

Appendix

Table A1: Definition of variables

Variable	Explanation	Frequency	Source
Dependent:			
DTOC (days)	Number of days any patient experienced delayed discharge from hospital	Q	NHSE/I
DTOC (log)	Natural logarithm of DTOC(days)	Q	NHSE/I
Explanatory:			
UEC Vanguards	1 if one of 29 LA's participating in this Vanguard and it is onwards and after 2015 quarter 3, 0 – otherwise	F	NHSE/I
Care home beds(log)	Natural logarithm of the number of care home beds available in the LA	A	CQC
CA Ratio	Percentage of all population that receives Carer's Allowance	Q	ONS
DLA Ratio(65)	Percentage of older population (65+ years) that receives Disability Living Allowance	Q	ONS
JSA Ratio	Percentage of all population that receives Jobseeker's Allowance	Q	ONS
PC Ratio(65)	Percentage of older population (65+ years) that receives Pension Credit	Q	ONS
Population(log)	Natural logarithm of the LA's population	A	ONS
65+ ratio	Percentage of older people (65+) in the population	A	ONS
House prices(log)	Natural logarithm of average house prices in LA	Q	LandReg
Owned house	Percentage of single occupancy households of older people (65+) that own a house with mortgage, 2011 data	F	ONS
Owned house (outright)	Percentage of single occupancy households of older people (65+) that own a house outright, 2011 data	F	ONS
LA type	Type of Local Authority: Metropolitan, Unitary, London and County	F	Gov
Area	Local Authority's size (m ²)	F	Gov
Rurality	Percentage of people living in rural areas and hub towns, 2011 data	F	ONS
CCGs per LA	Number of CCGs each LA is interacting with	F	Gov
CCG dummy	1 – April 2013 onwards, identifies creation of CCG's, 0 – before April 2013	F	Gov

Note: Q – quarterly, A – annual, F – fixed; NHSE/I – NHS England and Improvement, CQC – Care Quality Commission, ONS – Office for National Statistics, LandReg – HM Land Registry's Price Paid Data, Gov – UK government's online service.

There were no missing values for all data points used throughout the chosen study time period.

Table A2: Synthetic control estimation outcome (DTOC) measures by period:

Period	DTOC days Treated	DTOC days Control (synth)	Difference	Difference in % (to Treated)
1	1569.36	1567.916	-1.444	-0.09201
2	1772.96	1772.207	-0.753	-0.04247
3	1778.4	1779.567	1.167	0.065621
4	1972.96	1969.42	-3.54	-0.17943
5	1918.64	1915.392	-3.248	-0.16929
6	1980.32	1979.21	-1.11	-0.05605
7	2029.24	2026.926	-2.314	-0.11403
8	2274.52	2274.597	0.077	0.003385
9	2164.28	2166.296	2.016	0.093149
10	2137.16	2137.553	0.393	0.018389
11	2062.92	2065.035	2.115	0.102525
12	2028.56	2029.041	0.481	0.023711
13	1996.64	1996.134	-0.506	-0.02534
14	1924.96	1921.385	-3.575	-0.18572
15	1826.32	1821.821	-4.499	-0.24634
16	2063	2056.206	-6.794	-0.32933
17	2061.84	2058.22	-3.62	-0.17557
18	1860.92	1857.615	-3.305	-0.1776
19	1573.04	1572.29	-0.75	-0.04768
20	1701.48	1818.133	116.653	6.855972
21	1693.04	2288.897	595.857	35.1945
22	1873.08	2313.684	440.604	23.52297
23	1871.88	2482.475	610.595	32.61935
24	2084.72	2440.76	356.04	17.07855
25	2135	2541.185	406.185	19.02506
26	1890.96	2330.016	439.056	23.21868
27	1819	2291.485	472.485	25.97499
28	1878.28	2393.571	515.291	27.4342
29	1767.72	2232.34	464.62	26.28357

Note: Nominal UEC Vanguard's start date was 3rd quarter of 2015, quarter 20 in our dataset, results after the start of this Vanguard indicated in bold.

Table A3: Synthetic control estimation predictor balance:

Variable	Treated	Synthetic
JSA ratio	0.039029	0.040455
PC ratio (65+)	0.269154	0.28076
CA ratio	0.011704	0.012353
DLA ratio (65+)	0.098542	0.103666
Care home beds (log)	7.602731	7.35620
Population (log)	12.43287	12.35283
Population 65+ ratio	0.173527	0.160181
Rural or hub (%)	20.8956	12.78465
No. CCGs to LA	4.84	3.924
House prices (£, log)	12.03679	11.99105
Owning single home r. (65+)	0.077565	0.07411
Owning single home outright r. (65+)	0.071337	0.068227
Area(m ²)	79959.32	76051.94

Table A4: Synthetic control post-estimation results:

Post estimation period	Estimates (synth-treated)	p-vals	p-vals standardized
c1 (quarter 20)	-116.653	0.77686	0
c2 (quarter 21)	-595.857	0.38843	0
c3 (quarter 22)	-440.604	0.545455	0
c4 (quarter 23)	-610.595	0.446281	0
c5 (quarter 24)	-356.04	0.719008	0
c6 (quarter 25)	-406.185	0.710744	0
c7 (quarter 26)	-439.056	0.677686	0
c8 (quarter 27)	-472.485	0.628099	0
c9 (quarter 28)	-515.291	0.603306	0
c10 (quarter 29)	-464.62	0.603306	0

Note: post-estimation results using synth_runner command on Stata.