extremity Joint Replacement and Discharge to Institutional Postacute Care: Interim Analysis of the First Year of a 5-Year Randomized Trial. JAMA. 2018;320(9):892–900; Einav, L., Finkelstein, A., Ji, Y. and Mahoney, N., 2020. Voluntary Regulation: Evidence from Medicare Payment Reform (No. w27223). National Bureau of Economic Research; Einav, L., Finkelstein, A., Ji, Y. and Mahoney, N., 2020. Randomized trial shows healthcare payment reform has equal-sized spillover effects on patients not targeted by reform. Proceedings of the National Academy of Sciences.

evaluated whether the primary outcomes in our study (institutional spending and patient risk) demonstrated differential pre-period trends in the years leading up to the implementation of CJR. Using linear regression, we modeled episode level outcomes on MSA fixed effects, year fixed effects, an interaction between the year of the pre-period (1, 2, 3, 4 or 5) and an indicator for whether the MSA was assigned to treatment (equal to 1 if so and 0 otherwise), and adjusted for patient demographics and comorbidities. Each model included our weights (described in Section A above) and clustered standard errors at the MSA level.

As shown in **eTable 2**, we found that LEJR spending and risk were increasing differentially in MSAs selected for the CJR program in the pre-period, but statistically we were unable to reject the null hypothesis of no differential pre-period trend for any of our outcomes. This was the case across all MSAs, as well as in mandatory and voluntary MSAs separately.

Compositional Changes in Study Sample

In the main paper we show a decline of $175 in spending risk in mandatory MSAs in years 3-4 while voluntary MSAs demonstrated no changes ($12; 95% CI -129, 154). **eTable 1** shows the contribution each covariate change had on creating these changes in risk. **eMethods Table G** below summarizes these changes for years 1-2 and 3-4 showing that the risk change in Mandatory MSAs in years 3-4 was largely driven by differential reductions in CCWs, age, Medicaid, and prior PAC use. Again, we did not observe these differential compositional changes in voluntary MSAs.

Table G: Summary of spending risk changes in mandatory and voluntary MSAs

	Mandatory MSAs		Voluntary MSAs	
	Years 1-2	Years 3-4	Years 1-2	Years 3-4
Age	-18.60	-44.21	38.82	-7.83
Female	-2.64	-7.30	0.79	2.96
Race	-0.56	-1.02	-4.40	3.21
Medicaid	-11.29	-32.99	-3.80	11.17
Entitlement	-7.11	-2.96	-4.35	2.31
Metro Residence	4.13	19.26	12.57	22.97
Prior Inpatient	0.49	2.79	1.03	-1.66
Prior PAC	-30.56	-24.21	4.29	3.66
Total CCWs	7.67	-84.76	18.43	-24.39
Total Change	**-58.46**	**-175.40**	**63.36**	**12.41**

Taken together with our pre-period trends, we found that a difference-in-differences approach was appropriate to studying CJR. However, any future analysis on the effects of CJR will have to deal with the compositional shifts we observed. We made this a focus of our paper, where we quantified the effect compositional changes had on our primary outcome of institutional spending.

eMethods 4. Other Supplemental Results

Changes in Episode Volume

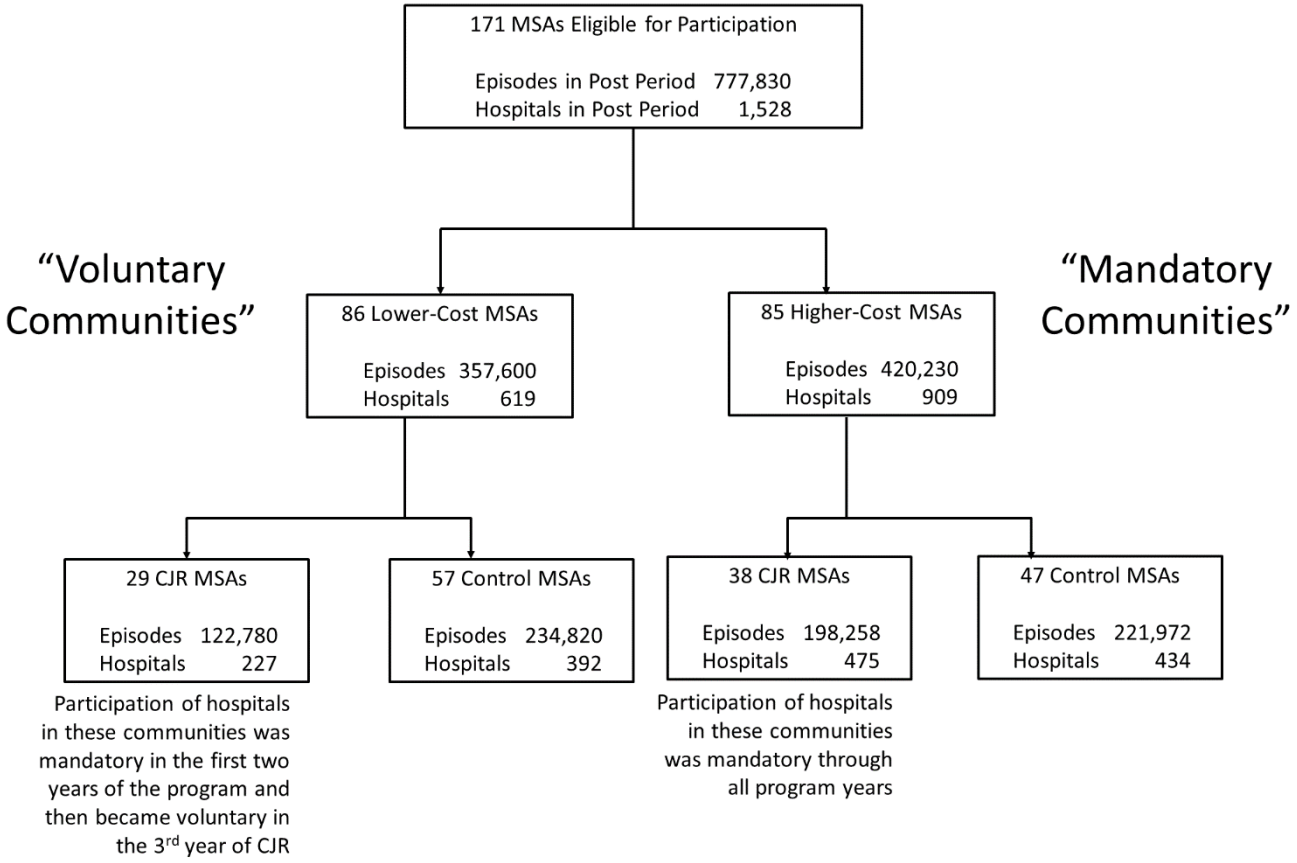
We evaluated whether the volume of LEJR procedures per 1000 traditional Medicare beneficiaries differentially changed in CJR versus control MSAs after the program was implemented.

To do so we created an MSA-year-quarter level file with the count of continuously enrolled (parts A and B) beneficiaries residing in the MSA during each year-quarter along with their average year-quarter patient characteristics. Beneficiaries currently enrolled with End Stage Renal Disease were not included. Next, we counted up the number of LEJR procedures (including DRGs 469/470 and outpatient total knee replacements (CPT code 27447)) delivered to these beneficiaries in each MSA-year-quarter, and created a per capita (per 1000 beneficiaries) rate of LEJR procedures.

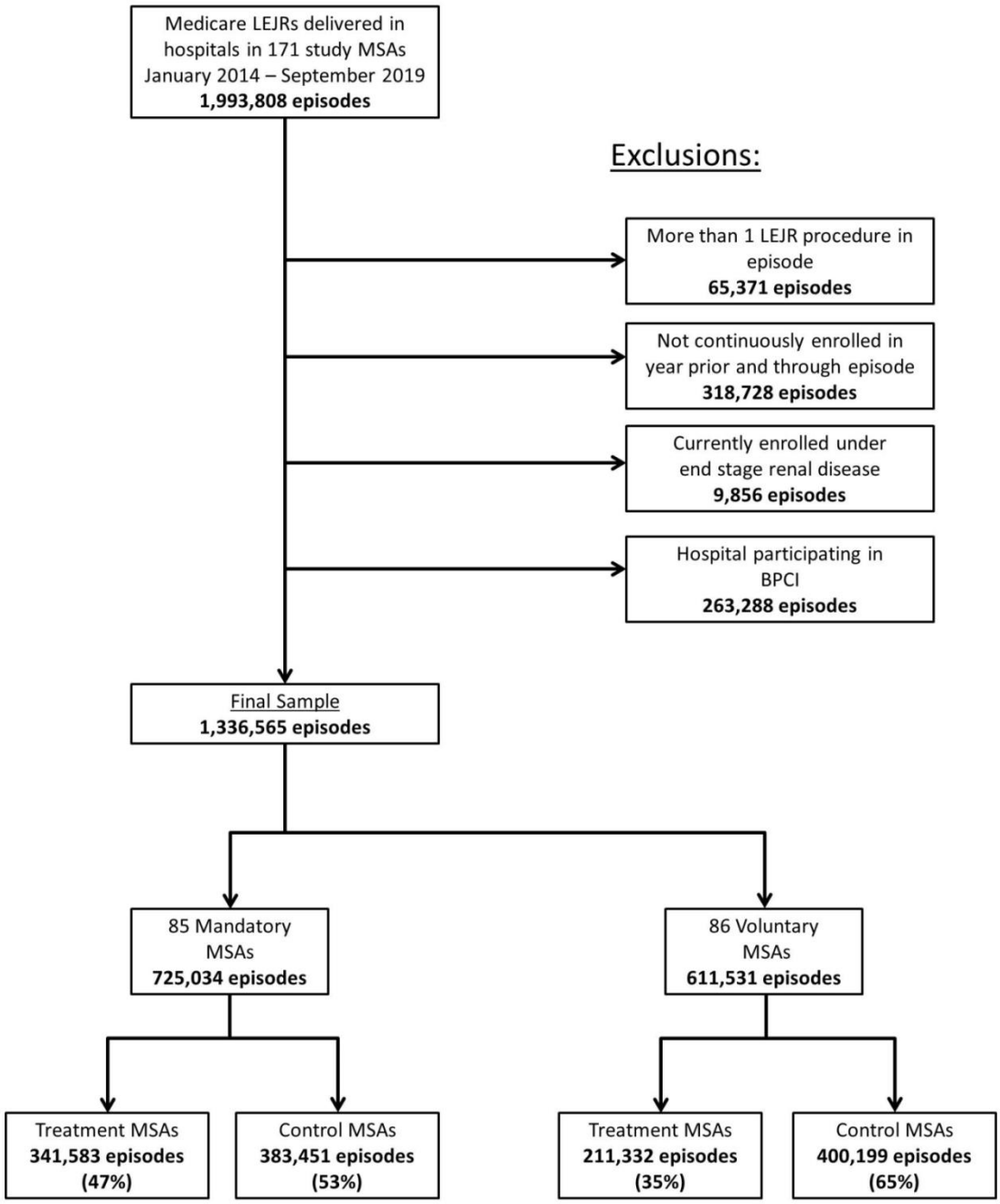
We evaluated differential per capita LEJR changes in CJR MSAs over the full post-period (years 1-4), as well as before and after the year 3 policy changes, and did so for all MSAs together and for mandatory and voluntary MSAs separately. Using linear regression, we modelled the per capita rate on fixed effects for each year-quarter, MSA strata, an indicator for the post period and for CJR, their interaction term, and ran each model with and without patient characteristics. Robust standard errors were used.

eTable 3 presents the coefficient and P-value on the interaction term of being a CJR MSA in the post-period (overall, or by years 1-2 & 3-4). We find no evidence that LEJR volumes in CJR MSAs differentially changed over the full post-period (years 1-4), or after the year 3 policy changes. This was the case in all 171 MSAs, as well as in mandatory and voluntary MSAs separately.

eFigure 1. CJR Voluntary and Mandatory Community Cohort Flow Diagram



eFigure 2. Exclusions Used to Create Analytic Sample



eTable 1. Risk Model Coefficients and Deconstructing the Change in Patient Risk Score in Mandatory and Voluntary MSAs by 2018-2019

		Mandatory MSAs by 2018-19		Voluntary MSAs by 2018-19	
	Coefficient in patient risk model (predicted spending)	Differential change in population	Change in total risk score	Differential change in population	Change in total risk score
Patient Characteristics					
Age Less than 65	-1,496	-0.00400	5.98	-0.00071	1.06
Age 65 to 69	ref		0.00		0.00
Age 70 to 74	1,102	0.00699	7.70	-0.00384	-4.23
Age 75 to 79	2,587	-0.00023	-0.59	0.00132	3.42
Age 80 to 84	5,894	-0.00189	-11.13	-0.00184	-10.87
Age 85 to 89	11,018	-0.00207	-22.86	-0.00020	-2.23
Age 90 plus	14,937	-0.00156	-23.32	0.00034	5.03
Female	731.5	-0.00998	-7.30	0.00404	2.96
White	ref		0.00		0.00
Black	2,104	-0.00039	-0.83	-0.00212	-4.47
Asian	4,326	0.00026	1.13	0.00105	4.52
Other Race	1,659	0.00220	3.65	0.00204	3.39
Hispanic	1,820	-0.00273	-4.97	-0.00013	-0.23
Medicaid	4,143	-0.00796	-32.99	0.00270	11.17
Entitlement Age	ref		0.00		0.00
Entitlement Disability	1,696	-0.00177	-3.00	0.00163	2.76
Entitlement ESRD	5,290	0.00001	0.04	-0.00009	-0.46
Metro Residence	2,396	0.00446	10.69	0.00694	16.63
Missing RUCA	-6,175	-0.00139	8.57	-0.00103	6.34
Prior Inpatient	457	0.00611	2.79	-0.00363	-1.66
Prior PAC	5,560	-0.00435	-24.21	0.00066	3.66
CCW Indicators					
Any Dementia	5,016	-0.00343	-17.22	-0.00243	-12.18
Alzheimer's	815.3	-0.00054	-0.44	0.00129	1.05
Acute Myocardial Infarction	721	-0.00151	-1.09	0.00025	0.18
Anemia	1,288	-0.00202	-2.60	-0.00380	-4.90
Asthma	375.9	-0.00470	-1.77	0.00199	0.75
Atrial Fibrillation	1,835	-0.00042	-0.76	0.00078	1.44
Cataract	-583.3	-0.00740	4.32	0.00221	-1.29
Cogestive Heart Failure	2,482	-0.00444	-11.03	-0.00248	-6.15
Chronic Kidney Disease	1,980	-0.00525	-10.39	-0.00203	-4.02
Endocrine Cancer	1,339	-0.00119	-1.59	-0.00072	-0.96

Breast Cancer	17.28	-0.00124	-0.02	-0.00112	-0.02
Colon Cancer	380.2	0.00009	0.03	0.00025	0.10
Lung Cancer	3,367	0.00006	0.21	-0.00078	-2.62
Prostate Cancer	-116.4	0.00168	-0.20	-0.00155	0.18
Chronic Obstructive Pulmonary Disease	1,643	-0.00133	-2.18	0.00338	5.55
Depression	1,753	-0.00329	-5.77	0.00695	12.18
Diabetes	1,608	-0.00089	-1.43	-0.00392	-6.31
Glaucoma	618.6	-0.00605	-3.74	0.00060	0.37
Hip Fracture	2,447	-0.00050	-1.22	-0.00076	-1.86
Hyperlipidemia	-960.7	-0.00101	0.97	-0.00136	1.31
Benign Prostatic Hyperplasia	377	0.00507	1.91	-0.00193	-0.73
Hypertension	275.1	-0.00022	-0.06	-0.00277	-0.76
Thyroid Disease	272.4	-0.00167	-0.45	-0.00272	-0.74
Ischemic Heart Disease	616.3	-0.00274	-1.69	-0.00189	-1.16
Osteoporosis	1,264	-0.00556	-7.02	0.00719	9.08
Arthritis	-3,670	0.00354	-12.99	0.00127	-4.65
Stroke	2,119	-0.00402	-8.53	-0.00389	-8.23
Observations	111,189				
R^2	0.21				
	Total Change		-175.40		12.41

Abbreviations: end stage renal disease (ESRD), institutional post-acute care (PAC), rural-urban commuting area (RUCA)

This Table shows the breakdown of the contribution of each covariate in the patient risk score to the change in the summary score in years 2018-19. The first column is the coefficient in the risk model, which is multiplied by the differential changes in the second and fourth columns to get the contribution of each covariate to the total value in the third and fifth columns.

eTable 2. Pre-Period Annual Trend in Outcomes, 2011-2015

	All MSAs (N=171)		**Mandatory MSAs (N=85)**		**Voluntary MSAs (N=86)**	
	Annual Trend	P Value	Annual Trend	P Value	Annual Trend	P Value
Institutional Spending ($)	52.07	0.204	68.81	0.190	37.40	0.558
Average Patient Risk Score ($)	5.42	0.811	8.93	0.806	1.62	0.945
Top quartile of risk (%)	0.04	0.759	0.00	0.989	0.09	0.492

eTable 3. Per Capita LEJR Volume Differences in CJR vs Control MSAs After the Start of CJR

	Post CJR		**Post CJR, before and after Year 3**			
	Years 1-4		Years 1-2		Years 3-4	
	CJR vs. Control Difference	P Value	CJR vs. Control Difference	P Value	CJR vs. Control Difference	P Value
All 171 MSAs						
CJR Indicator X Post CJR Period Indicator, unadjusted	0.002	0.962	-0.008	0.862	0.010	0.820
Add patient characteristics	0.014	0.532	0.008	0.801	0.020	0.500
85 Mandatory MSAs						
CJR Indicator X Post CJR Period Indicator, unadjusted	-0.030	0.530	-0.055	0.383	-0.008	0.897
Add patient characteristics	-0.041	0.154	-0.056	0.145	-0.029	0.449
86 Voluntary MSAs						
CJR Indicator X Post CJR Period Indicator, unadjusted	0.016	0.757	0.031	0.672	0.004	0.956
Add patient characteristics	0.017	0.629	0.028	0.560	0.008	0.866

eTable 4. Sociodemographic and Clinical Characteristics of Patients Undergoing Lower-Extremity Joint Replacement Among Hospitals in Metropolitan Statistical Areas Randomized to CJR (Overall) Participation or Controls

	Pre-Period Means			Effect of CJR on Case Mix (Differential Change from Baseline for CJR vs. Control MSAs)	
	CJR MSAs	Control MSAs	Difference	Years 1-2 (95% CI)	Years 3-4 (95% CI)
Discharges (unweighted N)	181,785	255,319	-73,534	352,437	425,393
Episode Characteristics					
LEJR with Major Comorbidity or Complication (DRG 469)	5.87%	4.97%	0.89%	0.1% (-0.2, 0.4)	-0.3% (-0.6, 0.1)
Fracture	16.93%	15.07%	1.86%	0.2% (-0.4, 0.9)	-0.1% (-0.8, 0.5)
Total Knee	54.26%	56.56%	-2.29%	0.3% (-0.5, 1.1)	0.4% (-0.4, 1.3)
Total Hip	30.72%	30.54%	0.18%	-0.3% (-0.8, 0.2)	-0.1% (-0.8, 0.6)
Partial Hip/Knee	14.44%	12.47%	1.97%	0.1% (-0.6, 0.7)	-0.3% (-1, 0.3)
Patient Characteristics					
Age (average)	74.61	74.32	0.29	0.03 (-0.1, 0.1)	-0.04 (-0.2, 0.1)
Male	64.49%	64.09%	0.39%	-0.1% (-0.7, 0.4)	-0.4% (-0.9, 0.1)
White	90.01%	90.90%	-0.90%	0.2% (-0.3, 0.6)	0% (-0.5, 0.6)
Black	5.57%	5.71%	-0.14%	-0.2% (-0.5, 0)	-0.1% (-0.5, 0.2)
Asian	1.05%	0.65%	0.40%	0.1% (0, 0.2)	0.1% (0, 0.2)
Other Race	2.11%	2.06%	0.06%	0.1% (-0.1, 0.3)	0.2% (0, 0.4)
Hispanic	1.25%	0.68%	0.58%	-0.1% (-0.2, 0)	-0.2% (-0.3, 0)
Dual enrollment in Medicaid	12.33%	10.64%	1.70%	-0.2% (-0.8, 0.4)	-0.3% (-1.1, 0.4)
Entitlement – Age	83.95%	83.85%	0.10%	0.3% (-0.1, 0.7)	0% (-0.6, 0.7)
Entitlement – Disability	15.94%	16.06%	-0.12%	-0.3% (-0.7, 0.1)	0% (-0.7, 0.6)
Entitlement – ESRD	0.11%	0.09%	0.02%	0% (0, 0)	0% (0, 0)
Metro Residence	84.93%	82.79%	2.13%	0.3% (-0.1, 0.7)	0.6% (0.1, 1.1)
Prior Inpatient Stay 12mo	22.48%	21.88%	0.60%	0.2% (-0.2, 0.5)	0.2% (-0.3, 0.6)
Prior Inst. PAC Stay 12mo	8.70%	8.26%	0.44%	-0.3% (-0.6, 0)	-0.2% (-0.6, 0.1)
Total Chronic Conditions	7.19	6.99	0.20	-0.01 (-0.1, 0)	-0.03 (-0.1, 0)

eTable 5. Sociodemographic and Clinical Characteristics of Patients Undergoing Lower-Extremity Joint Replacement Among Hospitals in Metropolitan Statistical Areas Randomized to **Mandatory** Participation or Controls

	Pre-Period % or Means			Effect of CJR on Case Mix (Differential Change from Pre-Period for CJR vs. Control MSAs)	
	CJR MSAs	Control MSAs	Difference	Years 1-2 (95% CI)	Years 3-4 (95% CI)
Discharges (unweighted N)	112,035	126,170	-14,135	190,738	229,492
Episode Characteristics (%)					
LEJR with Major Comorbidity or Complication (DRG 469)	6.08%	5.19%	0.89%	0% (-0.4, 0.5)	-0.3% (-0.8, 0.1)
Fracture	18.94%	16.11%	2.83%	-0.1% (-1, 0.8)	-0.2% (-1.2, 0.8)
Total Knee	53.40%	56.48%	-3.08%	0.3% (-0.9, 1.5)	0.4% (-0.9, 1.7)
Total Hip	30.03%	29.89%	0.14%	-0.1% (-0.7, 0.6)	0% (-0.9, 0.8)
Partial Hip/Knee	16.24%	13.26%	2.98%	-0.2% (-1.1, 0.8)	-0.4% (-1.4, 0.7)
Patient Characteristics (%)					
Age (average)	74.91	74.41	0.50	0 (-0.2, 0.2)	-0.05 (-0.2, 0.1)
Male	65.03%	64.52%	0.51%	-0.4% (-1.1, 0.4)	-1% (-1.6, -0.4)
White	88.95%	90.18%	-1.23%	0.1% (-0.5, 0.7)	0.1% (-0.7, 0.8)
Black	6.25%	7.06%	-0.81%	-0.2% (-0.5, 0.1)	0% (-0.5, 0.4)
Asian	1.13%	0.55%	0.58%	0.1% (-0.1, 0.2)	0% (-0.1, 0.2)
Other Race	2.00%	1.53%	0.46%	0.1% (-0.1, 0.4)	0.2% (0, 0.5)
Hispanic	1.67%	0.67%	0.99%	-0.1% (-0.3, 0.1)	-0.3% (-0.6, 0)
Dual enrollment in Medicaid	13.46%	10.60%	2.86%	-0.3% (-1.2, 0.7)	-0.8% (-1.9, 0.3)
Entitlement – Age	83.84%	83.69%	0.14%	0.4% (-0.2, 1)	0.2% (-0.8, 1.1)
Entitlement – Disability	16.06%	16.23%	-0.17%	-0.4% (-1, 0.2)	-0.2% (-1.1, 0.8)
Entitlement – ESRD	0.11%	0.08%	0.03%	0% (-0.1, 0)	0% (0, 0)
Metro Residence	86.61%	86.52%	0.09%	0.2% (-0.2, 0.7)	0.4% (-0.2, 1.1)
Prior Inpatient Stay 12mo	23.37%	22.78%	0.59%	0.1% (-0.4, 0.6)	0.6% (0, 1.3)
Prior Inst. PAC Stay 12mo	9.77%	9.03%	0.73%	-0.5% (-0.9, -0.2)	-0.4% (-0.9, 0)
Total Chronic Conditions	7.61	7.24	0.37	-0.01 (-0.1, 0.1)	-0.05 (-0.1, 0)

eTable 6. Sociodemographic and Clinical Characteristics of Patients Undergoing Lower-Extremity Joint Replacement Among Hospitals in Metropolitan Statistical Areas Randomized to **Voluntary** Participation or Controls

	Pre-Period Means			Effect of CJR on Case Mix (Differential Change from Baseline for CJR vs. Control MSAs)	
	CJR MSAs	Control MSAs	Difference	Years 1-2 (95% CI)	Years 3-4 (95% CI)
Discharges (unweighted N)	69,750	129,149	-59,399	161,699	195,901
Episode Characteristics					
LEJR with Major Comorbidity or Complication (DRG 469)	5.59%	4.72%	0.86%	0.2% (-0.2, 0.6)	-0.2% (-0.8, 0.5)
Fracture	14.36%	13.91%	0.46%	0.6% (0, 1.3)	-0.1% (-0.7, 0.6)
Total Knee	55.37%	56.64%	-1.28%	0.2% (-0.6, 1)	0.5% (-0.5, 1.4)
Total Hip	31.60%	31.26%	0.35%	-0.6% (-1.3, 0.2)	-0.2% (-1.2, 0.9)
Partial Hip/Knee	12.14%	11.59%	0.55%	0.4% (-0.3, 1)	-0.3% (-0.9, 0.4)
Patient Characteristics					
Age (average)	74.22	74.22	0.00	0.08 (-0.1, 0.2)	-0.04 (-0.2, 0.2)
Male	63.79%	63.62%	0.17%	0.1% (-0.7, 0.9)	0.4% (-0.3, 1.1)
White	91.35%	91.71%	-0.35%	0.3% (-0.3, 0.8)	-0.1% (-0.8, 0.7)
Black	4.71%	4.21%	0.50%	-0.3% (-0.7, 0.1)	-0.2% (-0.8, 0.3)
Asian	0.95%	0.77%	0.18%	0% (-0.1, 0.2)	0.1% (0, 0.2)
Other Race	2.26%	2.64%	-0.38%	0.1% (-0.2, 0.4)	0.2% (-0.1, 0.5)
Hispanic	0.72%	0.68%	0.04%	-0.1% (-0.3, 0)	0% (-0.2, 0.1)
Dual enrollment in Medicaid	10.89%	10.67%	0.22%	-0.1% (-0.8, 0.6)	0.3% (-0.7, 1.2)
Entitlement – Age	84.10%	84.02%	0.08%	0.3% (-0.3, 0.9)	-0.2% (-1, 0.7)
Entitlement – Disability	15.79%	15.87%	-0.09%	-0.3% (-0.9, 0.3)	0.2% (-0.7, 1)
Entitlement – ESRD	0.11%	0.10%	0.01%	0% (0, 0)	0% (0, 0)
Metro Residence	82.77%	78.64%	4.13%	0.4% (-0.3, 1.1)	0.7% (-0.1, 1.5)
Prior Inpatient Stay 12mo	21.35%	20.88%	0.47%	0.2% (-0.3, 0.8)	-0.4% (-1, 0.3)
Prior Inst. PAC Stay 12mo	7.34%	7.40%	-0.07%	0.1% (-0.4, 0.5)	0.1% (-0.4, 0.5)
Total Chronic Conditions	6.64	6.70	-0.06	0 (-0.1, 0.1)	-0.01 (-0.1, 0.1)