Supplementary Online Content

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

Supplement

eTable 1. Changes in outcome variables associated with the introduction and discontinuation of DRGs by age group

	Introduction of DRGs		Discontinuation of DRGs	
	Step change estimated coefficients [95%CI]	Slope change estimated coefficients [95%CI]	Step change estimated coefficients [95%CI]	Slope change estimated coefficients [95%CI]
Patients aged 45–64 years				
Length of stay	-0.0271**	0.0012 ***	0.0139**	0.0019***
	[-0.0364, -0.0177]	[0.007,0.0017]	[0.0054, 0.0224]	[0.0014, 0.0024]
Average monthly admissions per month	0.0343***	-0.0007***	-0.0219***	-0.0018***
	[0.0283, 0.0402]	[-0.0010, -0.0004]	[-0.0273, -0.0165]	[-0.0021, -0.0016]
In-hospital mortality (%)	-0.1076***	-0.0005	-0.0068	0.0050***
	[-0.1636, -0.0515]	[-0.0033, 0.0023]	[-0.0611, 0.0475]	[0.0021, 0.0078]
Emergency readmission (%)	-0.0549***	-0.0021***	0.0003	0.0004
	[-0.0785, -0.0314]	[-0.0032, -0.0009]	[-0.0210, 0.0216]	[-0.0007, 0.0015]
Patients aged 65+ years				
Length of stay	-0.0105***	0.0010***	0.0066***	0.0030***
	[-0.0172, -0.0039]	[0.0006, 0.0013]	[0.0003, 0.0129]	[0.0027, 0.0034]
Average monthly admissions per month	0.0258***	-0.0025***	-0.0161***	-0.0031***
	[0.0209, 0.0307]	[-0.0028, -0.0023]	[-0.0207, -0.0115]	[-0.0034, -0.0029]
In-hospital mortality (%)	-0.0295*	0.0002	0.0012	0.0024***
	[-0.0538, -0.0053]	[-0.0010, 0.0014]	[-0.0223, 0.0247]	[0.0011, 0.0036]
Emergency readmission (%)	-0.0170**	-0.0017***	-0.0044	-0.0002
	[-0.0293, -0.0047]	[-0.0023, -0.0011]	[-0.0159, 0.0071]	[-0.0008, 0.0004]

*** $P < .001$; ** $P < .01$; * $P < .05$.

eTable 2. Changes in outcome variables associated with the introduction and discontinuation of DRGs by disease group

	Introduction of DRGs		Discontinuation of DRGs	
	Step change estimated coefficients [95%CI]	Slope change estimated coefficients [95%CI]	Step change estimated coefficients [95%CI]	Slope change estimated coefficients [95%CI]
Congestive heart failure				
Length of stay	-0.0267*	0.0014*	-0.0181	0.0025**
	[-0.0528, -0.0007]	[0.0000,0.0028]	[-0.0136, 0.0498]	[0.0009, 0.0042]
In-hospital mortality (%)	-0.1934**	-0.0015	0.0472	0.0009
	[-0.3342, -0.0527]	[-0.0087, 0.0056]	[-0.1006, 0.1951]	[-0.0069, 0.0087]
Emergency readmission (%)	-0.0101	-0.0015	-0.0373	0.0012
	[-0.0617, 0.0416]	[-0.0041, 0.0011]	[-0.0886, 0.0140]	[-0.0015, 0.0039]
Acute myocardial infarction				
Length of stay	-0.0858***	-0.0025***	0.0050	0.0051***
	[-0.1248, -0.0467]	[-0.0044, -0.0006]	[-0.0290, 0.0390]	[0.0033, 0.0070]
In-hospital mortality (%)	-0.2107***	-0.0048	-0.1305**	0.0062*
	[-0.3177, -0.1037]	[-0.0100, 0.0005]	[-0.2273, -0.0338]	[0.0011, 0.0113]
Emergency readmission (%)	-0.0279	-0.0033	0.0331	-0.0022
	[-0.1577, 0.1019]	[-0.0095, 0.0030]	[-0.0649, 0.1311]	[-0.0074, 0.0030]
Pneumonia				
Length of stay	-0.0176	0.0018***	0.0011	0.0036***
	[-0.0384, 0.0032]	[-0.0028, -0.0007]	[-0.0257, 0.0279]	[0.0022, 0.0050]
In-hospital mortality (%)	-0.0614*	-0.0003	0.0429	0.0061***
	[-0.1119, -0.0109]	[-0.0029, 0.0022]	[-0.0037, 0.0895]	[0.0036, 0.0085]
Emergency readmission (%)	0.0421	-0.0015	0.0114	0.0005
	[-0.0053, 0.0895]	[-0.0039, 0.0009]	[-0.0322, 0.0550]	[-0.0018, 0.0028]
Cerebrovascular disease				
Length of stay	-0.1265***	-0.0025***	0.0066*	0.0030***
	[-0.1649, -0.0882]	[-0.0045, -0.0005]	[0.0003, 0.0129]	[0.0027, 0.0034]
In-hospital mortality (%)	-0.0263	-0.0040	0.0200	0.0081***
	[-0.1073, 0.0547]	[-0.0081, 0.0000]	[-0.0645, 0.1045]	[0.0037, 0.0125]
Emergency readmission (%)	-0.0421	-0.0064**	0.0062	0.0005
	[-0.1254, 0.0411]	[-0.0106, -0.0022]	[-0.0763, 0.0886]	[-0.0038, 0.0048]
Hip fracture				
Length of stay	-0.0170*	-0.0002	0.0352***	0.0044***
	[-0.0429, -0.0089]	[-0.0011, 0.0015]	[0.0161, 0.0543]	[0.0033, 0.0054]
In-hospital mortality (%)	0.0964	-0.0118	0.0927	0.0154
	[-0.2022, 0.3949]	[-0.0270, 0.0034]	[-0.2474, 0.4328]	[-0.0019, 0.0328]
Emergency readmission (%)	-0.1054	-0.0028	0.0210	0.0016
	[-0.2982, 0.0875]	[-0.0125, 0.0069]	[-0.1654, 0.2074]	[-0.0082, 0.0113]

*** $P < .001$; ** $P < .01$; * $P < .05$.

eTable 3. Changes in outcome variables associated with the introduction and discontinuation of DRGs, excluding transition periods after policy changes

	Introduction of DRGs		Discontinuation of DRGs	
	Step change estimated coefficients [95%CI]	Slope change estimated coefficients [95%CI]	Step change estimated coefficients [95%CI]	Slope change estimated coefficients [95%CI]
Transition period: 6 months				
Length of stay	-0.0255***	0.0013***	0.0104**	0.0026***
	[-0.0321, -0.0189]	[0.0010, 0.0017]	[0.0040, 0.0168]	[0.0023, 0.0030]
Average monthly admissions per month	0.0418***	-0.0024***	-0.0336***	-0.0017***
	[0.0374, 0.0463]	[-0.0026, -0.0022]	[-0.0380, -0.0292]	[-0.0019, -0.0015]
In-hospital mortality (%)	-0.0302*	-0.0003	-0.0254	0.0039***
	[-0.0561, -0.0043]	[-0.0016, 0.0010]	[-0.0518, 0.0010]	[0.0026, 0.0053]
Emergency readmission (%)	-0.0322***	-0.0012**	-0.0112	0.0003
	[-0.0483, -0.0160]	[-0.0021, -0.0004]	[-0.0269, 0.0045]	[-0.0005, 0.0012]
Transition period: 3 months				
Length of stay	-0.0223***	0.0012***	0.0086**	0.0027***
	[-0.0281, -0.0164]	[0.0009, 0.0015]	[0.0031, 0.0142]	[0.0024, 0.0030]
Average monthly admissions per month	0.0394***	-0.0023***	-0.0271***	-0.0020***
	[0.0354, 0.0435]	[-0.0025, -0.0021]	[-0.0309, -0.0233]	[-0.0022, -0.0018]
In-hospital mortality (%)	-0.0378**	0.0001	0.0004	0.0038***
	[-0.0612, -0.0143]	[-0.0011, 0.0012]	[-0.0004, 0.0011]	[0.0026, 0.0050]
Emergency readmission (%)	-0.0257***	-0.0015***	-0.0117	0.0004
	[-0.0402, -0.0112]	[-0.0023, -0.0007]	[-0.0254, 0.0021]	[-0.0004, 0.0011]
Transition period: 1 month				
Length of stay	-0.0218***	0.0012***	0.0069*	0.0028***
	[-0.0274, -0.0163]	[0.0009, 0.0015]	[0.0015, 0.0123]	[0.0025, 0.0031]
Average monthly admissions per month	0.0296***	-0.0018***	-0.0143***	-0.0027***
	[0.0258, 0.0335]	[-0.0020, -0.0017]	[-0.0180, -0.0107]	[-0.0029, -0.0025]
In-hospital mortality (%)	-0.0369**	0.0000	-0.0134	0.0032***
	[-0.0592, -0.0145]	[-0.0011, 0.0012]	[-0.0352, 0.0084]	[0.0021, 0.0044]
Emergency readmission (%)	-0.0235***	-0.0016***	-0.0113	0.0004
	[-0.0372, -0.0097]	[-0.0024, -0.0009]	[-0.0240, 0.0015]	[-0.0004, 0.0011]

Note: A transition period was considered by excluding observations immediately after the dates of the policy changes. For example, when considering a 6-month transition period, we excluded 6 months of data after the policy changes in April 2009 and in April 2012, respectively.
*** $P < .001$; ** $P < .01$; * $P < .05$.

eTable 4. Changes in outcome variables associated with the introduction and discontinuation of DRGs, using alternative approaches to estimate patients' disease burden

	Introduction of DRGs		Discontinuation of DRGs	
	Step change estimated coefficients [95%CI]	Slope change estimated coefficients [95%CI]	Step change estimated coefficients [95%CI]	Slope change estimated coefficients [95%CI]
Charlson comorbidity index based on primary and secondary diagnoses				
Length of stay	-0.0162***	0.0017***	0.0076**	0.0025***
	[-0.0224, -0.0099]	[0.0013, 0.0021]	[0.0020, 0.0131]	[0.0021, 0.0028]
In-hospital mortality (%)	-0.0432***	0.0017**	0.0071	0.0024***
	[-0.0656, -0.0209]	[0.0005, 0.0029]	[-0.0143, 0.0286]	[0.0013, 0.0036]
Emergency readmission (%)	-0.0283***	-0.0010*	-0.0051	-0.0003
	[-0.0424, -0.0143]	[-0.0019, -0.0002]	[-0.0180, 0.0077]	[-0.0010, 0.0005]
Whether the patient had a chronic disease				
Length of stay	-0.0165***	0.0017***	0.0078**	0.0025**
	[-0.0229, -0.0101]	[0.0013, 0.0021]	[0.0022, 0.0135]	[0.0022, 0.0029]
In-hospital mortality (%)	-0.0198	0.0017**	0.0052	0.0025***
	[-0.0417, 0.0021]	[0.0006, 0.0028]	[-0.0160, 0.0264]	[0.0013, 0.0036]
Emergency readmission (%)	-0.0268***	-0.0009*	-0.0056	0.0005
	[-0.0409, -0.0127]	[-0.0017, -0.0000]	[-0.0185, 0.0073]	[-0.0003, 0.0013]

Note: In this sensitivity analysis, we used two alternative approaches to measuring disease burden rather than the Charlson comorbidity index based on primary diagnosis. First, we controlled for Charlson comorbidity index calculated based on both primary and secondary diagnoses. Second, we controlled for whether the patient had any chronic disease.

*** $P < .001$; ** $P < .01$; * $P < .05$.

eTable 5. Changes in volume of care associated with the introduction and discontinuation of DRGs, population number of admissions on mega-cluster level

	Introduction of DRGs		Discontinuation of DRGs	
	Step change estimated coefficients [95% CI]	Slope change estimated coefficients [95% CI]	Step change estimated coefficients [95% CI]	Slope change estimated coefficients [95% CI]
Average monthly admissions per month	0.0324***	-0.0021***	-0.0145***	-0.0020***
	[0.0284, 0.0364]	[-0.0023, -0.0019]	[-0.0182, -0.0108]	[-0.0022, -0.0019]

Note: The number of hospital admissions is counted at the mega-cluster level, which combines the existing 18 districts into 3 larger geographical groups—Hong Kong Island, Kowloon, and New Territories—to mitigate the cross-cluster movement of patients.

*** $P < .001$; ** $P < .01$; * $P < .05$.